USDA UNITED STATES DEPARTMENT OF AGRICULTURE

Forest Service

Region 5

Inyo

Land and Resource Management Plan for the Inyo NF

EIS

- Part A
- Part B
- Part C

EIS Appendix

- Part A
- Part B
- Part C
- Part D
- Part E

FEIS and Plan Maps

- Preferred Alternative
- Facilities and Recreation-North Half
- Facilities and Recreation-South Half
- Visual Resource-North Half
- Visual Resource South Half
- Rare II Study-North Half

Rare II Study-South Half

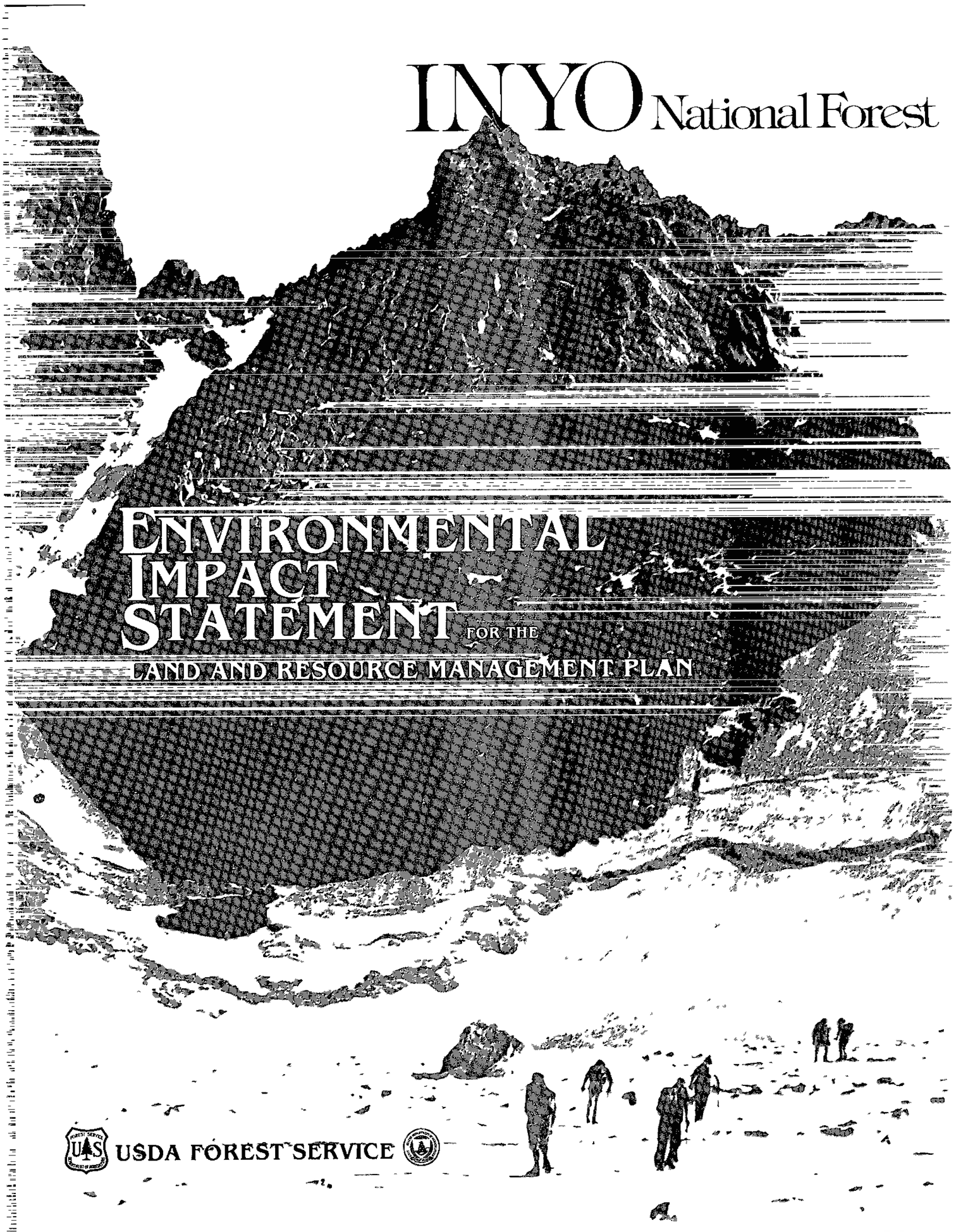
Forest Plan

Part A

Part B

Record Of Decision

INYO National Forest



ENVIRONMENTAL IMPACT STATEMENT FOR THE

LAND AND RESOURCE MANAGEMENT PLAN

USDA FOREST SERVICE

Inyo National Forest

Pacific Southwest Region USDA Forest Service

Environmental Impact Statement

for the

Land and Resource Management Plan

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TABLE OF CONTENTS

Chapter | Page

SUMMARY

Purpose of and Need for Action..... 1
Alternatives, including the Proposed Action..... 3
Affected Environment..... 16
Environmental Consequences..... 31

I. PURPOSE OF AND NEED FOR ACTION

Background and Direction..... 40
Planning Process..... 41
Relationship with Past and Future Planning..... 42
Additional Sources of Information..... 45
Location of the Planning Area..... 45
Issues and Concerns..... 46

II. ALTERNATIVES

Introduction..... 58
Alternative Development Process..... 59
Alternative Development Steps..... 60
Range of Alternatives..... 61
Benchmarks..... 63
Conclusions Drawn from the Benchmark Analysis..... 70
Alternatives Eliminated from Detailed Study..... 80
Alternatives Considered in Detail..... 86
Management Prescriptions and Management Areas..... 99
Alternative Descriptions..... 107
- PRF - Preferred Alternative..... 108
- CUR - Current (1982) Program - No Action..... 118
- RPA - 1980 RPA Program..... 128
- CEE - Maximize Cost Efficiency..... 138
- AMN - Maximize Amenity Values..... 148
- AMB - Emphasize Wildlife and Recreation..... 158

Comparison of Alternatives..... 168

III. AFFECTED ENVIRONMENT

Introduction..... 216
General Description of the Forest..... 216
The Economic Environment..... 218
The Social Environment..... 224
The Resource Environment
- Air Quality..... 229
- Cultural Resources..... 231
- Diversity..... 234
- Energy..... 237
- Facilities..... 239

Fish..... 244
Further Planning Areas..... 248
Geology..... 251
Lands..... 253
Minerals..... 258
Mono Basin National Forest Scenic Area..... 263
Pest Management..... 264
Protection (Fire Management)..... 266
Range..... 267
Recreation..... 271
Research Natural Areas..... 287
Riparian Areas..... 290
Sensitive Plants..... 292
Special Interest Areas and National Natural Landmarks... 295
Timber..... 297
Visual Resources..... 305
Watershed (Soils and Water)..... 309
Wild and Scenic Rivers..... 324
Wilderness..... 326
Wildlife..... 328

IV. ENVIRONMENTAL CONSEQUENCES

Introduction..... 339
Economic Environment..... 340
Social Environment..... 344
Resource Environment
Air Quality..... 352
Cultural Resources..... 355
Diversity..... 360
Energy..... 364
Facilities..... 365
Fish..... 370
Further Planning Areas..... 376
Geology..... 384
Lands..... 390
Minerals..... 392
Mono Basin National Forest Scenic Area..... 398
Pest Management..... 399
Protection (Fire Management)..... 402
Range..... 407
Recreation..... 413
Research Natural Areas..... 430
Riparian Areas..... 432
Sensitive Plants..... 437
Special Interest Areas and National Natural Landmarks... 440
Timber..... 441
Visual Resources..... 447
Watershed (Soils and Water)..... 455
Wild and Scenic Rivers..... 468
Wilderness..... 468
Wildlife..... 474
Mitigation of Adverse Impacts..... 486
Adverse Impacts That Cannot Be Avoided..... 487

Relationship Between Short-term Uses and Long-term Productivity..... 488
Irreversible or Irretrievable Commitment of Resources..... 489
Energy Requirements and Conservation Potential..... 491

V. LIST OF PREPARERS 494

VI. CONSULTATION 502

VII. RECIPIENT LIST 504

VIII. GLOSSARY 512

IX. INDEX 547

SUMMARY OF THE EIS

I. PURPOSE OF AND NEED FOR ACTION

This chapter describes why the Plan is being produced and the issues and concerns that form the basis for this Environmental Impact Statement. The Inyo National Forest proposes the implementation of a comprehensive Land and Resource Management Plan (Plan). The Plan provides direction for the management of all lands and resources administered by the Inyo National Forest for the next ten to fifteen years. This Environmental Impact Statement (EIS) documents the environmental analysis conducted as part of the planning process.

The planning process is conducted under the auspices of the Multiple Use-Sustained Yield Act of 1960, the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA) and the National Forest Management Act of 1976 (NFMA). The planning process itself is outlined in the implementing regulations for those acts (36 CFR 219). Planning on each National Forest is coordinated with comparable planning at the regional and national levels for all National Forest System lands.

The Plan will supersede all past plans for individual resources or land units on the Forest. See Appendix A in the Plan for listing of the documents. These past plans fit into one of three categories: (1) incorporated into the Plan without revision; (2) incorporated with direction to be revised or updated; or (3) replaced by the Plan. All future environmental documents for plans and projects on the Forest will be tiered to the Plan.

The Plan can be amended at any time, and all National Forest Plans will be revised every ten to fifteen years. Amendment and revision will include environmental analysis, documentation, and public involvement to the degree appropriate for the change proposed. The Regional Forester's decision to approve the Plan and its EIS is subject to the public's rights of administrative appeal. Preliminary process decisions are not subject to appeal [See 36 CFR 211.18(b)(11)].

The area covered by the Plan includes National Forest System lands within the Inyo National Forest boundary (1,931,115 acres) and 25,201 acres of the Sierra National Forest administered by the Inyo.

Inyo National Forest Lands

County	National Forest acres	% of total
Mono (California)	811,049	42.0
Inyo "	794,352	41.1
Tulare "	186,165	9.7
Madera "	50,406	2.6
Fresno "	25,256	1.3
Esmeralda (Nevada)	49,884	2.6
Mineral "	14,003	0.7
Total	**1,931,115**	**100.0**

In September, 1984, Congress designated the Mono Basin National Forest Scenic Area, which encompasses 116,000 acres of land within the Forest boundary. Detailed resource and development planning for the Scenic Area is being conducted separately from this planning process.

Public issues and management concerns are aspects of natural resource management that receive special emphasis in planning. The issues and concerns collectively indicate the scope and nature of the analysis needed for the Environmental Impact Statement; serve as blueprints for the structuring of alternatives, direct the evaluation of environmental consequences, and outline the resource use and development opportunities on the Forest. The following are the issues and concerns identified for the Inyo National Forest.

1. How can the Forest produce goods and services to maximize economic efficiency?

2. How does the management of the Inyo National Forest influence the local social environment and lifestyle?

3. What can the Forest do to influence air quality?

4. How should the Forest manage cultural resources and provide for the use of Forest lands by American Indians for traditional practices?

5. What is a desirable level of vegetative diversity for the Inyo, and what should the Forest do to maintain or achieve that level?

6. How does energy development fit in with the overall resource management program on the Forest?

7. What level of facility construction and maintenance is needed to support Forest management objectives?

8. How should fish habitat on the Inyo National Forest be managed?

9. How should Further Planning Areas on the Forest be managed?

10. What is the role of geologic resources and services in the overall Forest management program?

11. What land use and landownership adjustment policies and procedures are needed to respond both to local community needs and to the demands of regional and national publics?

12. How can the Forest best encourage mineral (including geothermal) exploration and development while protecting surface resource values and other land uses?

13. What is the appropriate pest management strategy for the Inyo?

14. What is the appropriate fire management strategy for the Inyo?

15. How should the Inyo balance the needs of the range program (domestic livestock and wild horses and burros) with the need to protect and/or produce other resources?

16. What is the best recreation opportunity program for the Inyo (considering supply, demand, other resource management and development opportunities, and environmental protection needs)?

17. What contribution should the Inyo make to the national and regional systems of Research Natural Areas?

18. What is the significance of riparian areas on the Forest, and how should riparian area-dependent resources be maintained, enhanced, and/or restored?

19. How should the Forest manage habitat for sensitive plant species?

20. Should the Forest consider establishing any additional Special Interest Areas?

21. What is the best balance between timber (including fuelwood) production, other resource management and development opportunities, and environmental protection needs?

22. What role does visual quality play in the overall resource management program, and how can that quality be protected and enhanced?

23. How should the Forest respond to the needs for water quality, increased water yields, water rights for Forest resource management, and healthy watershed condition?

24. What recommendations should the Forest make for the management of candidate wild and scenic rivers?

25. Is there any need for change in the management of designated wilderness on the Forest?

26. How, where, and to what degree should wildlife habitat be maintained and enhanced, and how should wildlife needs be coordinated with other resource management and development opportunities on the Forest?

II. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter describes the alternatives analyzed in the planning process. Each alternative describes management direction that is designed to guide the management of Forest lands and resources from their current state to a desired future condition. Many combinations of resource uses and management activities are possible in formulating a reasonable range of alternatives.

The alternative formulation process began with the analysis of Benchmarks. Benchmarks are analytical models that serve three functions: to determine resource costs and outputs at the minimum level of management; to determine

the maximum physical and biological capacity of the Forest to produce certain key resources; and to calculate the most economically efficient mix of management activities under different sets of objectives. By establishing minimum, maximum, and cost-efficient output levels, the Benchmarks describe a "decision space" within which reasonable alternatives can be developed and set standards with which the alternatives can be compared.

All alternatives were designed to meet a set of management requirements and standards and guidelines that would be acceptable to the public and could be implemented on the ground. Those requirements address such issues as long-term sustained yield and non-declining even flow of wood products, wildlife and fish population viability, vegetative diversity, soil productivity and water quality, riparian area protection, and scenic quality.

Eleven alternatives were initially developed. Of those eleven, five were eliminated from further study and six were studied in detail. Alternatives were eliminated from further study for various reasons. Two of the alternatives had extremely high projected timber outputs, but failed to meet the timber policy requirement of non-declining even flow. Two additional alternatives, with large wilderness recommendations, did not respond to the management concern that wilderness on the Forest be suitable for and manageable as wilderness. The fifth alternative, which had a severe budget limitation, responded very poorly to the primary public issue on the Inyo National Forest, which is the quality and quantity of recreation opportunities.

The following six alternatives were studied in detail.

PRF: PREFERRED ALTERNATIVE

This is the modified Preferred Alternative resulting from public comments received on the Draft Preferred Alternative and intensive review by the Inyo National Forest management and interdisciplinary teams. It is designed to reflect the changes needed to incorporate identified concerns. A mixture of both commodity and amenity outputs will be produced, with provision for the historic uses of the Forest.

Developed summer recreation will be managed with the objective of increasing opportunities in response to demand with the amount of development limited to the number of inventoried, undeveloped sites. Alpine skiing will increase consistent with approved development plans and at a rate that responds to demand consistent with environmental and infrastructure constraints. The amount of development will be closely coordinated with community planning, so that ski area capacity and the community's ability to provide support services will be developed together. Additional dispersed recreation opportunities will be provided for both winter and summer use.

Timber will be managed to provide a continuing supply of wood products to meet demand. Timber management objectives will be compatible with recreation, wildlife, visual and other resource values.

Domestic livestock grazing will be managed to meet local demand and to be compatible with timber and wildlife objectives.

The wilderness land base will be increased by the addition of Further Planning Areas with high wilderness recreation value, in combination with a low level of conflict with other resources; ecological systems not yet represented in wilderness on the Inyo; or logical additions to existing wilderness, in combination with a low level of conflict with other resources.

Wildlife habitat will be managed with the objectives of maintaining or enhancing deer habitat capacity; achieving recovery for threatened and endangered species; maintaining or enhancing habitat for sensitive and special interest species; and maintaining population viability for all other native vertebrate species. Fish habitat will be managed with the objectives of responding to projected increases in dispersed recreation and achieving recovery for threatened trout species.

CUR: CURRENT (1982) PROGRAM - NO ACTION

This alternative displays the current program of management activities on the Inyo National Forest and projects it over the fifty-year planning horizon. The 1982 Forest budget is a constraint in the FORPLAN model. The budget remains essentially constant over the planning horizon and continues to be distributed among the resources in roughly the same proportions as in 1982.

Developed summer recreation will be managed with the objective of maintaining use at current levels through the fifth decade. Alpine skiing will increase at a rate that responds to demand. The actual amount of development will be closely coordinated with community planning so that ski area capacity and the ability of the community to provide support services are developed together. The management of dispersed summer and winter recreation will allow for an increase in use, but the quality of the experience will deteriorate because of reduced standards due to a limited budget.

Timber will be managed with the objective of maintaining currently projected outputs over the planning horizon.

The grazing program will be managed with the objective of maintaining the current level of management intensity through the fifth decade.

The wilderness land base will be increased by the addition of Further Planning Areas with ecological systems not yet represented in wilderness on the Inyo.

Wildlife habitat will be managed with the objectives of minimizing Forest-wide reduction of deer habitat capacity; achieving recovery for threatened and endangered species; maintaining or enhancing habitat for sensitive and special interest species; and maintaining population viability for all other native vertebrate species. Fish habitat will be managed with the objectives of responding to projected increases in dispersed recreation and achieving recovery for threatened trout.

RPA: MEET TARGETS AND GOALS OF THE 1980 RESOURCES PLANNING ACT PROGRAM

This alternative is designed to meet the targets and goals of the 1980 RPA Program, representing moderate to high outputs of commodities and selected amenities. Some of the assigned RPA targets and goals for the Forest are not mutually compatible. Where there is a conflict, market outputs (timber, range, and developed recreation) are given priority over non-market outputs and amenities. In cases for which RPA goals could not be met in this alternative, they are met in one or more of the other alternatives studied in detail. There is no budget limitation in the FORPLAN model.

Timber will be managed with the objective of achieving a programmed annual harvest of 19.2 million board feet (MMBF).

Domestic livestock grazing will be managed with the objective of producing at least 55,600 average annual Animal Unit Months (AUMs) by the fifth decade, representing the President's target of a 46 percent increase over the specified base level.

Developed recreation will be managed with the objective of increasing opportunities in response to demand. The actual amount of development will be limited by potential supply. Alpine skiing will increase in response to demand to the extent compatible with timber objectives. The management of dispersed summer and winter recreation will provide for an increase in use roughly proportional to developed site use.

Wildlife habitat will be managed with the objectives of minimizing Forest-wide reductions in deer habitat capacity, given range and alpine skiing priorities; achieving recovery for threatened and endangered species; and maintaining population viability for all other native vertebrate species. Fish habitat will be managed with the objectives of achieving recovery for threatened trout species; responding to projected increases in dispersed recreation; and increasing stream trout habitat by 20 percent in response to the RPA goal.

CEE: MAXIMIZE COST-EFFICIENCY

This alternative seeks the most cost-effective mix of land allocations and management practices available on the Inyo National Forest, given the application of Minimum Management Requirements (MMRs), Timber Policy Requirements, Minimum Implementation Requirements, and Forest-wide Standards and Guidelines.

If the Forest is managed with the single objective of maximizing cost-efficiency, the following conditions will exist:

> Developed recreation (including alpine skiing) and dispersed recreation will be provided in response to projected demand to the extent possible, limited by supply. All potential sites will be developed and operated at standard levels of service.
>
> Those Further Planning Areas with moderate to high potential for wilderness recreation use will be recommended for wilderness.

Timber outputs will be managed at cost-effective levels outside developed recreation sites and ski areas, representing an Allowable Sale Quantity of 10.1 MMBF by the fifth decade.

The grazing program will be managed at cost-effective levels, representing 46,500 AUMs, or a 12 percent increase over the base year of 1982 by the fifth decade.

Wildlife and fish habitat improvement for harvest species will be maximized in response to demand for hunting and fishing (the supply could not, however, meet that demand). Habitat for threatened and endangered species will be managed for recovery. Habitat for all other species will be managed for population viability.

AMN: MAXIMIZE AMENITY VALUES

Under this alternative, amenities are maximized with little regard for the effects on commodity outputs. Wilderness, wildlife, and primitive and semi-primitive dispersed recreation are emphasized. There is no budget limitation in the FORPLAN model.

The wilderness land base will be increased by the addition of all Further Planning Areas that are at least minimally suitable for wilderness, considering wilderness characteristics and boundary manageability.

Wildlife habitat will be managed with the objectives of increasing mule deer habitat capacity by at least 20 percent in response to the RPA goal of maximizing habitat for threatened and endangered species; meeting the RPA goal of at least maintaining current habitat capacity for cavity-nesting birds; maximizing habitat capacity for sensitive and special interest species; and maintaining or enhancing habitat for all other native vertebrate species. Fish habitat will be managed with the objectives of responding to projected levels of dispersed recreation and maximizing habitat for threatened trout species.

Dispersed recreation will be managed with an emphasis on the quality of the experience, rather than the quantity of use. Primitive and semi-primitive opportunities and a high level of scenic quality will be emphasized. Developed summer recreation will be managed with the objective of maintaining current levels of use through the fifth decade. Alpine ski area development will increase at a rate that responds to demand to the level projected in the Mammoth-Mono Unit Plan.

Timber will be managed for commercial production to the extent compatible with cost-efficiency and amenity objectives.

Domestic livestock grazing will be managed to the extent compatible with wildlife objectives.

AMB - EMPHASIZE WILDLIFE AND RECREATION

This alternative places a primary emphasis on the quality and quantity of wildlife habitat with a secondary emphasis on moderate expansion of the developed recreation program. Other commodity outputs are produced to the degree compatible with wildlife and recreation objectives. Amenity values other than wildlife receive a moderate degree of emphasis. There is no budget limitation in the FORPLAN model.

Wildlife habitat will be managed with the objectives of increasing mule deer habitat capacity; maximizing habitat for threatened and endangered species; maximizing habitat for sensitive and special interest species; and moderately improving ecological diversity to enhance habitat for other native vertebrate species. Fish habitat will be managed with the objectives of responding to projected increases in dispersed recreation and maximizing habitat for threatened trout species.

Developed recreation will be managed with the objective of increasing use 30 to 35 percent by the year 2030. Alpine ski area development will increase in response to demand where compatible with wildlife objectives. The management of dispersed summer and winter recreation will provide for an increase in use roughly proportional to developed site use.

The wilderness land base will be increased by the addition of Further Planning Areas with moderate to high wilderness recreation values and/or ecological types not yet represented in wilderness on the Inyo.

Domestic livestock grazing will be managed to the extent compatible with wildlife objectives.

Timber will be managed for maximum production to the extent compatible with cost-efficiency and wildlife, recreation, and range objectives.

COMPARATIVE OVERVIEW OF ALTERNATIVES

The following discussion compares the six alternatives studied in detail in terms of the Forest's resources.

MINERALS

It is assumed that the quantity of geothermal, small hydroelectric, wind, and solar energy resource development that could occur is generated by private industry. There are no plans to lease additional land for geothermal development under any alternative.

The greatest acreage of land with high and medium mineral potential withdrawn from mineral entry is in the AMN alternative, followed by CEE, AMB, PRF, CUR and RPA. Most of the difference in acreage results from the differences in withdrawals for wilderness.

RANGE

The competition between domestic livestock and mule deer is addressed differently in each alternative. Cattle have priority over mule deer (in terms of increased forage resulting from range improvements) on key deer winter range in RPA. Mule deer have priority in PRF, CUR, and CEE; cattle are removed entirely from key winter range in AMN and AMB. Cattle grazing in key deer fawning areas is deferred until after July 15 in AMN and AMB; fawning areas are also emphasized in PRF and CUR, but specific details are left to resolution in allotment management plans.

The competition between livestock grazing and timber management is also handled differently in each alternative. Cattle grazing is allowed to decline from current levels in suitable timber under all alternatives except AMB, in which current levels area maintained.

Range outputs are increased in most alternatives. RPA represents a 34 percent increase in grazing over current levels. CEE represents a 12 percent increase; PRF maintains current levels. CUR, AMN, and AMB involve 6, 15, and 5 percent reductions in range outputs respectively by the fifth decade.

RECREATION

The quantity of use, quality of recreational experiences, and type of recreational opportunities differ considerably by alternative; however, most of that difference occurs on a limited number of acres.

Most differences in the quantity of developed recreation, other than alpine skiing, occur primarily in concentrated recreation areas as a result of increased developed site capacity. Differences in quality of developed recreation result from maintenance and service standards.

The greatest differences in quantity of dispersed recreation use occur in concentrated recreation areas in association with the quantity of developed site use.

These differences tend to be concentrated on lands in the area from Mammoth to Lee Vining with timber, geothermal, alpine skiing, and developed site potential; the major Sierra Nevada drainages from Convict Lake to Horseshoe Meadow with developed site potential; and the Monache area of the Kern Plateau with timber potential.

The assumption is that, other than a moderate trend toward more dispersed use, recreation on most Forest lands will not change substantially from the current situation under any alternative.

Developed Recreation

The quantity of developed summer recreation represents a wide range of outputs under the alternatives. CUR and AMN represent the lowest level of use with the maintenance at current levels. AMB represents a moderate increase in use. PRF, RPA, and CEE represent the high end of the scale with

an increase of 57 percent over base year use by the fifth decade. Increases will occur primarily in the public sector.

The quality of developed recreation experiences will also vary. A standard level of facility maintenance and service contributes to recreational quality; low standard levels detract from such quality. The quality of developed recreation experiences will be impaired by low standard operation only in CUR.

Alpine Skiing

Alpine ski area capacity estimates differ considerably by alternative. Projected ski area capacity ranges from 31,000 SAOT (1,678,600 RVDs) at the low end to 61,000 SAOT (3,372,600 RVDs) at the high end. AMN provides for the least growth with the other alternatives increasing in order: CUR, AMB, RPA, to CEE. PRF calls for capacity at approved development plans. Additional development will require a cumulative impact study. The Sherwin Bowl proposed ski area is currently being analyzed outside this planning process in a separate Environmental Impact Statement.

Dispersed Recreation

The quantity of dispersed recreation is assumed to increase in general proportion to public developed site capacity and use. A large part of dispersed summer use on the Forest is generated by campground use. To a lesser degree, dispersed winter use is generated by people who come to the Forest primarily because of alpine skiing opportunities.

The quality of dispersed recreation in concentrated recreation areas is related to the overall amount of use and the availability of facilities such as trails, restrooms, and interpretive signs that distribute use and protect resource values. Increased use will be highest in PRF, RPA, and CEE because of the full development of facilities and standard levels of service. CUR will perpetuate the current low level of recreational quality, despite the minimal increase in use, due to a lack of support facilities and low levels of service. AMB will represent higher overall quality with a moderate increase both in use and in facilities. AMN projects high quality with slightly increased use and substantially increased facilities.

Dispersed recreation opportunities vary from primitive (no facilities, no vehicles, few people), through semi-primitive to intensively developed (many facilities, many vehicles, many people). These will be clustered at the primitive and semi-primitive end of the scale in AMN and AMB. More opportunities related to road construction and facility development are available in PRF, CUR, RPA and CEE, in that order.

Recreation quality is affected by the potential for conflict with other resources. Timber management on the Inyo does not generally conflict directly with dispersed recreation use. Conflicts with summer use are minimized because most logging occurs in the winter, and conflicts with winter dispersed use can be minimized by locating nordic ski and snowmobile trails as needed to avoid those areas being harvested.

The two areas most susceptible to new or increased motorized use resulting from timber road access are the unroaded forested lands east of San Joaquin Ridge and the Monache area of the Kern Plateau. Neither area is harvested in AMN and PRF; only the San Joaquin area is harvested in AMB. Both areas are harvested under the other alternatives.

Fishing opportunities outside of hatchery-stocked fisheries are related to the productivity of resident trout fisheries, which is affected in turn by the amount of stream habitat and watershed improvement under an alternative. There is little difference between the alternatives for fishing opportunities. Opportunities to increase habitat capacity are limited.

Big game hunting opportunities are related to the number of deer on the Forest. Deer populations may decline under the impacts of facility development, improved access, and increased livestock on winter range. They may increase with habitat improvement and reduced competition with livestock on key deer range. The ranking of alternatives according to hunting opportunities lists AMN, AMB and PRF at the high end, CUR in the middle, and RPA and CEE at the low end.

TIMBER

The alternatives differ in the amount of acreage determined suitable for timber management, as compared with the acres considered tentatively suitable for planning purposes. The final calculation of suitable acres (those that will actually be managed for timber production under an alternative) was derived from the tentatively suitable land base. Subtracted from this were timberlands in recommended wilderness, concentrated recreation areas, alpine ski areas, and areas managed with an amenity emphasis under an alternative. The largest suitable timber acreage is found in RPA. Acreage figures decline from RPA to CEE, to CUR, to PRF, to AMB, to AMN at the low end of the scale. The suitable timber in RPA represents 90 percent of tentatively suitable timber; AMN represents 56 percent.

The alternatives also differ in timber outputs, but the difference is not directly proportional to suitable timber acreage under each alternative. The reason for this lack of proportionality is the fact that suitable acreage may be managed under one of several sets of management strategies. High level timber management will produce more board feet per acre than moderate level management. Timber outputs in the fifth decade range from 19.8 MMBF for RPA to 6.5 MMBF for AMN, representing a range from 2,000 to 1,000 board-feet produced (on the average) per acre of suitable timber.

Fuelwood resulting from logging debris is roughly proportional to overall timber outputs. Additional fuelwood may be made available as part of the programmed harvest if needed to respond to demand.

WILDERNESS

Alternatives differ in the total acreage recommended for wilderness. RPA represents the low end of the scale, with no wilderness recommendations; AMN represents the high end of the scale, with 510,800 acres in twelve areas

recommended for wilderness. The other alternatives in increasing order of acres recommended, are: PRF, CUR, AMB, and CEE.

Recreation use is not proportional to quantity of acres recommended. The Further Planning Areas on the Forest, as a group, have fewer wilderness attributes than designated wilderness. Although natural integrity and opportunities for solitude tend to be high, natural appearance and opportunities for primitive recreation tend to be low. The latter is true Primarily because many Further Planning Areas have primitive roads, accessible by four-wheel drive vehicles, and lack the available water sources that will facilitate non-motorized recreation.

The amount of wilderness recreation use projected for an alternative reflects the availability of primitive recreation opportunities in the areas recommended for wilderness under that alternative. AMN, for example, which has the largest recommended wilderness acreage, includes considerable acreage in Further Planning Areas with moderate to low wilderness quality and low projected levels of wilderness recreation use. CUR recommends only that part of the White and Inyo Mountains with outstanding ecological features such as desert springs and alpine tundra. PRF, CEE, AMN and AMB include additional acreage without such features.

WILDLIFE AND FISH

The majority of direction for wildlife and fish habitat is found in the Forest-wide Standards and Guidelines common to all alternatives; such direction is intended to meet Minimum Management Requirements (MMRs) for native verterbrate species. In only the following cases does direction exceed the MMRs and, therefore, vary by alternative.

Mule deer. PRF, CUR, and CEE give priority to mule deer over cattle for any increases in forage production on key deer winter range; AMN and AMB remove cattle from key winter range; RPA gives priority to cattle on winter range. AMN and AMB call for delayed livestock grazing in key deer fawning areas; PRF and CUR also emphasize fawning areas, but leave the details to allotment management plans; RPA and CEE place no special emphasis on fawning areas. AMN, AMB, and PRF emphasize the integrity of mule deer migration routes; the other do not address migration routes.

Peregrine falcon. PRF, CUR, RPA, and CEE provide for the reintroduction of two nesting pairs; AMN and AMB provide for four.

Goshawk. PRF, CUR, AMN, and AMB maintain fifteen (all existing) goshawk territories in suitable timber; RPA and CEE will allow a reduction in the number of such territories, maintaining only nine (the number needed to meet minimum management requirements). PRF, AMN, and AMB provide one hundred acres per goshawk territory; the remaining provide only the minimum management level, fifty acres per territory.

Sierra Nevada mountain sheep. RPA and CEE provide for no additional reintroduced herds; PRF and CUR provide for at least one additional herd; AMN and AMB provide for seven additional herds.

Riparian area dependent species. All alternatives call for negotiating with utility companies to rewater selected reaches of stream and reestablishment of streamside riparian vegetation. Wet meadows represent more than two-thirds of the riparian vegetation on the Forest. Of the 26,000 acres of wet meadow on the Forest, 23,500 acres have been identified for watershed restoration. CEE, AMN, and AMB call for full watershed restoration in wet meadows over fifty years; PRF calls for 17,100 acres of watershed work; RPA for 9,900 acres; and CUR for 2,000 acres.

Older seral stage dependent species. The alternatives vary in the amount of suitable timber maintained in older seral stages. CUR, RPA, and CEE maintain only the amount needed for goshawk nesting territories (see above). PRF maintains 5.4 percent of suitable timber in older seral stages, AMN 30 percent, and AMB 20 percent.

Snag dependent species. PRF, CUR, RPA, and CEE will apply only the Minimum Management requirements for snags (maintain at least 40 percent of natural potential). AMN and AMB call for maintaining 100 percent of natural potential snag-dependent wildlife density.

Fish. There is limited potential to increase fish habitat capability on the Forest. More than 90 percent of resident trout are found in lakes, where habitat condition is generally good and there are no identified opportunities to enhance or increase habitat. The majority of both lake and stream habitat is in wilderness, where habitat is also generally good and any potential for enhancement will be limited by wilderness management.

Of the stream acreage identified as suitable and available for habitat improvement, CEE implements the full program; PRF, RPA, AMN, and AMB represent high levels of improvement; CUR represents a moderately high level. Additional fish habitat improvement is induced from watershed improvement, discussed above under riparian area-dependent species.

Threatened trout habitat is managed only for species recovery under PRF, CUR, RPA, and CEE; AMN and AMB call for increasing threatened trout habitat above recovery levels.

ECONOMICS AND TRADEOFF ANALYSIS

The major economic tradeoffs between the alternatives are projected economic effects; costs and values of priced and non-priced resources and benefits; and the level of national and regional issue resolution. Economic indicators are of concern to the federal taxpayer, as they measure alternatives in terms of their responsiveness to economic efficiency in government.

Total public benefits from the Inyo National Forest increase over the next fifty years primarily in response to the amount of dispersed and developed recreation, and (to a much lesser degree) in response to wildlife, watershed, timber, and range outputs. Increases in total benefits for the studied in detail range from 20 percent to 107 percent above the 1982 base level.

The lowest economic benefit levels are found in those alternatives in which developed recreation or ski area expansion is limited by budget or other

resource considerations. Non-cash benefits, derived primarily from recreation use, comprise 94 percent to 97 percent of total Forest benefits in the first decade. Cash returns increase over the planning horizon in direct proportion to the size of the developed recreation, timber, and range programs. CUR provides the least impressive gains in cash benefits.

Total costs increase from 7 percent to 35 percent above the 1982 base year level in the first decade. These cost increases primarily reflect increases in capital investments, which range from a 28 percent reduction to a greater than 600 percent increase over the 1982 base year level. Recreation facility, trail, and timber road construction vary with the size of the recreation program, the amount of wilderness proposed, and the quantity of timber harvested.

Employment and income opportunities are drawn primarily from developed recreation, alpine skiing, timber harvest, and livestock grazing. Related support businesses provide considerably smaller proportions of the available jobs. Changes in local employment opportunity range from zero to an increase of more than 36 percent.

A comparison of Present Net Value (PNV) between key benchmarks and alternatives illustrates the economic and resource opportunity costs of the Minimum Management Requirements, Timber Policy Requirements, and Minimum Implementation Requirements. The basis of the Present Net Value comparison is the most economically efficient, unconstrained benchmark (FLW).

The Minimum Management Requirements and Timber Policy Requirements represent the first set of objectives added to FLW, resulting in the MMR Benchmark. These requirements include goshawk nesting territories, riparian area protection, maintenance of soil and water productivity, and minimum diversity of vegetative seral stages. On the Inyo National Forest, only goshawk territories and riparian area protection were applied as constraints on the resource allocation model. Each of these requirements slightly restricted timber harvest.

The Minimum Implementation Requirements represent the second set of objectives analyzed. They were added to the MMR benchmark, resulting in the CEE Alternative. On the Inyo National Forest, maintenance of visual quality along state-designated scenic highways was the only Minimum Implementation Requirement applied to the analysis. The only effect was a slight additional restriction on timber harvest.

The Minimum Management Requirements, Timber Policy Requirements and Minimum Implementation Requirements collectively represent a reduction in Present Net Value (PNV) of $0.3 million, less than 0.01 percent of the PNV for the FLW benchmark. This reduction in PNV results primarily from increased costs for timber production and a loss of 0.275 MMBF of timber harvest over the first five decades. The goshawk and riparian area requirements had the greatest effect on timber costs. These requirements ensure the maintenance of nine goshawk territories of fifty acres each in suitable timber and the protection of riparian area-dependent resources in suitable timber. The two requirements shared equally in reducing PNV.

The Timber Policy Requirements of harvest dispersion and non-declining yield had negligible effects on PNV due to the low relative value of timber on the Inyo National Forest and the interaction of stand growth, discounting of costs and benefits, and price trends. These factors combined to reduce the harvest in earlier decades with the trend steadily climbing and stabilizing in later decades. Allowing for harvest to decline in the later decades had no appreciable effect on PNV, due mainly to the discounting factor.

The Management Implementation Requirement for visual quality protection resulted in a very slight drop of $0.1 million in PNV due to restrictions on timber harvest techniques and limitations on the size of openings.

The total cost of constraints added to benchmarks to develop the CEE Alternative are insignificant in terms of reduced PNV or reduced resource production capability. The impact of the Minimum Management Requirements, Timber Policy Requirements, and Management Implementation Requirements was felt exclusively on timber benefits, which at most provide less than 3 percent of the total discounted benefits on the Forest. The distribution of benefits within the recreation program varied on the basis of facility maintenance levels, wilderness recommendations, and the extent of alpine ski area development. Timber, range, and other resource benefits and costs were far less significant than recreation in determining the relative PNV of the alternatives.

The CUR Alternative ranks lowest in PNV, primarily because budget constraints in the FORPLAN model limited opportunities to contribute to PNV.

An examination of net cash flow for the alternatives indicates that expenditures are greater than returns to the Treasury in all alternatives for both the first and fifth decades.

Cash receipts will be derived mainly from developed recreation and timber production, with livestock grazing and geothermal energy resources representing 3 to 8 percent of the total. Gross receipts for all alternatives will be higher than the 1982 base level of $2.2 million. Receipts will be expected to nearly double between the first and fifth decades in all alternatives except CUR, which increases the least because of budget limitations. Even with substantial increases in returns to the treasury, negative net cash flow increases in all alternatives except CUR, AMN, and AMB, which have the lowest total federal costs. This relationship is due primarily to the need for substantial investment in order to realize major benefits in the recreation and timber programs.

A large part of the total benefits derived from Inyo National Forest lands represents the estimated amount that consumers will be willing to pay for Forest outputs such as recreation. These values do not reflect the amount that they actually pay for those outputs and are termed "willingness-to-pay assigned values." Consequently, the actual cash received by the U.S. Government is not proportional to total benefits generated by Forest management programs.

The ranking of alternatives by net cash flow is inversely proportional to costs in the first decade. Generally, those alternatives that move up in the ranking between the first and the fifth decade are those that recommend large

acreages for wilderness and that have reduced timber and developed recreation production. This relationship results from the high initial costs of wilderness designation (trail and trailhead construction) versus the moderate costs and high-level benefits of wilderness management over the long term.

The most economically efficient alternative, CEE, falls near the middle of the first-decade ranking according to net cash flow. The CUR and RPA Alternatives rank above CEE, as they emphasize resources producing income to the treasury, primarily developed recreation and timber production. AMN and AMB incur large first decade capital-investment costs to accommodate large acreages of proposed wilderness. By the fifth decade, their costs are reduced substantially because neither alternative supports a large timber or developed recreation program. CEE ranks lowest in the fifth decade, primarily because it provides only the most economically efficient timber harvest levels (lower than CUR or RPA) in combination with a substantial recreation program which provides little in terms of actual income to the treasury.

In general, Alternatives CUR, AMN, and AMB (with budget limitations, major initial investments for wilderness, and/or with long-term low-profile timber and recreation programs) provide fewer non-cash benefits than other alternatives. Alternatives RPA, CEE, and PRF (which strive to meet projected public needs through increased developed recreation programs) incur high costs, provide the highest returns to the treasury, and offer the highest non-cash benefits.

That portion of the economic benefits that will not be collected as cash receipts varies considerably across the alternatives. These benefits are based primarily on recreation, wildlife, and range outputs, which provide upwards of 90 percent of the total PNV. For this reason, there is not a large range of net cash flow among the alternatives (except CUR, which is considerably lower because of budgetary restrictions).

It is important to note that all projections beyond ten years are highly speculative, as both natural resource and socio-economic data is extremely variable.

III. AFFECTED ENVIRONMENT

GENERAL DESCRIPTION OF THE FOREST

The Inyo National Forest consists of four Ranger Districts with offices in Lee Vining, Mammoth Lakes, Bishop, and Lone Pine. The Forest Supervisor's office is in Bishop.

The Forest contains 1,931,115 acres, encompassing large parts of the Sierra Nevada, Glass, White, and Inyo Mountains. Most Forest lands drain into the Mono Basin or Owens River. Smaller portions drain westward into the San Joaquin or Kern Rivers, or eastward into the Great Basin. The Forest is long and narrow, extending 165 miles from north to south, and varying in width from four to sixty miles. It straddles the boundary between the southern

Sierra Nevada and southern Basin and Range Physiographic and Geologic Provinces.

The natural environment of the Inyo is noteworthy for its contrasts. Elevations range from 3,680 feet near Owens Dry Lake to the peak of Mt. Whitney at 14,495 feet. Plant and animal habitats include such contrasting elements as desert and wet meadow, forest and alpine tundra. Rugged, barren escarpments stand above forested hills, sagebrush flats, and grassy plateaus.

The climate on the Forest is as diverse as its topography. The higher elevations in the Sierra Nevada receive high levels of precipitation. Mammoth Pass, for example, receives an average of 45 inches a year, most of which falls as snow between November and March. The eastern portions and lower elevations of the Forest are quite arid. The community of Bishop, located at 4,000 feet and about midway between the eastern and western Forest boundaries, records an average of six inches of annual rainfall, most of which occurs during the winter months.

Many outstanding natural features are included within the Forest boundary:

- Mt. Whitney is the highest peak in the 48 contiguous states.

- The Ancient Bristlecone Pine Forest includes both the Methuselah tree (the world's oldest known living tree) and the Patriarch (the largest known bristlecone pine).

- Mono Lake is a large inland sea that supports a unique biological community including brine shrimp, brine flies, nesting California gulls, and several million migratory birds.

- The Mono Craters are "textbook examples" of volcanic geology visited annually by students and scientists from across the nation.

- The Mono Craters and Mono Lake are two of many unique features in the Mono Basin National Forest Scenic Area designated by Congress in 1984.

- The Devils Postpile National Monument, administrered by the National Park Service, lies within the Forest boundary. The Devils Postpile itself is an outstanding volcanic feature.

- The Owens Valley is one of the deepest valleys in the world. The floor of the valley is at 4,000 feet. The mountains on either side are 14,000 feet high.

- The Palisades Glacier is the southernmost glacier in the northern hemisphere.

- The Inyo has the largest continguous pure Jeffrey pine forest in the world.

- White Mountain Peak (14,246 feet) is the highest peak in the Great Basin.

- The native range of golden trout (the California State Fish) lies partly on the Inyo.

- The White Mountain Research Station is the highest site in the U.S. that is occupied year-round.

The scenic appeal and recreational attractions provided by the natural environment and the proximity of the Forest to urban Southern California result in high levels of recreation use. The Inyo National Forest ranks fifth in recreation visitation among National Forests in the nation and second in California. Mammoth Mountain Ski Area receives more skier-days of use per year than any other ski area in the United States. The John Muir Wilderness is the most heavily used in the nation.

The Inyo ranks first in coldwater fishing and second in overall angling recreation among the National Forests in California. Developed-site campground use leads the nation. Summer dispersed camping, mule deer hunting, and four-wheel drive recreation are also popular.

SOCIAL AND ECONOMIC ENVIRONMENT

SPHERE OF ECONOMIC INFLUENCE

The Inyo National Forest contains 2,046,346 acres. 1,931,115 are in National Forest System ownership. These lands are located in seven counties. Five counties are in California, two in Nevada.

The primary zone of economic influence for the Inyo National Forest is in California's Inyo and Mono Counties. Nearly 85 percent of the Forest lies within those counties, and more than 95 percent of the Forest lies within the State of California. Ninety percent of Inyo County, the second largest county in the state, and more than 75 percent of Mono County are administered by the federal government. Currently, all timber harvesting conducted by the Inyo National Forest and more than 90 percent of recreational activity take place in these two counties. Recreational activities on the Forest are closely linked to the tourist economy of these counties.

In contrast, the Forest has a relatively limited economic impact on the California counties of Tulare, Madera, and Fresno and on the Nevada counties of Mineral and Esmeralda. This economic situation is not expected to change in the foreseeable future.

Residents of Southern California, primarily those from San Diego, Los Angeles, Orange, Ventura, Riverside, and San Bernardino Counties, make heavy use of the Forest's numerous recreational facilities and resources, such as alpine ski areas, campgrounds, and wilderness. The demand for recreational opportunities by Southern Californians has an economic impact on the Forest and on many of the communities near the Forest. The impact of the Inyo National Forest on Southern California is, however, negligible.

POPULATION

Population growth in Inyo and Mono Counties during the past two decades has been substantial. Mono County grew by more than 113 percent between 1970 and 1980. This ranked the county second among the fastest growing counties in the state. This rapid growth rate can be attributed to the recreational importance of the Mammoth Lakes area.

During the same decade, the Inyo County population grew 15 percent, lower than the state average of 18 percent. Most of this growth took place in and around the community of Bishop, which serves as a service center for the two-county area. Major employers in the area are local, state, and federal governments.

EMPLOYMENT

The economy of the area reflects the importance of recreation, tourism, and the public sector. The three employment categories of services, retail sales, and government together accounted for nearly three quarters of the total wages and salary for workers in 1980. The employment base has grown by nearly 75 percent in the past decade. The services and retail sales categories have enjoyed healthy employment gains, while government employment levels have tapered off and recently recorded some declines.

The high unemployment rates commonly found in tourist-oriented economies are found in the Inyo-Mono area. Rapid population growth, a broadening of the work force, the lack of diversification in the rural economy, and the seasonal nature of the tourist industry have resulted in unemployment rates generally higher than the state average.

ROLE OF THE INYO NATIONAL FOREST

The Forest makes a direct contribution to the area economy through expenditures in the private sector, the generation of jobs, recreational opportunities, and payments into county revenues. Forest expenditures for payroll and procurements in Fiscal Year 1982 were $8.55 million.

Payments into county revenues are from two sources: Payment in Lieu of Taxes and Receipts Act payments. Payment in Lieu of Taxes payments compensate counties for the loss of property tax revenues represented by nontaxable federal land within the county. In 1980, the total Payment in Lieu of Taxes payment to counties by the Inyo National Forest was $165,180.

Receipts Act payments are based on fees collected for use of Forest lands and resources. Twenty-five percent of dollars received by the federal treasury from such activities as timber sales, special use permits, and campground fees are distributed through the Forest Service to the counties to offset school and road costs. Total Inyo National Forest Receipts Act payments for Fiscal Year 1980 amounted to $385,003.

The Forest also provides indirect economic benefits to the public by supplying certain goods and services at prices below established or estimated

market values. Examples include outdoor recreation opportunities and Forest lands for the use of commercial enterprises such as livestock production, apiaries, mineral and energy exploration and development, and water production.

FUTURE TRENDS

Economic growth in the area is expected to continue much as it did in the 1970s, increasing overall. As economic growth continues, the resident population and the pressure for more services will increase. An increased local population could stabilize the fluctuating tourism economy of the 1970s. However, unless the different communities actively seek economic diversity by attracting manufacturing industries to the area, little change is foreseen.

The economic foundation of the area will remain closely tied to increased recreation use and tourism. An increased demand for all Forest resources and services, especially those related to recreation, can be expected. The greatest impacts on Forest management are likely to be found in the areas of landownership adjustments and land uses, scenic quality, and the Forest's role in providing a variety of recreational opportunities. The demand for energy production and water yield are also likely to increase with increases in population, both locally and elsewhere in California.

ECONOMICS IN FOREST PLANNING

National Forest land is public land, and its value accrues to the public. The value of Forest land and resources is of two kinds; products with economic value and those that do not lend themselves to economic quantification, such as the conservation and enjoyment of our natural heritage. The need to manage Forest lands and resources in a way that will provide the greatest net public benefit, taking both kinds of values into consideration, is both a public issue and management concern.

Economic efficiency analysis determines the effects of different management strategies on the economic values of Forest resources, using the measure of Present Net Value (PNV). The benefit components of PNV are the commodity values of recreation (including wildlife and fish-related recreation), water, energy, timber, fuelwood, and grazing. The cost components of PNV include such factors as Forest management expenditures, resource losses, and the opportunity costs of producing non-priced benefits. PNV plus all non-priced benefits represent net public benefit.

SPHERE OF SOCIAL INFLUENCE

Inyo and Mono Counties comprise the primary zone of social influence for the Forest. The lifestyles, quality of life, and social values of the individuals in this area are to varying degrees dependent upon Forest resources and facilities.

The median age for the two-county area is about 34.5 years, well above the 30.8-year median age for the state. This fact is due, in part, to the area's recreational opportunities which attract retiring senior citizens. Personal income averages about $14,300. The area is over 90 percent White (of which 5.6 percent is of Hispanic background), and 7.3 percent American Indian, with Black, Asian, and other races together making up less than 2 percent of the total population of the area.

Paramount to the quality of life is the sense of open space, rugged terrain, scenic qualities, clean air and water, and the abundant recreational opportunities which the Forest provides. The natural resource attributes of the area are coupled with the social attributes of low population density, slow growth, simple lifestyles, small communities, limited services, and a prevailing feeling of self-sufficiency and individualism.

As the primary zone of Forest influence, the Inyo-Mono area is expected to receive direct, identifiable, and measurable benefits and impacts from the Forest's management and policies. The two counties have important ties to the Forest through landownership patterns, land uses, energy production, grazing, fuelwood supplies, fire protection, timber production, and recreational opportunities.

Southern California is a secondary zone of social influence for the Forest. Southern California's demand for recreation affects the Forest and many of the communities in the primary zone of influence. The social impact of the Forest on Southern California may be important but is lost in that area's large size, huge metropolitan population, and broadly diverse social structure.

SOCIAL GROUPS

Management direction and resource outputs of the Inyo National Forest affect several local social groups, each of which places different demands and values on Forest resources. Six major social groups have been identified within the primary zone of influence. Those groups are: long-time residents, regional recreationists, seasonal employees, special use permittees, American Indians, and retirees.

Long-time Residents. Long-time residents are a diverse group of people identified primarily as having lived in the area for ten years or longer. This large group is found working in every sector of the local economy including mining, retail sales, ranching, logging, recreation, and services.

Regional Recreationists. Regional recreationists are attracted to the area to enjoy a recreation- oriented lifestyle. This group includes second-home owners and those who enjoy the area for summer vacations and weekend winter skiing. The latter group is particularly important to the economy of the area.

Seasonal Employees. Seasonal employees who reside in the area are typically young individuals with a primary goal of pursuing an outdoor lifestyle. Earning a living is often a secondary goal. If they are not able to obtain

full-time employment, they are dependent upon the large seasonal employment market in the area.

Special Use Permittees. There are currently 972 special use permits on the Inyo National Forest, governing lands uses on 34,960 acres of Forest land. Special use permits are issued for a variety of purposes, including agricultural, industrial, recreational, research, transportation, and water uses. Special use permittees are especially important to communities such as Mammoth and June Lake, both of which have alpine ski areas on Forest land under special use permit. In 1980, the 546 recreation special use permits contributed more than $1.29 million to the federal treasury, 25 percent of which was returned to local county governments. The Forest ranks first in the nation in revenues received from recreation special use permits.

American Indians. Nearly 2,000 Paiute-Shoshone Indians live on reservations in the Big Pine, Lone Pine, and Bishop areas of Inyo County. The Indian way of life, beliefs, and values are interwoven with nature, the environment, and the mountains of the area. Many Indian religious sites, spiritual areas, and traditional food-gathering areas are located on National Forest land.

Retirees. Senior citizens, a segment of the population whose numbers are increasing, are attracted to the area because of its recreational opportunities, relaxed pace of life, and rural environment. Many retirees come to the area from Southern California.

RESOURCE ENVIRONMENT

AIR QUALITY

Air quality on Inyo National Forest lands meets or exceeds state air basin objectives more than 99 percent of the time.

CULTURAL RESOURCES

Current research indicates that eastern California and western Nevada have been occupied for at least the past 10,000 years. The density of cultural sites on the Inyo National Forest averages 1 per 59 acres (contrasted with 1 per 105 acres on the Angeles National Forest and 1 per 245 acres on the Tahoe). It is estimated that the Forest contains 35,000 or more sites.

DIVERSITY

Vegetative diversity on the Inyo National Forest has been changed from natural levels primarily through water diversion, affecting the extent of riparian areas; past overgrazing, affecting the condition of riparian areas and wet meadows; fire suppression, reducing the seral stage diversity of brush and allowing woody vegetation to encroach on meadows by preventing natural fire-caused rejuvenation; and commercial timber management, reducing the extent of older seral stages of coniferous forests.

ENERGY

Hydroelectric. The Inyo National Forest has a significant potential small hydroelectric resource, including the two major components of perennial water flow and rapid change in elevation. Six small hydroelectric projects are currently operating and fifteen additional applications have been submitted for fifteen streams on the Forest. Major hydroelectric projects affect four streams on the Forest.

Wind Power. The suitability of Inyo National Forest land for wind power is not well known. Preliminary studies indicate, however, that wind patterns on the Inyo may not be suitable for power generation.

FACILITIES

The Forest has eighty-six buildings at seven administrative locations. Of these, all but one are federally owned (the Forest Supervisor's office in Bishop is leased from a private party). There are eighteen dams on Forest land: three are owned by the Forest Service; fifteen by utility companies. Although one of the proposed small hydroelectric projects could include a small dam, most will divert water rather than impounding it. No new sites for major dams have been identified on the Forest.

There is one major mass transit system on the Forest; several smaller ones; and thirteen roads that have been designated as Forest Highways. The Forest has 32 miles of arterial roads, 201 miles of collector roads, 741 miles of local roads, and an estimated 300 miles of uninventoried roads. These roads are used primarily for public recreation access, administration, fire protection, and commercial timber transport.

FISH

Inyo National Forest fish habitat includes about 1,100 miles of stream and several hundred lakes. Habitat condition in most streams is rated medium to high. Lake fish habitat quality is generally high. More than 90 percent of resident fish on the Forest are found in lakes.

Waters on National Forest land contain rainbow trout, brook trout, brown trout, Colorado cutthroat trout, Lahontan cutthroat trout, Paiute cutthroat trout, golden trout, western sucker, and Owens sucker. The golden trout, western and Owens suckers and rainbow trout in the Kern River are the only native species known to reside on the Forest. Reproducing brown, brook, and rainbow trout are common.

FURTHER PLANNING AREAS

The Inyo National Forest has 1,008,282 acres of land that were inventoried as roadless by the Roadless Area Review and Evaluation (RARE II) study. Of those acres, 46,146 acres were designated wilderness by the California Wilderness Act; 338,319 acres made available by that Act for non-wilderness

management; and 576,517 acres remained in the Further Planning category. In addition we have 47,300 acres of inventoried roadless areas in Nevada.

Most Further Planning Areas on the Forest are substantially lower in user capacity and recreational attractions than existing wilderness. A few Further Planning Areas contain unique or outstanding geological or ecological features.

GEOLOGY

Slope instability processes (including those triggered by earthquakes) are the most important geologic events on the Forest in terms of risk, primarily because of their relative frequency. Volcanic events are the least important due to their low frequency, despite the size of their potential impacts.

The extent and quality of groundwater on the Forest are not known. Small-scale wells have been developed to serve campgrounds, administrative sites, fire suppression units, and livestock and wildlife needs. Those uses currently total 43 acre-feet. Additional groundwater, amounting to 300 acre-feet, is used to supply Mammoth Mountain Ski Area. There is no current community use of groundwater from on-Forest sources.

LANDS

There are approximately 1,181 miles of property lines on the Forest, of which thirty-one have been surveyed and posted to standard. The Forest currently resolves an average of five occupancy trespass cases per year. Approximately 1,911 miles of utility, transportation, and water transmission lines lines cross the Forest under special use permit. However, no utility corridors have been designated to date.

Withdrawals on the Inyo National Forest total 757,516 acres, representing actions initiated by the Forest Service, by Congress, or by other federal agencies. 565,142 of these acres are in wilderness. The Forest Service is currently reviewing the withdrawals it has initiated. If the needed objectives can be met by a less restrictive management option than withdrawal, some withdrawals may be modified or revoked.

The Inyo National Forest boundary includes 2,046,346 acres, of which 116,591 are in non-federal ownership. In Inyo and Mono Counties, which contain most of the Forest land, only seven percent of land within the Forest boundary is in other ownership (more than half of that belongs to the state of California or the City of Los Angeles and lies within the recently legislated Mono Basin National Forest Scenic Area).

There are currently 977 non-recreational special use permits covering 34,960 acres and 1,911 miles.

MINERALS

Leasable (Geothermal Energy). Geothermal energy is a resource found on the Inyo National Forest. Approximately 260,000 acres of the 460,000 acre Mono-Long Valley Known Geothermal Resource Area are on National Forest land. Approximately 38,900 acres are currently under lease by six separate entities.

Locatable. The Inyo National Forest has a long, active history of mining. The Bureau of Mines lists twenty commodities in 513 mineral prospects on the Forest. More than 3,000 mining, mill site, and tunnel site claims are recorded for Forest lands, but only eleven are currently in production on the Forest. The most significant of these are the Umetco Pine Creek Mine in Pine Creek and the U.S. Pumice mine in the Mono Craters. The latter produces more than 10,000 tons of block pumice each year.

A mineral potential rating of "high" has been applied to 133,860 non-wilderness acres on the Forest, and a rating of "medium" has been applied to 209,021 acres. The remaining 1,021,732 acres have been rated "low". The largest acreage in the high and medium categories is located in the Inyo Mountains and the lower elevations of the White Mountains.

Materials. Of the fifty material sources inventoried in the area, twenty-eight are on National Forest lands.

MONO BASIN NATIONAL FOREST SCENIC AREA

The Mono Basin National Forest Scenic Area encompasses 116,000 acres, of which 45,832 are National Forest land. The remaining acres include the lake surface itself and relicted lands (lakeshore created by the lowering of the lake level during forty years of water diversion) owned by the state, and additional City of Los Angeles and privately-owned lands.

PEST MANAGEMENT

Pest proliferation on the Forest is not a serious concern. Pest problems are typically localized and fall within acceptable levels.

PROTECTION (FIRE MANAGEMENT)

From 1972 to 1982, the Inyo National Forest had 491 man-caused fires, (burning a total of 5,616 acres) and 715 lightning-caused fires (burning 2,496 acres). The Inyo is typical of many Forests in California, having many small fires and an occasional large, damaging fire.

The risk of wildland fire ignition on the Inyo is rising due to increasing development of intermingled and neighboring private lands. This growth is especially significant around June Lake, Mammoth Lakes, and Crowley Lake.

Prescribed fire has been used on the Inyo National Forest for the past several years, primarily for timber site preparation. There are additional

opportunities for prescribed burning to benefit wildlife habitat and domestic livestock range. Prescribed fire has not been used to reduce fuels for fire management purposes because fuels accumulation is not a serious problem on the Inyo.

RANGE

The current grazing program supplies 41,400 Animal Unit Months per year of forage for domestic livestock and wild horses and burros, and an unknown amount for wildlife.

The White Mountain Wild Horse Territory (70 horses) and the Saline Valley and Lee Flat Burro Territory (112 burros) populations are within established management levels. The Montgomery Pass Wild Horse Territory has more animals than the range can support in the long term.

RECREATION

Developed. The Inyo National Forest supplied 1,848,500 Recreation Visitor Days (RVDs) of developed recreation use in 1982. The current capacity of non-alpine developed sites is 25,479 Persons At One Time (PAOT). About 98 percent of recreational developments lie in concentrated recreation areas. These areas cover 47,529 acres (two percent of the Forest land base).

Alpine Skiing. The Inyo National Forest has two alpine ski areas--Mammoth Mountain and June Mountain--with a combined capacity of 22,000 Skiers At One Time (SAOT). They provided 1.6 million skier visits during the 1981-82 season. The approved development plan for Mammoth Mountain and the June Mountain development plan, if implemented, would increase their capacity to approximately 29,000 to 31,000 SAOT.

Dispersed. Dispersed recreation in 1982 amounted to a total of 1,909,200 Recreation Visitor Days (RVDs). Of this total, 540,000 RVDs represented wilderness use; 340,000 represented fishing, 25,200 represented deer hunting; and 25,800 represented other wildlife-related recreation. The remaining 1,004,000 RVDs represented such activities as driving for pleasure, hiking, riding, dispersed camping, and boating.

Recreation Opportunity Spectrum. The Recreation Opportunity Spectrum classifies the Forest in terms of the types of recreational opportunities that would be appropriate in each class. The acreage classifications on the Forest are: Primitive (870,600 acres); Semi-Primitive Non-Motorized (392,600); Semi-Primitive Motorized (189,200); Roaded Natural (383,600); Roaded Modified (35,100); Rural (11,600); and Urban (2,000).

RESEARCH NATURAL AREAS

The Inyo National Forest has five established and two candidate Research Natural Areas. Existing Research Natural Areas meet established targets for Jeffrey pine (Indiana Summit), lodgepole pine (Sentinel Meadow), foxtail pine (Last Chance Meadow), bristlecone pine (White Mountain), and unique

ecosystems (Harvey Monroe Hall). Candidate Research Natural Areas meet the target for pinyon pine (Whippoorwill Flat) and alpine fellfields (McAfee Meadow). The target for limber pine is met by stands in the Sentinel and Whippoorwill areas.

RIPARIAN AREAS

There are approximately 37,000 acres of riparian vegetation (including wet meadows) on the Forest. That figure represents less than two percent of the total land base.

SENSITIVE PLANTS

There are twenty-two sensitive plant species on the Forest. Eight of these species are endemic to Inyo National Forest lands. Although none of the twenty-two species is federally listed as threatened or endangered, two species are proposed for federal listing and eight others are categorized by the U.S. Fish and Wildlife Service as needing further study. Although the condition of sensitive plant habitat varies by species and population, it is generally fair to excellent Forest-wide.

SPECIAL INTEREST AREAS

The Ancient Bristlecone Pine Forest encompasses 28,887 acres in the White Mountains. The primary attraction of the area is a stand of exceptionally old bristlecone pine trees, including the world's oldest known living tree. The Botanical Area is internationally known and has been the site of significant dendrochronological (tree-ring dating) research.

The following candidate geological interest areas were selected from a list of sixty interesting geologic features on or near the Forest: the Papoose Flat granitic intrusion; granitic domes in the Buttermilk area and Egypt Creek; Hot Creek; Starkweather Lake glacial polish; Tioga Tarns; the Inyo Craters area (including Inyo Craters, Deadman glass flow, Obsidian Dome, and Devils Punchbowl); Earthquake Fault; and Convict Lake/lower Convict Creek, including the moraines.

TIMBER

The current timber harvest on the Forest is approximately 10.5 MMBF per year. The demand for sawtimber for the Forest cannot be predicted from historical sales trends. Since all the timber offered for sale on the Forest during the past decade has been sold, it can be assumed that supply has not exceeded demand. In addition, there is relatively little uncut volume under contract (less than two years sell volume), and no sales have been turned back. Recently, bid prices for timber have been three to four times greater than advertised rates. Sawmills in both Nevada and California depend upon logs from the Inyo National Forest. There are, however, no local sawmills or communities that rely on Forest timber outputs for economic stability.

Local communities are almost entirely dependent on the Forest as a source of commercial and personal-use fuelwood. The Inyo currently sells approximately 4,000 cords of fuelwood per year to commercial operators and 6,000 cords per year to the public.

VISUAL RESOURCES

The Inyo National Forest has an extraordinary visual resource. Forty-four percent of the Forest falls in the "distinctive" variety class and 76 percent falls in the highest sensitivity level (how many people see it, what is seen and how close it is).

Visual Quality Objectives (VQOs) describe the degree to which the natural landscape can acceptably be modified, based on a combination of variety class and sensitivity level. The VQO of Preservation (no modification) applies to all Wildernesses and Research Natural Areas, or 31 percent of the Forest. The Retention VQO (modifications must not be visually evident) applies to 17 percent. Partial Retention (modifications must be visually subordinate to the natural landscape) applies to 34 percent.

Seventy-six percent of the natural landscape of the forest is rated as "untouched". Sixteen percent of the Forest has a high capacity to screen disturbances from view and 39 percent has a moderate capacity. This does not include wilderness. The current visual condition of the Forest is extremely high.

WATERSHED

Soils. Most soils on the Forest are coarse-textured. The most common parent material is granitic; the second-most common is pumiceous. Most are in optimal or near-optimal condition. These soils typically suffer little or no accelerated erosion, are stable, and each soil type is producing vegetation at its optimal level. However, wet meadows grazed by livestock and alpine ski areas are especially susceptible to soil erosion, due to both soil characteristics and to the management activities that occur there.

Water. Water quality on the Inyo is good overall. Established water basin objectives are met by more than 97 percent of the water coming off the Forest. As bacterial, nutrient, and chemical problems are small and localized, the main threat to clean water is sedimentation. The major existing sources of sediment are eroded wet meadows (damaged by poor range management in the past) and alpine ski areas.

The Forest holds adequate water rights to meet its current and foreseeable consumptive needs. Water flowing off the Forest amounts to an average of 1,093,000 acre-feet per year.

WILD AND SCENIC RIVERS

The Inyo has one candidate wild and scenic river: the Middle Fork of the San Joaquin. The South Fork of the Kern and the North Fork of the Kern have recently been designated as Wild and Scenic Rivers by Congress.

WILDERNESS

The Inyo National Forest has 565,142 acres of designated wilderness; approximately 30 percent of the Forest land base. The Plan recommends that 172,600 additional acres be added to the wilderness system. Wilderness recreation on the Forest amounted to 540,000 RVDs in 1982. There are 584.6 miles of wilderness trail currently maintained to Class I standards and 29 trailheads with a capacity of 2,212 PAOTs.

WILDLIFE

Management Indicator Species on the Forest, by category, are:

Harvest	Mule deer, Blue grouse, Sage grouse.
Endangered	Bald eagle, Peregrine falcon.
Sensitive	Goshawk, Sierra Nevada red fox, Goshawk, Pine marten, Spotted owl, Great gray owl, Sierra Nevada mountain sheep, Wolverine.
Special interest	Golden eagle, Tule elk, Prairie falcon, Nelson mountain sheep.
Dependent on riparian area	Yellow warbler.
Dependent on snags	Hairy woodpecker, Williamson sapsucker.
Dependent on early-middle seral stages of brush	Sage grouse.
Dependent on older seral stage of coniferous forest	Goshawk.

Mule deer: The current population of mule deer that relies on the Forest for summer range, winter range, and/or migratory access is estimated at 20,200 animals. Those deer that summer and/or winter on Forest lands are estimated at 12,000 with a maximum potential population estimated at 16,000. Although the deer population has remained fairly constant over the past ten years, declines are perceptible over the past twenty to thirty years.

Deer rely most heavily on Forest lands for winter range. Most spend the summer at higher elevations and many of the northern herds summer west of the Forest boundary. The Inyo has 112,119 acres of key deer winter range, most of it between 4,500 and 6,000 feet elevation on the east slope of the Sierra Nevada.

Bald eagle: The Inyo has a small amount of bald eagle wintering habitat. Approximately 20 to 30 birds winter on or near National Forest land. Current information does not indicate whether the number is increasing or decreasing.

Peregrine falcon: Although peregrine falcons existed on the Forest in earlier times, the nearest active nesting pairs are now found in Yosemite Valley and

Hetch Hetchy Canyon. Eight fledglings were reintroduced on the Forest in 1983 and 1984. There is potential nesting habitat for four nesting pairs.

Goshawk: Goshawk surveys have located approximately twenty-five active nest sites on the Forest, fifteen of these in suitable timber. Most surveys have been conducted in areas managed for timber. It is estimated that an additional twenty-five pairs have nest sites in wilderness or non-commercial timber areas. There is insufficient data to determine whether the goshawk population on the Forest is changing.

Blue grouse: Blue grouse is a harvest species found at higher elevations on the Forest, in steep and inaccessible terrain. There is no estimate of the blue grouse population, trend, or potential on the Forest. There are no apparent conflicts between the needs of this species and the management of other resources. Most blue grouse habitat is in wilderness.

Sage grouse: The population of sage grouse on the Forest is declining. The reason for this decline is not known. The current population of birds is estimated at 500 individuals, located primarily in the Lake Crowley basin and the northern White Mountains. The maximum habitat capacity of the Forest for sage grouse is estimated at 1,500 birds.

Spotted owl and Great gray owl: There is little data on the occurrence of these species on the Forest.

Although two spotted owl sightings have been documented on the Forest, there have been no documentations of nest territories.

Great gray owl sightings on the Forest have not been verified. There are few potential conflicts between the habitat needs of that species and other resource management because most of the suitable habitat is in wilderness.

Nelson (desert) mountain sheep: Nelson mountain sheep are found in both the White and Inyo Mountains. It is estimated that there are approximately one hundred sheep in the White Mountains, and the population appears to be increasing. Little is known about the Inyo herd, but the population has been estimated at thirty.

Sierra Nevada mountain sheep: Virtually all of the Sierra Nevada mountain sheep in California are found on the Inyo National Forest. There are five populations on the Forest. Two populations represent natural distributions; the remaining three have been reintroduced into historic range. There is additional potential for reintroduction, as the Baxter herd is healthy and growing, and there is still suitable unoccupied habitat on the Forest. The total existing population includes approximately three hundred animals. If all identified suitable habitat on the Forest were occupied, it could support as many as one thousand animals.

Riparian area-dependent species: Riparian vegetation covers approximately two percent of the Inyo National Forest; the remaining lands are, for the most part, arid and sparsely vegetated. The population and trend of riparian-area dependent wildlife species has not been studied. The amount and condition of riparian habitat is vulnerable to the impacts of ground disturbance, vegetation manipulation, and/or streamflow reduction.

Snag-dependent species: Snag densities on the Inyo are low, due both to the slow rate of natural snag recruitment and the amount of illegal public snag cutting for fuelwood. Snag-dependent species are dependent on both standing dead trees (snags) and down and dead logs. Dead and down wood is legally available to woodcutters and declines rapidly wherever it is accessible by vehicle.

Approximately 20 percent of historic stream habitat in the Mono and Owens Basins has been eliminated by water removal, irrigation, and recreational activities. Eighty-eight percent of all existing streams have been diverted to some extent.

Species dependent on early-middle seral stages of brush: See sage grouse.

Species dependent on older seral stages of coniferous forest: See goshawk.

IV. ENVIRONMENTAL CONSEQUENCES

This chapter describes the environmental consequences of implementing the various altenatives. None of these consequences is severe because the only alternatives considered were those that will maintain the long-term productivity of the land and be acceptable to the public. Minimum Management Requirements and Forest-wide Standards and Guidelines common to all alternatives ensure that the minimum acceptable and implementable levels of management for the various Forest resources are inherent in all alternatives.

Environmental consequences are described in terms of changes from the Base Year 1982 situation unless otherwise indicated. Although this planning period covers only ten to fifteen years, the analysis of environmental consequences is projected over fifty years to assess the long-term implications of the various alternatives. This information is for comparison purposes only, as natural resource and social conditions are extremely difficult to predict over time.

Key environmental consequences are displayed comparatively in the following tables. Only those resources for which consequences differed substantially between alternatives are summarized here. The consequences for all resources are displayed in Chapter IV.

Table 1

Comparison of Key Environmental Consequences

RESOURCE	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
ECONOMIC ENVIRONMENT	The economic environment varies by alternative in terms of the Forest budget, area employment, and Receipts Act Payments Average annual figures for budget and Receipts Act payments for the fifth decade are displayed below, employment figures are projected for the first decade.					
	Forest Budget 12 5 million	Forest Budget 10 0 million	Forest Budget 20 6 million	Forest budget 17 1 million	Forest budget 13 1 million	Forest budget 15 1 million
	Receipts Act pmts $1 8 MM	Receipts Act pmts $1 1 MM	Receipts Act pmts $3 3 MM	Receipts Act pmts $2 1 MM	Receipts Act pmts $1 4 MM	Receipts Act pmts $1 7 MM
	Employment 1,300 person-years	Employment 1,100 person-years	Employment 1,400 person-years	Employment 1,500 person years	Employment 1,100 person-years	Employment 1,100 person-years
SOCIAL ENVIRONMENT	Generally benefits all affected social groups	Benefits groups linked with economic outputs, reduces the facility-related benefits to recreationists	Benefits groups linked with economic outputs, reduces amenity benefits to recreationists	Benefits all recreationists	Benefits preservationists and wilderness advocates	Benefits most of the affected groups in the short term, negatively affects groups linked with economic outputs in the long run
CULTURAL RESOURCES	A rating system has been designed to indicate the relative potential threat to cultural resources posed by different combinations of land-disturbing management activities and land allocation decisions Cumulative relative threat factors, representing the net effect of direct disturbance, indirect disturbance, and beneficial impacts are displayed below					
	Relative threat factor moderate	Relative threat factor low	Relative threat factor high	Relative threat factor moderate	Relative threat factor low	Relative threat factor low

Table 1 (continued)
Comparison of Key Environmental Consequences

RESOURCE	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
FISH	Fish habitat capability changes by alternative in response to the relative amounts of stream habitat improvement and watershed improvement The total acres of stream fish habitat improved (both by direct habitat improvement and induced by watershed improvement) and percent change in Forest-wide stream habitat capability, relative to 1982, by the end of the fifth decade are shown below Lake habitat capability is common to all alternatives					
	Stream acres Improved 470	Stream acres Improved 205	Stream acres Improved 417	Stream acres Improved 621	Stream acres Improved 561	Stream acres Improved 583
	Hab capability change from 1982· +32%	Hab capability change from 1982 +15	Hab capability change from 1982 +31%	Hab capability change from 1982 +44%	Hab capability change from 1982 +36%	Hab capability change from 1982 +39%
FURTHER PLANNING AREAS	The consequences of alternatives on further planning areas differ in terms of the management prescriptions (Rx) applied to those areas Management prescriptions have been grouped for this analysis into wilderness Rx, amenity-emphasis Rx, commodity-emphasis Rx, and concentrated recreation use Rx No further planning acreage on the Forest was allocated to concentrated recreation use Rxs under any alternative					
	Percent of total further planning acres by Rx type	Percent of total further planning acres by Rx type	Percent of total further planning acres by Rx type	Percent of total further planning acres by Rx type	Percent of total further planning acres by Rx type	Percent of total further planning acres by Rx type
	28% wilderness	17% wilderness	0 wilderness	54% wilderness	82% wilderness	36% wilderness
	52% amenity	37% amenity	15% amenity	5% amenity	8% amenity	61% amenity
	20% commodity	46% commodity	85% commodity	41% commodity	0 commodity	3% commodity
MINERALS	The consequences of alternatives on opportunities for mineral exploration and development are determined by the acres of Forest land with high or moderate mineral potential available for mineral activities The majority of lands withdrawn from mineral entry under the alternatives are in recommended wilderness					

Table 1 (continued)
Comparison of Key Environmental Consequences

RESOURCE	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
	Acres of hi/mod mineral potential available for mineral activity 282,800	Acres of hi/mod mineral potential available for mineral activity 284,200	Acres of hi/mod mineral potential available for mineral activity· 314,400	Acres of hi/mod mineral potential available for mineral activity 214,600	Acres of hi/mod. mineral potential available for mineral activity. 135,500	Acres of hi/mod mineral potential available for mineral activity. 237,400
	Mineral opportunity high	Mineral opportunity high	Mineral opportunity highest	Mineral opportunity moderate	Mineral opportunity low	Mineral opportunity moderate
PROTECTION	The consequences of the alternatives on fire management are expressed in terms of wildfire acres burned That acreage is a function of the selected fire organization, suppression strategies used, and the risk of fire starts represented by the amount of recreation on the Forest The total estimated acreage burned by wildfire by the end of the fifth decade is displayed below					
	Total wildfire acres 53,190	Total wildfire acres 52,870	Total wildfire acres 53,190	Total wildfire acres 64,520	Total wildfire acres. 48,150	Total wildfire acres. 51,390
RANGE	The consequences of alternatives on the domestic livestock grazing program are measure in terms of fifth decade grazing outputs, percent change relative to 1982, and range condition and trend.					
	41 4 M AUMs total outputs	39 1 M AUMs total outputs	55 6 M AUMs total outputs	46 5 M AUMs total outputs	35 1 M AUMs total outputs	39 4 M AUMs total outputs
	No increase from 1982	6% reduction from 1982	34% increase from 1982	12% reduction from 1982	15% reduction from 1982	5% reduction from 1982
	Range condition improved on 69 1 M acres stable to declining elsewhere	Range condition in gradual decline	Range condition improved on 95 6 M acres stable to declining elsewhere	Range condition improved on 98 5 M acres, stable to declining elsewhere	Range condition improved on 66 6 M acres stable to declining elsewhere	Range condition improved on 73 8 M acres, stable to declining elsewhere

Table 1 (continued)
Comparison of Key Environmental Consequences

RESOURCE	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
RECREATION	The consequences of alternatives on recreation are measured in terms of the amount of use, the quality of the recreational experience, and the relative emphasis on different types of recreation The following is an overview of recreational quality and relative emphasis					
	Developed site quality high	Developed site quality low	Developed site quality high	Developed site quality high	Developed site quality high	Developed site quality high
	Dispersed recreation quality moderate	Dispersed recreation quality low	Dispersed recreaction quality moderate	Dispersed recreation quality moderate	Dispersed recreation quality high	Dispersed recreation quality high moderate
	Emphasis on developed sites high, on alpine skiing moderate, on wilderness moderate, on dispersed recreation moderate	Emphasis on developed sites low, on alpine skiing moderate, on wilderness moderate, on dispersed recreation high	Emphasis on developed sites high, on alpine skiing moderate, on wilderness low, on dispersed recreation high	Emphasis on developed sites high, on alpine skiing high, on wilderness high moderate, on dispersed recreation moderate	Emphasis on developed sites low, on alpine skiing low, on wilderness high, on dispersed recreation low	Emphasis on developed sites mod , on alpine skiing moderate, on wilderness high moderate, on dispersed recreation moderate
TIMBER	The consequences of alternatives on the timber management program vary in terms of total acres managed for timber production and acres actually harvested within a given time period (including both regeneration harvest and intermediate harvest) The following harvest figures are totals for the fifth decade					
	Total timber production 75,233 acres	Total timber production 89,100 acres	Total timber production 99,200 acres	Total timber Production 97,600 acres	Total timber production 61,800 acres	Total timber production 69,900 acres
	Clearcut harvest 3,617 acres	Regeneration harvest 8,570 acres	Regeneration harvest 14,100 acres	Regeneration harvest 5,580 acres	Uneven-aged mgmt harvest 3,320 acres	Regeneration harvest 4,210 acres

Table 1 (continued)
Comparison of Key Environmental Consequences

RESOURCE	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
	Intermediate harvest 20,052 acres	Intermediate harvest 29,100 acres	Intermediate harvest 18,600 acres	Intermediate harvest 19,500 acres	Intermediate harvest 17,600 acres	Intermediate harvest 21,600 acres
	Uneven-aged mgmt harvest 8,678 acres					
VISUAL RESOURCES	The consequences of alternatives on visual resources are measured in terms of change in visual condition, the following figures indicate what percent of the total Forest lands would have improvements and reductions in visual condition by the fifth decade, net change in visual condition is also displayed					
	Improved visual condition 3 3%	Improved visual condition 2 4%	Improved visual condition 0 3%	Improved visual condition 2 0%	Improved visual condition 6 9%	Improved visual condition 4 7%
	Reduced visual condition 0 9%	Reduced visual condition 1 2%	Reduced visual condition 2 1%	Reduced visual condition 1 8%	Reduced visual condition 0 6%	Reduced visual condition 0 8%
	Net change in condition +2 2%	Net change in condition +1 2%	Net change in condition -1 8%	Net change in condition +0 2%	Net change in condition +6 3%	Net change in condition +3 9%
WATERSHED	The consequences of alternatives on soil stability and water quality vary by the amount of land disturbed for other resource management and by the amount of watershed restoration scheduled The relative potential for adverse effects on soil and water are shown by alternative below					
	low	moderate	high	moderate	low	low

Table 1 (continued)
Comparison of Key Environmental Consequences

RESOURCE	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
WILDERNESS	The consequences of alternatives on wilderness are measured primarily in terms of acres of new wilderness.					
	172,600 acres new wilderness	107 600 acres new wilderness	0 acres new wilderness	339,800 acres new wilderness	510,800 acres new wilderness	222,700 acres new wilderness
	38 percent of Forest in wilderness	35 percent of Forest in wilderness	30 percent of Forest in wilderness	47 percent of Forest in wilderness	56 percent of Forest in wilderness	41 percent of Forest in wilderness
WILDLIFE	The consequences of alternatives on wildlife are assessed in terms of habitat capability Changes in the following habitat capability factors are displayed below mule deer habitat, older seral stages of coniferous forest (species such as goshawk), early and mid-successional brush (species such as sage grouse), snags and other habitat for cavity-nesting birds (species such as hairy woodpeckers), and habitat for riparian area-dependent species in wet meadows (such as yellow warblers) Changes are expressed in terms of percent increase or decrease relative to 1982					
	Mule deer habitat -2%	Mule deer habitat -4%	Mule deer habitat -47%	Mule deer habitat -14%	Mule deer habitat +20%	Mule deer habitat +18%
	Existing old growth in tentatively suitable timber base -27%	Existing old growth in tentatively suitable timber base -91%	Existing old growth in tentatively suitable timber base -92%	Existing old growth in tentatively suitable timber base -86%	Existing old growth in tentatively suitable timber base -38%	Existing old growth in tentatively suitable timaber base -59%

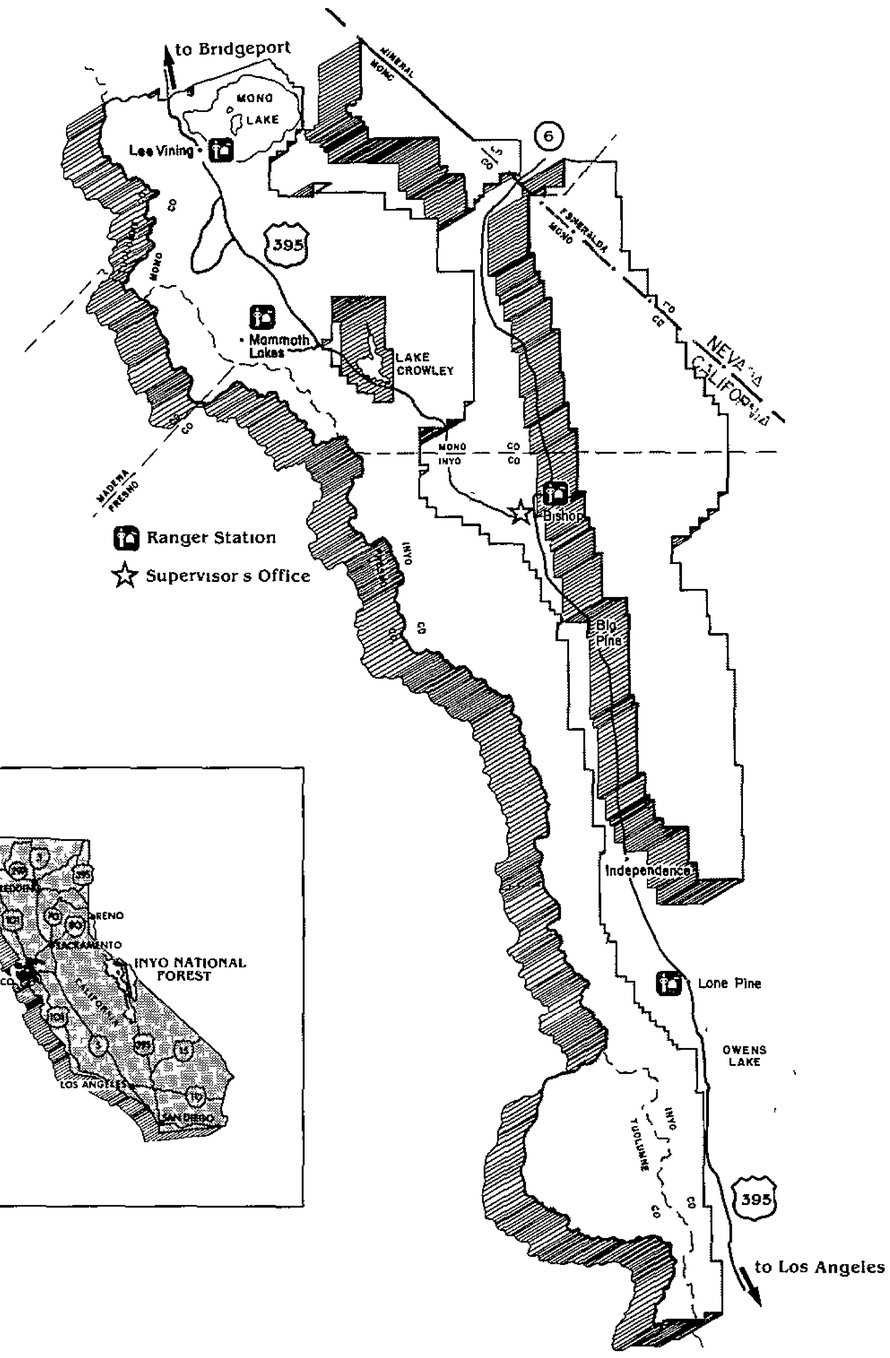
Table 1 (continued)
Comparison of Key Environmental Consequences

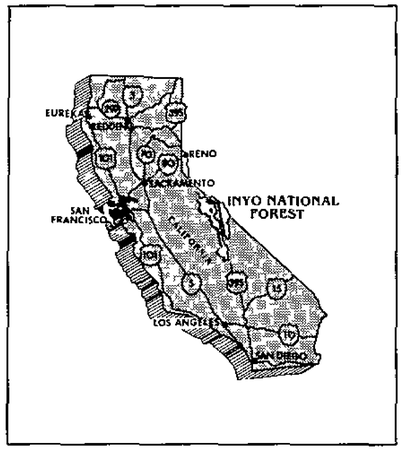
RESOURCE	Alternatives					
	PRP	CUR	RPA	CEE	AMN	AMB
	Early-mid succ brush -69%	Early-mid succ brush -42%	Early-mid succ brush -31%	Early-mid succ brush -24%	Early-mid succ brush -36%	Early-mid succ brush -36%
	Snags 0	Snags 0	Snags 0	Snags 0	Snags +30%	Snags +30%
	Wet meadows 0	Wet meadows -58%	Wet meadows -35%	Wet meadows 0	Wet meadows 0	Wet meadows 0

I

PURPOSE OF AND NEED FOR ACTION

VICINITY MAP
Inyo National Forest





CHAPTER I. PURPOSE OF AND NEED FOR THE ACTION

PROPOSED ACTION

The Inyo National Forest is proposing the implementation of a comprehensive Land and Resource Management Plan (Plan). The Plan will set general direction for the management of all lands and resources administered by the Inyo National Forest for the next ten to fifteen years. This planning process is conducted under the auspices of the Multiple-Use Sustained Yield Act of 1960, the Forest Rangeland Renewable Resource Planning Act (RPA) of 1974 and the National Forest Management Act (NFMA) of 1976.

This Environmental Impact Statement (EIS) documents the environmental analysis conducted as part of the planning process, including the range of management alternatives that were considered, with their associated outputs and environmental impacts.

The analysis focuses on the public issues, management concerns, and resource and development opportunities of the Forest. The need to ensure the multiple use of the Forest, to provide for a sustained yield of goods and services, and to maximize net public benefit in an environmentally sound manner are addressed in this document. Those laws and regulations that provide direction for this planning process are discussed in the following section.

The concept of net public benefit is central to this planning effort. Net public benefit represents the value of all Forest resources and benefits, minus all management costs. It is the intent of this analysis to generate a Preferred Alternative that maximizes net public benefit.

Chapter I of the EIS describes the planning process and identifies the public issues and management concerns that initiate and provide the basis for the analysis. Chapter II describes the range of alternative management strategies considered, including the Preferred Alternative (the proposed Plan). Chapter III describes the Forest environment in terms of social, economic, and natural resource factors. Chapter IV discloses the major environmental consequences projected for the planning alternatives. The Preferred Alternative is developed and described in the Plan, the document that accompanies this Environmental Impact Statement.

BACKGROUND AND DIRECTION

In the mid-1970s Congress acted upon the need for improved planning for the National Forests. Two pieces of legislation were passed: (1) the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), and (2) the National Forest Management Act of 1976 (NFMA), which amended RPA. This legislation requires that comprehensive, long-range plans replace the separate, and often uncoordinated, resource management plans that had traditionally been used on the National Forests. The United States Department of Agriculture developed implementing regulations for RPA and NFMA (36 CFR 219, Subpart A). RPA, NFMA,

and the planning regulations direct the Forest Service to plan for lands and resources at three levels: National, Regional, and Forest.

Planning at the national level produces two major documents: the RPA Assessment and the RPA Program. The Assessment addresses the amount and location of the Nation's renewable natural resources. The Program sets broad direction for the management of those resources for a ten-year period. The program is reviewed and updated as needed every five years.

Planning at the Regional level produces a Regional Guide. This Guide conveys national direction to the National Forests, establishes Region-wide management standards and guidelines, and responds to Regional issues and concerns.

Planning on each National Forest produces a Plan. The Plan assesses the capability of the Forest to produce goods and services, establishes management direction specific to the Forest, and responds to local issues and concerns. Plans are reviewed at least every five years and are updated (amended) as needed. Plans are revised every ten to fifteen years.

The National Environmental Policy Act of 1969 (NEPA) established the need to analyze any major federal action that could significantly affect environmental quality. The Council on Environmental Quality (CEQ), created by NEPA, developed implementing regulations for that Act (40 CFR 1500). As the Forest planning process is a major federal action, NEPA and the CEQ regulations apply. The Plan's Environmental Impact Statement (this document) follows the format specified by 40 CFR 1502.10.

In addition to RPA, NFMA, NEPA, and their implementing regulations, Planning for the Inyo National Forest is directed by the Forest Service Manual (FSM) Chapter 1920 and Region 5 Land Management Planning Direction.

PLANNING PROCESS

Land and resource planning at all three levels within the National Forest System is a systematic, interdisciplinary task. The task is performed by an interdisciplinary (ID) team composed of Forest personnel who represent diverse areas of professional and technical knowledge about natural resources and their management. Chapter V lists the ID team members who conducted this environmental analysis and their qualifications and responsibilities.

The ID team addresses the interrelationships of physical, biological, social, and economic aspects of the environment; considers the effects of managing any combination of resources on all other resources; and weighs resource and dollar costs relative to benefits, goods, services, and uses provided. The Forest planning process is defined by 36 CFR 219.12. Those actions are:

1. Identification of purpose and need.
2. Development of planning criteria.
3. Inventory data and information collection.
4. Analysis of the management situation.
5. Formulation of alternatives.
6. Estimation of the effects of alternatives.

7. Evaluation of the alternatives.
8. Recommendation of a preferred alternative.
9. Plan approval.
10. Monitoring and evaluation.

This EIS and Plan display both the analysis process and the preferred alternative, together with a record of decision from the Regional Forester documenting recommendation and approval of the preferred alternative over other alternatives. Monitoring and evaluation are ongoing processes that follow publication of the record of decision, and continue over the ten- to fifteen-year period before the Plan is revised.

The Plan will be implemented after approval by the Regional Forester. It can be amended at any time. If an amendment is proposed, an environmental analysis will be conducted to determine whether the amendment represents a significant change from the Plan. If the change is significant, an Environmental Impact Statement and formal public involvment is required. If not, the type and amount of public involvement and documentation needed will be determined by the type and degree of change that is proposed.

The Plan will be revised every ten to fifteen years or as needed because of changing conditions. Monitoring and evaluation will be an ongoing process during Plan implementation.

The Regional Forester's decision to approve the Plan and its EIS is subject to the public's rights of administrative appeal. Preliminary process decisions are not subject to appeal. [See 36 CFR 211.18(b)(11)]

RELATIONSHIP WITH PAST AND FUTURE PLANNING

The Plan supersedes all existing plans for individual resources or land units. These existing plans wiill be treated in one of three ways: (1) incorporated into the Plan without revision, (2) incorporated into the Plan with direction to be revised or updated, or (3) replaced by the Plan.

EXISTING PLANS INCORPORATED INTO THE PLAN WITHOUT REVISION:

- Ancient Bristlecone Pine Forest Management Plan (1958)

- Buttermilk Deer Herd Management Plan (California Department of Fish and Game) (1984)

- Environmental Assessment and Operating Plan for Geothermal Exploration in the Long Valley Caldera (Lease Block I) (1980)

- Environmental Assessment and Operating Plan for Union Geothermal Inyo Domes Project (1985)

- Environmental Assessment for Geothermal Leasing in the Monache Meadows Area (1985)

- Erosion Prevention Plan for Mammoth Mountain Ski Area (1983 update)

- Erosion Prevention Plan for June Mountain Ski Area (1982)

- Fishery Management Plan for Lahontan Cutthroat Trout salmo clarkii henshawi in California and Western Nevada Waters (1986)

- Geothermal Leasing Program for the Mono-Long Valley Known Geothermal Resource Area (programmatic Final Environmental Impact Statement) (1973)

- Golden Trout Habitat and Watershed Restoration Plan for the Kern Plateau (1983)

- Goodale Deer Herd Management Plan (California Department of Fish and Game) (1983)

- Hot Creek Wild Trout Management Plan (California Department of Fish and Game and Inyo National Forest) (1986)

- Inyo-White Mountains Deer Herd Management Plan (California Department of Fish and Game) (1985)

- June Lake Loop - A Review of Current Water Uses and Future Needs (1982)

- Lahontan Cutthroat Trout Draft Recovery Plan (U.S. Fish and Wildlife Service) (1985)

- Lahontan Cutthroat Trout Habitat Management Plan (1983)

- Law Enforcement Plan (1985)

- Long Valley Caldera - Mono Crater Contingency Plan (1983)

- Long Valley Caldera - Mono Crater Fire and Air Operation Plan, (Inyo and Toiyabe National Forests) (1983)

- Mammoth County Water District Water Management Plan Environmental Assessment (1977)

- Management Plan for the Casa Diablo Deer Herd (California Department of Fish and Game) (1985)

- Management Plan for the East Walker Deer Herd (California Department of Fish and Game)
- Management Plan for the Sherwin Deer Herd (California Department of Fish and Game) (1985)

- Monache Deer Herd Plan (California Department of Fish and Game) (1981)

- Mono Lake Deer Herd Management Plan (California Department of Fish and Game)

- Pacific Crest National Scenic Trail Management Plan (1981)

- Pacific Coast Recovery Plan for the American Peregrine Falcon (U.S. Fish and Wildlife Service) (1982)

- Pacific States Bald Eagle Recovery Plan (U.S. Fish and Wildlife Service) (1986)

- Paiute Cutthroat Trout Recovery Plan (U.S. Fish and Wildlife Service) (1985)

- Pronghorn Antelope Habitat Management Plan (Bureau of Land Management, California Department of Fish and Game, Forest Service) (1982)

- Research Natural Area (RNA) Management Plans for established Research Natural Areas:

Indiana Summit	Established 1932
Harvey Monroe Hall	Established 1933
White Mountain	Established 1953
Last Chance Meadow	Established 1982
Sentinel Meadow	Established 1983

- Rock Creek Recreation Area Composite Management Plan (1964)

- Saline Valley and Lee Flat Burro Herd Management Plan (1985)

- Sierra Nevada Bighorn Sheep Recovery and Conservation Plan (California Department of Fish and Game, Forest Service, Sequoia/Kings Canyon National Park, Yosemite National Park) (1984)

- Supplemental Environmental Assessment for Geothermal Leasing in the Mono-Long Valley KGRA (Lease Block II) (1984)

- Watershed Improvement Needs Plan (1982)

- Wild Horse Management Plan for White Mountain and Inyo Mountain Herds (1976)

EXISTING PLANS INCORPORATED WITH DIRECTION TO REVISE OR UPDATE:

- Golden Trout Wilderness Management Plan (1982)

- Hoover Wilderness Management Plan (1977)

- Individual grazing allotment management plans (various dates)

- Interagency Motor Vehicle Use Plan (ORV Plan) (1977)

- John Muir Wilderness Management Plan (1979)

- Minarets Wilderness Management Plan (1979) (revise to include 1984 wilderness additions)

EXISTING PLANS THAT WILL BE REPLACED BY THE PLAN:

- Mammoth-Mono Unit Plan (1979)

- Ranger District Multiple Use Plans (circa 1970)

- Timber Management Plan for Owens River Working Circle (1967).

The Plan and its Environmental Impact Statement will serve as umbrella documents for all future planning on the Inyo. The annual program and budget for the Forest will conform to priorities and guidelines set forth in the Plan. All permits, contracts, cooperative agreements, and other instruments for occupancy and use will conform to the Plan. Environmental analyses for individual projects will be tiered to the Plan EIS and will add only that detail needed for site-specific decisions.

ADDITIONAL SOURCES OF INFORMATION

The planning documents are public documents. They are intended to explain the planning and environmental analysis processes in terms that are understandable. It is difficult, however, to describe natural resource management without using a considerable amount of specialized terminology. See Chapter VIII, Glossary, for definitions of the terms discussed in this document.

The data and analysis, decisions and activities upon which the EIS and Plan have been built are documented in the planning records and incorporated by reference into the Plan. The planning records are available for review by the public during regular business hours at the Forest Supervisor's Office, Inyo National Forest, 873 North Main Street, Bishop, CA 93514, phone (619) 873-5841.

LOCATION OF THE PLANNING AREA

The area covered by the Plan includes all National Forest System lands within the Inyo National Forest boundary, (1,931,115 acres) and 25,201 acres of the Sierra National Forest administered by the Inyo. Approximately 114,941 additional acres of land in other ownership lie within the Forest boundary. Wherever Forest acreage is displayed in the EIS and Plan, Sierra National Forest land is included. Land in other ownership is excluded. Exceptions are otherwise indicated.

In September, 1984, Congress designated the Mono Basin National Forest Scenic Area, which encompasses 116,000 acres of land within the Forest boundary. Detailed resource and development planning for the Scenic Area is being conducted separately from this planning process.

The Planning area lies in east-central California along the Nevada border (see the vicinity map). The Sierra Nevada Crest and its Eastern Escarpment are included, as are most of the Inyo, White, and Glass Mountain ranges.

The communities of Mammoth Lakes, Lee Vining, and June Lake lie within the Forest boundary. The City of Bishop and the communities of Big Pine, Independence, and Lone Pine lie between the eastern and western segments of the Forest. The planning area area lies in California's Inyo, Mono, Fresno, Madera, and Tulare Counties and Nevada's Mineral and Esmeralda Counties.

The Inyo National Forest is a six- to eight-hour drive north from the Southern California population centers of Los Angeles and San Diego, and is easily accessible all year from those areas. The drive from the Sacramento and San Francisco Bay areas also takes from six to eight hours, but the routes cross high mountain passes which are usually closed during the winter months because of snow accumulations. The Forest is a three- to five-hour drive south from Reno, Nevada and is the same distance north from Las Vegas, Nevada.

The Forest has Ranger District Offices in Lee Vining, Mammoth Lakes, Bishop, and Lone Pine. The Forest Supervisor's Office is in Bishop.

Table 1
Lands Administered by the Inyo National Forest

County	NFS** Acres	% of Total
Mono (California)	811,049	42.0
Inyo "	794,352	41.1
Tulare "	186,165	9.7
Madera "	50,406	2.6
Fresno "	25,256	1.3
Esmeralda (Nevada)	49,884	2.6
Mineral "	14,003	0.7
TOTAL	**1,931,115**	**100.0**

* All acreage figures displayed in the planning documents are derived from the Forest data base. They may differ from acreage figures displayed in other documents. These acreage figures are used for planning only. They could not be used as a basis for legal action without site-specific survey information.

ISSUES AND CONCERNS

This section discusses the issues and concerns that were identified in the original public involvement process for this Plan. Public issues and management concerns are aspects of natural resource management that receive special emphasis in Forest planning. The issues and concerns collectively

indicate the scope and nature of the analysis needed for the Environmental Impact Statement.

The Inyo National Forest identified public issues by interacting with individuals and organizations that expressed interest in this planning process. Management concerns of the Forest Service include those from national, regional, and Forest levels. The Final Plan was developed in response to comments received on the Draft Plan, submitted to the public for review in October 1986. Forest Service responses to these comments are displayed in the Public Response Appendix.

Not all public issues and management concerns related to Inyo National Forest management are appropriate for inclusion in this planning process. Those that have been selected for consideration address concerns that can be resolved by the Forest Service at the Inyo National 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 subject. Issues and concerns have, therefore, been consolidated and identified as "issue/concerns".

This section only displays those issues and concerns that were identified prior to distribution of the Draft Forest Plan. Those comments that were received in response to the Draft Plan are incorporated in the Public Response Appendix and are answered in more detail by the Forest Service in that document.

The following list displays the general concerns that relate to specific resources of the Forest. Each of these contains several specific issues or concerns that were identified in the initial scoping effort of this planning process. Public issue/concerns are indicated by (p); management by (m). Economic and social issue/concerns are addressed first, followed by natural resource issue/concerns.

ECONOMIC ASSESSMENT

<u>Issue/Concern</u>: How can the Forest produce goods and services to maximize economic efficiency?

- Thoroughly discuss discount rates and value of non-market goods and services showing the possibilities of different results under different assumptions (p)

- How can long-term and short-term economic benefits be balanced? (p)

- Do Forest Service programs help maintain economic stability and employment in local communities? (p)

SOCIAL ASSESSMENT

Issue/Concern: How does the management of the Inyo National Forest influence the local social environment and lifestyle?

- Which segments of the population and which communities might be impacted by Forest management policy? (m)

- Where does the Forest have an influence on the public and community? (m)

AIR QUALITY

Issue/Concern: What can the Forest do to influence air quality?

- Dust, smoke, and regional haze are the most serious air quality problems on and near the Forest. (m)

CULTURAL RESOURCES

Issue/Concern: How should the Forest manage cultural resources and provide for the use of Forest lands by American Indians for traditional practices?

- Archaeological sites should be inventoried and protected, including restrictions on motorized access. (p)

- Native American religious and ceremonial sites should remain inviolate. (p)

- Cultural resource interpretive activities on the Forest are very well attended. (p)

- Local American Indians wish to use Forest land for traditional cultural and religious practices. (p)

- There is a need to effectively integrate the management of cultural resources with the management of other resources. (m)

DIVERSITY

Issue/Concern: What is a desirable level of vegetative diversity for the Inyo National Forest, and what should the Forest do to maintain or achieve that level?

- Manage natural forces (such as insects, disease, and fire) to maintain diversity in the long term while minimizing the disruptive effects of those forces in the short term. (m)

- Respond to the demand for land uses (such as hydroelectric and geothermal developments, road and utility corridors, campgrounds, timber management, and mineral extraction) that threaten to reduce diversity. (m)

- Riparian areas and coniferous forests suitable for timber management have the greatest potential diversity and are the most threatened by management activities. (m)

- Full control of wildfires reduces diversity. (m)

ENERGY

Issue/Concern: How does energy development fit in with the overall resource management program on the Forest? Geothermal energy is addressed under Minerals.

- Resolve conflicts between hydroelectric projects and water-dependent resources. (p & m)

- Resolve potential conflicts between wind farms and visual resources, soil stability, and other land uses. (m)

- Keep energy development consistent with other resources, allowing no irreparable damage. (p)

- Encourage hydroelectric use outside wilderness and Further Planning areas. (p)

- Consider energy resources such as wind, solar, wood fuel. (p)

FACILITIES

Issue/Concern: What level of facility construction and maintenance is needed to support Forest management objectives?

- Eliminate the backlog of building and utility maintenance to meet health and safety codes. (m)

- Provide for the expansion of administrative facilities where needed. (m)

- There is a need for a materials management and development plan. (m)

- There is a need to coordinate with local fire districts when planning structural developments on the Forest. (m)

- Determine the feasible mass transit options on the Forest. (m)

- There is a need for more roads for recreational access. (p)

- There is a need to reduce roads to prevent environmental damage. (p)

- Construct roads only where environmental damage can be minimized. (p)

- There is a need to regularly examine agreements between the Forest Service and Inyo and Mono Counties regarding the maintenance of roads that come under both jurisdictions. (m)

- There is a need for more trails and better maintenance of existing trails. (p & m)

- The need for trails specifically includes nordic skiing, hiking, OHV, and handicapped-access trails. (p & m)

- There is a need to locate, design, and construct trails to provide the desired experience while minimizing resource damage. (p & m)

- The need for new trails is greatest in concentrated recreation use areas and nordic ski areas. (m)

FISH

Issue/Concern: How should fish habitat on the Inyo National Forest be managed?

- Protect stream habitat from grazing, recreation development, and water diversions. (p)

- Improve stream habitat quality for resident trout. (m)

- Meet the increasing demand for fishing. (m)

- Assure population viability of all resident fish species. (p)

- Protect lands surrounding streams and lakes with the potential for classification as wild trout waters. (p)

- Address the impact of small hydro development on fisheries. (m)

- Manage habitat for the recovery of threatened Paiute and Lahontan cutthroat trout. (p & m)

FURTHER PLANNING AREAS

Issue/Concern: How should Further Planning Areas on the Forest be managed?

- There is a need for more wilderness. (p)

- There is a need for no more or not much more wilderness. (p)

- Consider watershed values when recommending wilderness. (p)

- Resist the pressure from industry to immediately "road" those areas made available for non-wilderness uses by the California Wilderness Act (thus precluding possible future wilderness recommendations). (p)

- Resist the pressure from wilderness advocacy groups to manage non-wilderness areas as "de facto" wilderness. (p)

- Make well-considered recommendations for the wilderness or non-wilderness management of Further Planning Areas. Consider the suitability and manageability of each area for wilderness and the trade-offs between wilderness designation and other resources and activities. (m)

- There is a need to coordinate Inyo National Forest wilderness recommendations with BLM recommendations for adjoining lands. (m & p)

GEOLOGY

Issue/Concern: What is the role of geologic resources and services in the overall Forest management program?

- There is a potential demand for groundwater as a domestic water source for Mammoth Lakes. (m)

- There is a need to assess groundwater resources on a Forest-wide basis. (m)

- There is a need to recognize and make allowance for the risk to planned Forest projects posed by geologic processes such as landslides, earthquakes, and volcanic events. (m)

- There is a need to protect outstanding geologic features that are vulnerable to damage or destruction. (p & m)

LANDS

Issue/Concern: What land use and landownership adjustment policies and procedures are needed to respond both to local community needs and to the demands of regional and national publics?

- Should National Forest lands adjacent to growing communities be available (through exchange) for private development programs? (m)

- As the Mammoth and June Lake communities expand, there is an increasing demand to locate community service facilities on public land under special use permit. (m)

- Electric energy conveyors have expressed their need for a future utility corridor paralleling the major north-south interstate Pacific DC Intertie transmission line. (m)

MINERALS

Issue/Concern: How can the Forest best encourage mineral (including geothermal) exploration and development while protecting surface resource values and other land uses?

- To what extent should National Forest land be available for geothermal exploration and power plant development? (p)

- What effects would geothermal development have on the environment and on the recreational attractions that support the local economy? (p & m)

- What are the long-term effects on surface resources and on groundwater of removing geothermal fluids? (p & m)

- Consider the impact of additional wilderness and/or additional mineral withdrawals on mineral activities. (p)

- There is a need to address the impacts of mineral exploration and development on surface resources such as visual quality, soil stability, vegetation, and wilderness values. (m)

PEST MANAGEMENT

Issue/Concern: What is the appropriate pest management strategy for the Inyo?

- It is desirable to use cultural, biological, or mechanical controls instead of chemical pesticides. (p)

PROTECTION

Issue/Concern: What is the appropriate fire management strategy for the Inyo?

- Allow natural fires to burn in appropriate areas. (p)

- There is a need to determine the most cost-effective fire organization for the Inyo National Forest, depending largely on the combination of fire suppression strategies implemented. (m)

RANGE

Issue/Concern: How should the Inyo balance the needs of the range program (domestic livestock and wild horses and burros) with the need to protect and/or produce other resources?

- Full fire control contributes to declining range forage outputs. (p)

- Cattle overgraze riparian areas and key wildlife wintering and fawning areas, resulting in increased erosion and loss of vegetation for forage and cover. (p)

- The grazing program should not be reduced or prevented from increasing as a result of the issues listed above. (p)

- How many animals are appropriate for a wild horse or burro Chapter I management territory? How is the range resource equitably apportioned to wild horses and burros, native wildlife, and domestic livestock? (p)

- There are many factors limiting the ability of the Forest to meet the President's target for red meat production (46 percent increase over specified base level). (m)

RECREATION

<u>Issue/Concern:</u> What is the best recreational opportunity program for the Inyo (considering supply, demand, other resource management and development opportunities, and environmental protection needs)?

- Recreation development is of concern to many people, and of vital concern to some, especially to local area residents. (p)

- The public is collectively interested in the entire range of development options. (p)

- The resource values that attract recreationists to this area are extremely important and should rarely be compromised. (p & m)

- The public is dissatisfied with the reduced use seasons and deteriorating facilities they have encountered in recent years. (p & m)

- The supply of overnight facilities is falling behind demand. (m)

- Day use facilities, such as trails and interpretive sites, are insufficient to meet needs. (m)

- There are major potential conflicts between recreational developments and small hydroelectric development, geothermal development, and timber harvest in the red fir forest east of San Joaquin Ridge. (m)

- Should more land be made available immediately for added alpine ski area capacity? (p)

- Alpine ski area potential should not be compromised by other management activities on identified potential ski areas until the demand for skiing begins to level off. (m)

- Alpine ski areas have impacts on visual quality, soil stability, water quality and quantity, transportation patterns, safety, the local community, and landownership patterns. (m)

- Community growth in response to increased alpine skiing could negatively affect summer recreation sites on Forest lands near growing communities. (m)

- There is a need for more opportunities for OHV use. (p)

- There is a need for more restriction on OHV use. (p)

- Remove OHV routes from sensitive areas. (p)

RESEARCH NATURAL AREAS

Issue/Concern: What contribution should the Inyo make to the national and regional systems of Research Natural Areas (RNAs)?

- Research Natural Areas should be identified and established. (m & p)

- The Inyo should confirm the fact that all botanical RNA targets assigned to the Forest have been met. (m)

RIPARIAN AREAS

Issue/Concern: What is the significance of riparian areas on the Forest, and how should riparian area-dependent resources be maintained, enhanced, and/or restored?

- Maintain and increase riparian vegetation. (p)

- Livestock grazing, recreation, and water diversion have impacts on riparian areas. (p)

- Energy developments, mineral activities, and timber harvest represent actual or potential conflicts with riparian area-dependent resources. (m)

- Accelerated erosion in wet meadows (including active streambanks and channel degradation) is of special concern. These problems are most severe in the White Mountains and on the Kern Plateau. (m)

- The current policy of full wildfire control prevents the use of unplanned ignitions to eliminate woody vegetation encroaching on wet meadows. (m)

SENSITIVE PLANTS

Issue/Concern: How should the Forest manage habitat for sensitive plant species?

- Protect threatened and endangered species. (p)

- Consider the effects of Forest management on all native plant species. (p)

- What is the best overall approach to managing the sensitive plant program? (m)

- How should potential conflicts between the needs of sensitive plants and other resources and activities be mitigated? (m)

SPECIAL INTEREST AREAS

Issue/Concern: Should the Forest consider establishing any additional Special Interest Areas?

- Establish special areas to protect archaeological sites, threatened and endangered species, botanical, geological, and visual quality areas. (p)

- The Forest is directed to identify candidates for geologic Special Interest Areas. The Inyo has many outstanding geologic features. (m)

- The Forest needs to evaluate National Natural Landmark nominees proposed by the Department of Interior and to consider nominating other outstanding features on the Forest for National Natural Landmark listing. (m)

TIMBER

Issue/Concern: What is the best balance between timber (including fuelwood) production, other resource management and development opportunities, and environmental protection needs?

- Establish a regulated forest to meet long-term sustained yield on all available, suitable timber land. (m)

- Integrate silvicultural practices with other resource values. (p & m)

- Determine the size of the managed timber base, resolving conflicts between timber and other resources. (m)

- Provide public-use fuelwood to meet demand. (p)

- Maintain the opportunity for active management of pinyon-juniper. (p & m)

- Consider the conflict between public fuelwood gathering and other values such as wildlife habitat and unique or outstanding vegetation types. (m)

VISUAL RESOURCES

Issue/Concern: What role does visual quality play in the overall resource management program, and how can that quality be protected and enhanced?

- Maintain and manage for visual quality. (p)

- Resolve conflicts between visual quality and other resources. (m)

- Maintain or enhance current visual resources and scenic attractions. (m)

WATERSHED

Issue/Concern: How should the Forest respond to the needs for water quality, increased water yields, water rights for Forest resource management, and healthy watershed condition?

- Soil productivity is declining. (m)

- There is a need to rehabilitate damaged or deteriorated watersheds. (m)

- Adopt policies in timber management, grazing, and recreation that enhance watersheds. (m)

- There is a lack of legal mechanisms for obtaining water rights for nonconsumptive water uses (those dependent on water in place). (m)

- There is a public demand for more water yield and availability. (p & m)

- There is competition between consumptive and nonconsumptive water uses. (m)

WILD AND SCENIC RIVERS

Issue/Concern: What recommendations should the Forest make for the management of candidate wild and scenic rivers?

- Potential additions to the wild and scenic rivers system should not be threatened. (p)

- Preserve free-flowing rivers unspoiled in their natural state and consider for wild and scenic rivers system. (p)

- Assess candidate rivers for inclusion in the wild and scenic rivers system. (m)

WILDERNESS

Issue/Concern: Is there any need for change in the management of designated wilderness on the Forest?

- Examine existing wilderness management plans for consistency and responsiveness to current conditions. Provide for the needed changes in the Plan. (p & m)

- There is a need to establish direction for wilderness designated by the California Wilderness Act of 1984. (p & m)

WILDLIFE

Issue/Concern: How, where, and to what degree should wildlife habitat be maintained and enhanced, and how should wildlife needs be coordinated with other resource management and development opportunities on the Forest?

- What is a desirable level of diversity, amount, and distribution of wildlife habitat? (p & m)

- What relative emphasis should be given to habitat for the various wildlife species? (p & m)

- How should wildlife needs be balanced with the needs of competing resources? (p & m)

- Full control of wildfires reduces habitat for wildlife dependent on early seral stages. (m)

- What contribution can management make to the growing demand for wildlife-related recreation (hunting and nature study)?

- Deer numbers have declined over the past twenty to thirty years. (p & m)

- The Forest must analyze the opportunities for meeting the 1980 RPA Program goal of increasing mule deer numbers 20 percent. (m)

- Sage grouse populations are declining. (p & m)

- Blue grouse habitat should be protected. (m)

- There is a need to manage endangered species on the Forest (bald eagle and peregrine falcon) for species recovery. (m)

- How many goshawk nest sites are needed to maintain population viability? How many of these sites should be maintained in stands of suitable timber?

- Sierra Nevada mountain sheep should be reintroduced into historic range.(p & m)

- The management of Nelson mountain sheep should be emphasized. (p)

- Protect habitat for sensitive and special interest species not addressed in specific issues or concerns. (m)

- Maintain enough snags, down logs, and overall habitat diversity to ensure population viability for snag-dependent species. (m)

- The Forest would have difficulty meeting the 1980 RPA Program goal for cavity-nesting birds while meeting the RPA timber target. (m)

- Manage riparian habitat to ensure the viability of dependent wildlife. (p & m)

- Manage Great Basin shrub habitat types so that the viability of wildlife dependent on early seral stages is ensured. (m)

II

ALTERNATIVES

CHAPTER II. ALTERNATIVES

INTRODUCTION

This chapter describes the alternatives analyzed in the planning process. In this planning process, each alternative describes management direction designed to guide the management of Forest lands and resources from their current state to a desired future condition. Many combinations of resource uses and management activities are possible in formulating a reasonable range of alternatives.

The Resources Planning Act of 1974 (RPA), the National Forest Management Act of 1976 (NFMA), and the associated federal regulations [36 CFR 219.12(f)] guide alternative formulation in this planning process. The National Environmental Policy Act of 1969 (NEPA) and 36 CFR 1500-1508 describe how alternatives must be developed in environmental analyses and presented in Environmental Impact Statements. Additional requirements for alternative formulation are found in the Forest Service Manual (FSM 1920) and Land Management Planning Direction for the Pacific Southwest Region (Region 5).

The Forest planning Interdisciplinary (ID) Team followed the guidelines taken from the above sources in developing the alternatives. Each of these alternatives is potentially a Forest Plan. As such, each alternative includes goals and objectives for resource management and resource program direction, including standards, guidelines, and prescriptions applied to specific areas of land to achieve the stated goals and objectives.

The full range of planning alternatives is defined at the lower level by the Minimum Management Requirements (MMR) specified in 36 CFR 219.27 and at the upper level by the physical and biological capability of the land to provide resources and services (the supply potential of the Forest). The number of alternatives to be considered within this range is guided by national and regional requirements and the need to respond to all significant Forest issues and concerns in at least one alternative.

An important component of the alternative formulation process is the consideration of cost-efficiency in resource management. The concept of Present Net Value (PNV) is used in Forest planning as a measure of cost-efficiency. The PNV of a given alternative is the monetary value of resource outputs minus the cost of managing the Forest under that alternative.

Although cost-efficiency is an important factor in the formulation of alternatives, it is not the only important factor. The Forest Service is mandated to manage all resources wisely, not just those with monetary value. The concept of net public benefit is used to describe total benefits, including those with monetary value (priced benefits or commodities) and those without (non-priced benefits or amenities). A given alternative will emphasize objectives for amenities, commodities, or a mix of the two. The economic efficiency of the alternative is then calculated by meeting the stated objectives of the alternative in the manner that maximizes PNV.

In response to these many considerations, the ID team developed alternatives with different themes, different mixes of resource management direction, and different output levels of goods and services.

ALTERNATIVE DEVELOPMENT PROCESS

PRELIMINARY STEPS

Alternatives were formulated after the ID team accomplished the preliminary planning steps summarized below. Additional information about the processes and products of each step is filed in the planning records.

1. Public issues and management concerns were identified. This process involved an initial formal public involvement period and monitoring of issues and concerns as they changed, were resolved, or evolved during the planning process.

2. Process criteria were derived from issues, concerns, and legal requirements to guide the subsequent planning steps.

3. A comprehensive multiple-resource data base for the Forest was developed and stored in a computerized retrieval system.

4. An Analysis of the Management Situation (AMS) was conducted for each resource on the Forest. Current and projected future management; supply and demand; issues, concerns, opportunities; and the need to establish or change direction were addressed. Although an initial AMS was developed and documented, the AMS is an open-ended process that continues to evolve as additional information is gained.

5. The social and economic characteristics of the Forest's zone of influence were described in a social assessment of the management situation.

6. Forest-wide Standards and Guidelines common to all alternatives were developed.

7. The planning computer model (FORPLAN) was constructed, using the following steps:

   - Forest modeling requirements that would apply to all planning alternatives were identified.

   - FORPLAN prescriptions (combinations of management activities) were developed.

   - The types of land suitable for the application of each prescription were identified. This suitability determination was based on such factors as the land classification (e.g., wilderness or general National Forest), vegetation type, and slope. The determination of suitability of lands for given

prescriptions was a process that evolved as more information became available during the FORPLAN analysis.

- The management costs and resource outputs (with associated dollar values) for each prescription were calculated. Output and cost figures were based on the management activities of the prescription and the physical and biological characteristics of each type of land to which the prescription could be applied.

- The FORPLAN application of prescriptions to the Forest land base was verified by mapping key prescriptions and determining whether the lands chosen for those prescriptions were, indeed, appropriate.

8. Minimum and maximum potential supply levels for specific resources were projected in the benchmark analysis. These minimum and maximum levels defined the boundaries, or "decision space," for the range of alternatives considered.

ALTERNATIVE DEVELOPMENT STEPS

The actual process of developing alternatives followed the steps described below.

1. Eleven preliminary alternatives, representing a variety of themes, were generated. Some of the alternatives were based on national and Regional planning themes; the others were developed in response to issues, concerns, and opportunities specific to the Inyo National Forest.

2. Each preliminary alternative was analyzed through the FORPLAN computer model. FORPLAN was programmed with the prescriptions, land suitability criteria, and cost and benefit values described above. The key objectives of the alternative were then inserted in the model, and it was programmed to maximize economic efficiency (Present Net Value or PNV) while meeting those objectives.

   The results of the FORPLAN analysis for each alternative were a schedule of management activities applied to the Forest land base, the resulting resource outputs, and the monetary value of those outputs and the cost of producing them.

3. When the FORPLAN analysis was complete, the results were examined to determine whether the alternatives represented a reasonable range of management options, costs and benefits, commodity and amenity outputs, and responded to public issues and management concerns.

4. Of the eleven preliminary alternatives, six were eventually selected for more detailed study. Selection was based on a screening procedure that assessed resource compatibilities, responsiveness to issues, and practicality.

5. The alternatives studied in detail were expanded to include the resource program direction that would be applied under the alternative and to describe the Forest in the year 2030 if the alternative were implemented. The environmental consequences in Chapter IV address only those alternatives that were studied in detail.

6. The Preferred Alternative in the Draft EIS was revised to reflect the expressed demands of the public in the public comments received as a result of the Draft EIS and Plan. These comments were reviewed by the Forest management and interdisciplinary teams in the construction of the Final Preferred Alternative which is displayed in this document and more clearly defined in the Plan.

RANGE OF ALTERNATIVES

The Inyo National Forest has certain physical and Congressional or administrative designations that confine management options. These limit the range of alternatives that can be implemented. The following are two of the primary limiting factors.

1. Designated wilderness accounts for 565,142 acres, or 30 percent of the Forest. Other lands under administrative or congressional designation for special management represent 92,250 acres, or 5 percent of the total land base. The range of management options on such lands is limited by these designations.

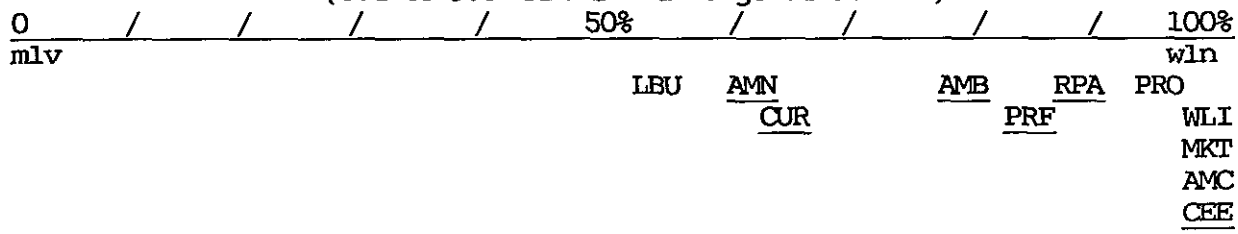
2. Of Forest land outside wilderness, 27 percent lies on slopes steeper than 60 percent, 34 percent on slopes between 30 and 60 percent, 21 percent on slopes between 15 and 30 percent, and only 18 percent on land flatter than a 15 percent slope. Slope is a limiting factor for many types of resource management.

Given these limitations, the Forest has developed a set of alternatives representing a range of resource outputs and cost and benefit values. The following table illustrates the range of alternatives for key factors.

Quantities are expressed as a percent of the difference between the minimum and maximum levels projected in the benchmarks. The numerical difference between minimum and maximum levels is indicated in parentheses. Outputs represent average annual figures for the fifth decade. Alternatives studied in detail are underlined; alternatives eliminated from detailed study are not; benchmarks are indicated by lower-case letters.

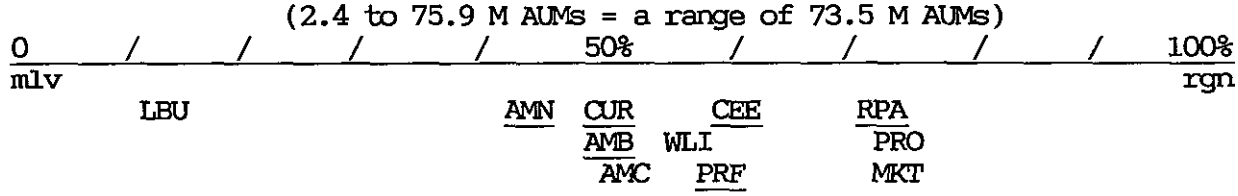
TOTAL RECREATION USE

(0.4 to 9.6 MMRVDs = a range of 9.2 MM)



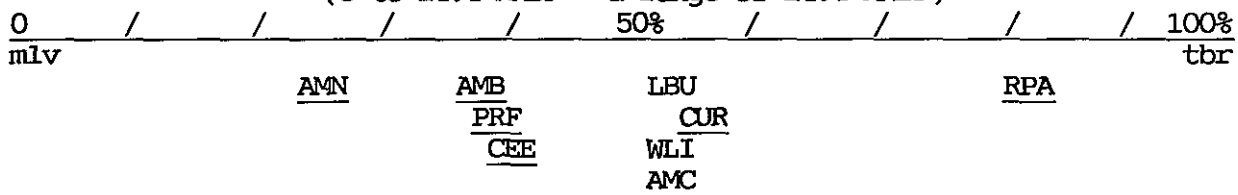
TOTAL GRAZING USE

(2.4 to 75.9 M AUMs = a range of 73.5 M AUMs)



TIMBER ALLOWABLE SALE QUANTITY*

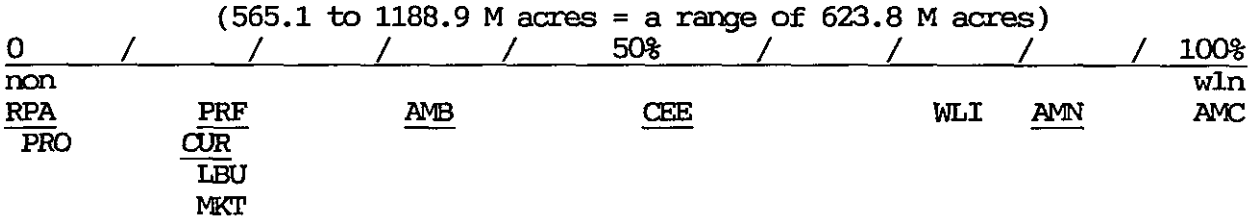
(0 to 24.4 MMBF = a range of 24.4 MMBF)



*PRO and MKT alternatives projected timber harvest above "tbr" by dropping the non-declining yield policy. Therefore they did not fall within the decision space for timber as defined by the benchmarks.

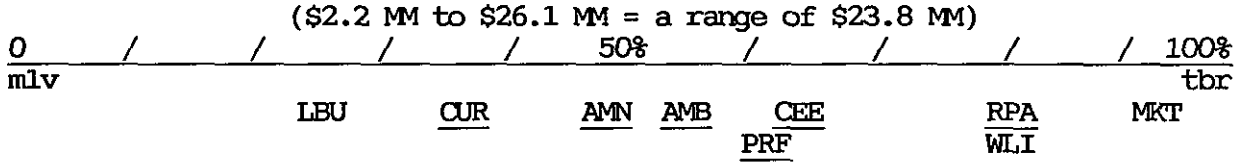
DESIGNATED WILDERNESS

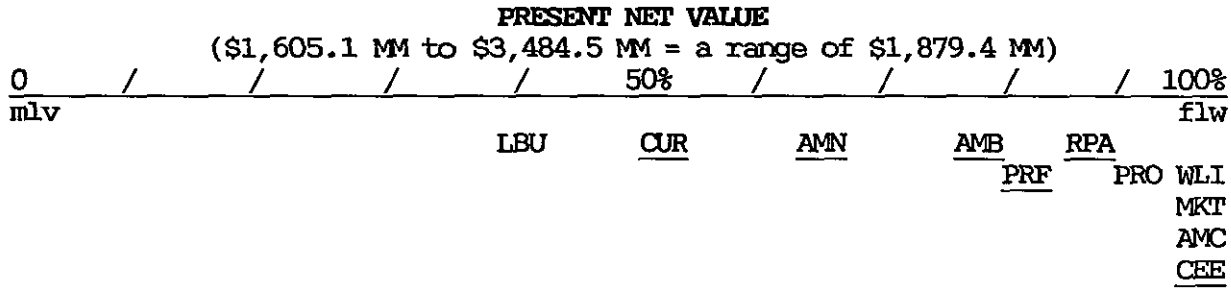
(565.1 to 1188.9 M acres = a range of 623.8 M acres)



TOTAL COST

($2.2 MM to $26.1 MM = a range of $23.8 MM)





BENCHMARKS

INTRODUCTION

Benchmarks are analytical models that serve three functions: (1) to determine resource costs and outputs at the minimum level of management; (2) to determine the maximum physical and biological capability of the Forest to produce certain key resources; and (3) to calculate the most economically efficient mix of management activities by maximizing Present Net Value (PNV) under different sets of objectives.

The purpose of analyzing benchmarks for minimum and maximum single-resource outputs is to develop a decision space within which to develop feasible alternatives with a multiple-resource emphasis. The output levels for each resource under each alternative will be above the minimum benchmark and below the maximum benchmark. The benchmarks also provide a basis for comparing alternatives in terms of resource outputs.

The objective of benchmarks that maximize PNV for different combinations of activities is to objectively evaluate the economic costs and trade-offs of various planning alternatives.

Benchmarks are not limited by Forest Service policy or budget, optional requirements, spatial feasibility, or program and staffing requirements. For this reason, while benchmarks may be technically possible, they can not necessarily be realistically implemented.

The benchmark analysis was a valuable tool in the formulation of alternatives. By examining the minimum allowable management level and the maximum supply potential for each key resource, the ID team was able to visualize the range of options available. The alternatives were developed with the intention of establishing realistic points along the scale between minimum and maximum levels for major resources.

Using the planning linear computer program (FORPLAN), the Forest analyzed nine benchmarks during the Forest planning process. The benchmarks are discussed below in terms of each benchmark theme and knowledge gained from the analysis. Key resource outputs, costs, and PNV for the benchmarks are displayed in Table 2. A more detailed description of the benchmarks, their purpose and modeling specifications, is contained in Appendix B.

INDIVIDUAL BENCHMARK DISCUSSION

1. Code: MLV

Theme: Minimum level management. The purpose of this benchmark is to show the unavoidable costs and benefits of public ownership of the Forest and to establish the basis for comparing the outputs, costs, benefits, and other impacts of the planning alternatives.

Only those benefits that are incidental to protecting life, health, and safety would be provided. Management would be oriented toward preventing environmental damage to lands in other ownerships. Unavoidable land uses, such as utility corridors and private land access across National Forest lands would be allowed. Management activities would include fire suppression and law enforcement. No timber, domestic livestock grazing, developed recreation, or wildlife habitat improvement outputs would be produced. No Further Planning Areas would be recommended for wilderness. There would be some incidental outputs, including dispersed recreation use, water yield, and wild horse and burro grazing.

This benchmark is the basis for the marginal analysis of economic efficiency for all benchmarks and alternatives.

Knowledge gained: This benchmark has a positive PNV ($1,605.1 million), reflecting primarily the large amount and high value of residual water coming off the Forest. Other smaller benefits come from background levels of dispersed recreation, hunting, and fishing. Damage from wildfire would be expected to increase to levels well above the current annual average because of reduced staffing and longer travel to fires. Outputs related to timber harvest, developed recreation, wildlife habitat improvement, and domestic livestock grazing would not be produced. For this reason, and because of high fire losses, the PNV of this benchmark is only about 45 percent of the PNV of other benchmarks.

This benchmark was not carried forward into the alternative analysis because it did not allow the Forest to meet current commitments (e.g., to developed recreation and grazing permittees) or to manage the land for multiple-use outputs such as timber, range, and developed recreation.

2. Code: FLW

Theme: Maximize Present Net Value (PNV). This benchmark demonstrates the most economically efficient level of production for resources with assigned dollar values. Management activities are constrained only by the production limitations of the land and by the requirements of technical feasibility. This benchmark is used as the basis for evaluating the cost of Minimum Management Requirements. This benchmark responds to the issue/concern of evaluating the cost-efficiency of resource management.

Knowledge gained: As this benchmark maximizes resource outputs with monetary value and applies the fewest requirements, it has the highest PNV of any benchmark ($3,484,500). The following conditions would be found under this benchmark:

- Developed and dispersed recreation would be provided to meet projected demand (where the supply was available), including the development of all recreational facilities and the maintenance of facilities at standard levels of operation over the 50-year planning horizon.

- Wilderness would increase by 339,800 acres over the existing level for a total of 904,900 acres on the Forest. The Further Planning Areas recommended for wilderness would be Coyote Southeast, Laurel-McGee, Tioga Lake, Hall Natural, Log Cabin-Saddlebag, and White Mountains.

- Fish and wildlife habitat improvement projects would increase to meet the projected demand for fishing and hunting. All potential fish habitat improvement would occur within the planning horizon.

- Livestock grazing would increase an average of 12 percent over base year levels by the end of the planning horizon as a result of rejuvenation of decadent vegetation and increased water developments.

- Wildfire acres burned would be reduced 40 percent below the background level represented in MLV, above.

- Timber harvest, unconstrained by the requirement of non-declining yield, would average about 1.3 MMCF (8.7 MMBF) per year over the first 50 years. This level represents about 83 percent of base year programmed harvest.

This benchmark produces the highest PNV because it includes no constraints on the Forest's ability to optimize resource outputs. The benchmark illustrates that over 85 percent of the potential benefits that could occur on the Forest would arise from developed and dispersed recreation use. In areas where timber harvest competes with developed recreation and potential alpine ski areas, timber harvest is displaced on the basis of economics and Present Net Value.

This benchmark does not meet Minimum Management Requirements for goshawk nesting territories or riparian area protection, or the Minimum Implementation Requirement for visual quality; for these reasons, it was not carried forward into the analysis of alternatives.

3. **Code: MMR**

Theme: Maximize Present Net Value (PNV) under Minimum Management Requirements. This benchmark demonstrates the opportunity costs of the Minimum Management Requirements considered collectively. It forms the basis for evaluating additional requirements beyond the Minimum Management Requirements. This benchmark responds to the issue/concern of evaluating the cost-efficiency of resource management.

Knowledge gained: The PNV of this benchmark is $3,484,200, representing a $0.3 million drop (less than one percent) relative to FLW, above. The small size of that change demonstrates that the imposition of Minimum Management Requirements (MMRs) would have virtually no economic consequences. The application of MMRs would result primarily in changing the spatial arrangement and timing of vegetation treatments, and would provide for non-declining yield and even flow. The slight reduction in total timber yield can be attributed equally to goshawk habitat protection and limitations on harvest in riparian areas. This benchmark produces a mix of management practices and outputs nearly identical to those in FLW, with the following differences:

- Riparian areas and goshawk habitat would be maintained at levels needed to meet Minimum Management Requirements.

- Timber harvest would meet the requirement of non-declining yield and would represent only slightly reduced volumes.

- The same Further Planning Areas would be recommended for wilderness as in FLW; they are: Coyote Southeast, Laurel-McGee, Tioga Lake, Hall Natural, Log Cabin-Saddlebag, and White Mountains.

As this benchmark does not meet the Minimum Implementation Requirement for visual quality, it was not carried forward intact into the analysis of alternatives; the addition of the visual Minimum Implementation Requirements to this benchmark resulted in Alternative CEE, which was studied in detail.

4. **Code:** MKV

Theme: Maximize PNV for only those resources with market value, applying Minimum Management Requirements. The purpose of this benchmark is to estimate the most cost-effective mix of resource management practices for producing outputs with established market prices (i.e., timber, fuelwood, geothermal energy, livestock forage, and developed recreation). This benchmark responds to the issue/concern of evaluating cost-efficiency in resource management.

Knowledge gained: The outputs of market resources under this benchmark would not differ significantly from those in the MMR Benchmark described above, in which both market and non-market outputs were valued. This fact demonstrates the low level of conflict between market and non-market outputs on the Forest. Because they were not valued economically in this benchmark, outputs of non-market resources declined significantly, resulting in a PNV of $3159.8 million. The large drop in PNV from the MMR benchmark indicates the relative importance of non-market values on the Inyo National Forest.

The most significant differences between MKV and MMR are:

- Dispersed recreation opportunities would be provided at below-current levels.

- Timber outputs would drop because the non-market outputs induced from timber harvest were not given economic value.

- Wilderness would be maintained at current levels with no additional acreage recommendations in response to demand.

- Wildlife habitat improvements would be provided at near-minimum levels, with a resulting drop in hunting and fishing use.

- Range outputs would increase as a result of reduced competition with wildlife and wilderness resource values.

The significant drop in timber, dispersed recreation, and wildlife outputs disqualified this benchmark from analysis as an alternative.

5. Code: TBR

Theme: Maximize timber production for one decade. This benchmark defines the maximum possible timber output for the first decade, applying Minimum Management Requirements and non-declining yield. This benchmark responds to the issue/concern of establishing a regulated forest on virtually all available, suitable timber land.

Knowledge gained: The timber cut increased to nearly three times that of MMR, but the cost of harvesting was 48 percent greater than the total value of the timber, and five times the timber cost reported in MMR. The average annual harvest on the Forest under this benchmark would be 3.4 MMCF (22.1 MMBF) on 107,662 acres of suitable timber land. The following conditions would also result:

- Developed recreation, primarily alpine skiing, would be 1.5 million RVDs lower in TBR than MMR by the fifth decade.

- Dispersed recreation and wilderness use would be lower than in MMR because of timber harvest in concentrated recreation areas and Further Planning Areas respectively.

- The following Further Planning Areas would be recommended for wilderness: Coyote Southeast, Tioga Lake, Hall Natural, and White Mountains.

- Water yield would increase slightly over MMR in the second through the fifth decades.

This benchmark results in a PNV of $3279.9 million, a reduction of $204.2 million from MMR. The reduction is caused chiefly by the high cost of aerial logging of timber on 30-60 percent slopes, and reduced recreation outputs.

This benchmark was not analyzed as an alternative, primarily because it did not meet the Minimum Implementation Requirements for visual quality and because the cost of timber harvest was substantially higher than the value of the timber harvested.

6. **Code:** WLN

Theme: Maximize PNV with all Further Planning Areas recommended as wilderness. This benchmark responds to the issue/concern of recommending more wilderness on the Forest.

Knowledge gained: All Further Planning Areas, encompassing 623,800 acres, would be added to the existing 565,100-acre Forest wilderness base for a total of 1,188,900 acres of wilderness. Wilderness recreation would increase to 870,230 average annual RVDs by the fifth decade. This use figure is still well below the projected demand of 1,564,700 RVDs, as public demand is greater than the Forest's ability to provide wilderness use opportunities. As pointed out in MKV above, there are low levels of conflict between market and non-market values on the Forest; consequently, outputs with market value differ little from MMR. The following conditions resulted from the benchmark:

- There was a loss of PNV resulting from the cost of developing trails and trailheads to manage marginally suitable lands under wilderness designation.

- There was a slight reduction in both timber and range outputs due to a reduction in the land base available for intensive vegetation management.

Despite these differences, a less than 5 percent drop in PNV relative to MMR indicates a very slight economic effect over the long term. This fact indicates, in turn, that only a small proportion of total resource benefits with monetary value would be foregone if wilderness were maximized on the Forest.

This benchmark, with a slight re-ordering of objectives, was carried into the analysis of alternatives as Alternative AMC.

7. **Code:** NON

Theme: Maximize PNV while recommending no Further Planning Areas for wilderness. This benchmark responds to the issue/concern of establishing no more wilderness on the Forest.

Knowledge gained: This benchmark is similar to MMR, except that it has only 565,100 total acres of wilderness (vs. 904,900 acres in MMR), and that range outputs increase slightly with the reduction of wilderness acres. A comparison of NON with WLN indicates that, although wilderness designation does not significantly affect PNV on the Forest, the greatest PNV would be attained by recommending 339,800 acres (54 percent of Further Planning Areas) for wilderness.

Because this benchmark does not meet the visual quality MMR, it was not considered in the analysis of alternatives. Alternative RPA, which was studied in detail, responded to the issue of recommending no new wilderness on the Forest.

8. Code: RGN

Theme: Maximize domestic livestock grazing for five decades. The purpose of this benchmark is to estimate the maximum capability of the Forest to provide commercial livestock grazing over the planning horizon, subject only to Minimum Management Requirements. This benchmark responds to the issue/concerns of increasing range grazing and meeting the President's target for increased red meat production on the National Forests.

Knowledge gained: Livestock forage production would reach 75.9 average annual AUMs in the fifth decade. The following conditions would also result:

- Approximately 69,000 acres of non-commercial (pinyon) and unproductive commercial timber lands would be converted to bitterbrush and grass over the planning horizon.

- Maximum range production would preclude wilderness designation on 321,400 acres of Further Planning Areas selected for wilderness in MMR.

- The Further Planning Areas that would be recommended for wilderness are: Tioga Lake, Hall Natural, and Log Cabin-Saddlebag.

- Key deer winter range would be lost to intensive domestic livestock use.

This benchmark results in a PNV of $3460.7 million, a reduction of $23.4 million from the MMR. This reduction results primarily from reduced dispersed recreation RVDs due to smaller wilderness acreage and from the reduced density of dispersed recreation use where grazing occurs in concentrated recreation areas (e.g., the Lower Rock Creek and McGee Creek drainages).

This benchmark was not considered in the analysis of alternatives due to the conflict with wildlife and the fact that it does not meet the visual quality management.

9. Code: H20

Theme: Maximize water yield for five decades. This benchmark estimates the maximum capability of the Forest to provide water over the planning horizon, subject only to Minimum Management Requirements. This benchmark responds to the issue/concern of responding to the public demand for more water.

Knowledge gained: It was found that the potential for increasing water yield on the Forest is slight; the average annual water yield in this benchmark increases less than one percent when compared to FLW. The Further Planning Areas recommended for wilderness would be the same as in MMR: Coyote Southeast, Laurel-McGee, Tioga Lake, Hall Natural, Log Cabin-Saddlebag, and White Mountains.

Vegetation removal for timber harvest or ski area development was the primary method used to increase water yield. (As timber harvest was more effective than ski area development in producing water, it displaced skiing wherever both options were available.) The only area on the Forest that is both available (outside wilderness) and that has the vegetation, soil, and climate needed to achieve increased water yield is the San Joaquin Ridge area between Mammoth and June Lake. The reduction in PNV relative to MMR stems primarily from the high costs of timber harvest on steep slopes and the reduction in developed recreation RVDs, (primarily from loss of downhill ski areas to timber harvest).

This benchmark was not analyzed as an alternative because the cost of timber harvest exceeds the timber value, and the Minimum Implementation Requirement for visual quality is not met.

CONCLUSIONS DRAWN FROM THE BENCHMARK ANALYSIS

The following are some of the conclusions that can be drawn about Forest resources on the Inyo, and about the relationships and interactions among those resources, based on the the benchmark analysis.

- Because of the high benefit values associated with recreation, developed and dispersed recreation opportunities would always be provided at levels needed to meet projected demand (or to completely utilize the Forest recreation supply, whichever was the limiting factor) under the objective of maximizing PNV. The production of recreation outputs is very cost-effective, and more than 90 percent of the potential benefits (beyond residual output benefits) in the MMR benchmark result from recreation use. Limitations on the production of recreation outputs, when compared with limitations on outputs for any other resource, can potentially cause the greatest loss in PNV. For example, timber harvest in potential ski areas reduced PNV in both TBR and H2O.

- Designation of additional wilderness on the Forest shows an economic effect only in benchmarks that maximize single resources: RGN recommends the least acreage to wilderness, followed by TBR. In contrast, the benchmarks that maximize PNV demonstrate that no significant loss of commodity outputs would result from recommending all Further Planning Areas for wilderness (as seen by comparing WLN with MMR). This relationship indicates that wilderness recommendations will eventually be based more on the benefits, costs, and management considerations associated directly with wilderness designation, rather than on trade-offs with other resources and opportunities.

- The benchmarks demonstrate that livestock grazing, even when provided at maximum levels in the RGN benchmark, makes up a relatively minor part of the total PNV on the Forest. Where the objective is to maximize PNV, the benchmarks demonstrate that the Forest would be managed for an increase in grazing of slightly more than 22 percent, averaged over the five-decade horizon. On the other hand, maximum range production requires vegetation rejuvenation, type conversion,

fencing, and water developments, which are costly, preclude wilderness, and displace deer from key winter range.

- Despite other differences in the benchmarks, timber outputs would be maintained near the MMR level (except in TBR and H20, where the cost of timber production exceeded the value of the timber harvested). Timber makes up a proportionally small part of the total PNV on the Forest; i.e., less than four percent, even in the maximum timber benchmark. In addition, discounted public benefits in TBR would amount to only $0.67 for every dollar expended. The amount of suitable timber acreage in TBR was 9,500 acres greater than in MMR, because timber in potential developed recreation sites (primarily ski areas) harvested in TBR is not harvested when the objective function is to maximize PNV. This in part accounts for the difference in harvest levels between MMR and TBR.

- Water yield would increase only slightly under the objective of maximizing water, with increases coming primarily from timber harvest in ski areas. This benchmark demonstrates that the net value received from increased water yield due to increased timber harvest would be slight, since increased cutting is offset by the high cost of timber harvest on steeper slopes and the loss of potential ski area use.

- Because of the low Forest-wide costs associated with losses to wildfire, maximizing PNV would implement a reduced fire management organization, thereby accepting an increase of 200 acres in average annual acres burned. Furthermore, the fire organization would shift to a greater emphasis on fire suppression relative to prevention, which is more cost-effective than the current mix.

- The effect of Minimum Management Requirements on resource outputs and on PNV is very slight. This fact is demonstrated by the 0.1 percent decline in PNV and the minimal change in resource outputs between the FLW and MMR benchmarks. The impact was felt only on the timber harvest as a result of meeting goshawk and riparian area requirements.

- Resource outputs without market value, such as dispersed recreation, water, and wildlife, make up a major portion of total benefits from the Forest. The PNV from the MKV benchmark, in which only market resources are valued, is much lower than the benchmarks in which non-market values are considered. This relationship is true mainly because the largest single contribution to PNV is the background water yield coming from the Forest.

- As demonstrated by the MLV benchmark, PNV can be significantly reduced below the MMR benchmark when the budget is reduced. The MLV benchmark, with an objective function to minimize cost, indicates the largest possible reduction in PNV (nearly 54 percent below MMR). The reduction is chiefly attributed to losses in recreation, range, wildlife and timber outputs and a failure to reduce wildfire.

- In general, the resource outputs that most significantly contribute to PNV on the Forest are mutually compatible. Developed and dispersed recreation opportunities can be offered concurrently, with little consequence on other outputs. However, maximizing market outputs only reduces PNV and conflicts with wilderness recreation and wildlife outputs. The FORPLAN model tends to select non-market resources over market resources to maximize PNV; market resources (such as timber) benefit from compatible management with non-market resources, as seen when MKV is compared with MMR. Because certain non-market values associated with timber harvesting were not valued in MKV, the harvest schedule was reduced nearly 17 percent from the MMR harvest.

Table 2
Average Annual Outputs by Decade for Benchmarks

Activity/Resource	Benchmarks		
	MLV	FLW	MMR
PNV (MM$)	1605.1	3484.5	3484.2
TIMBER (MMBF)			
Base Year*	10.5	10.5	10.5
Decade 1**	0	9.5	8.6
Decade 2	0	9.6	8.6
Decade 3	0	7.5	8.6
Decade 4	0	7.5	8.6
Decade 5	0	9.2	10.4
LONG TERM SUSTAINED YIELD			
(MMCF)	0	3.6	3.8
(MMBF)	0	23.2	24.8
GRAZING (M AUM)			
Base Year	41.4	41.4	41.4
Decade 1	2.4 ***	48.6	48.7
Decade 2	2.4	50.5	50.3
Decade 3	2.4	53.6	53.6
Decade 4	2.4	54.0	54.1
Decade 5	2.4	46.5	46.6
WATER YIELD (M Acre-Feet)			
Base Year	1093	1093	1093
Decade 1	1093	1101	1101
Decade 2	1093	1093	1093
Decade 3	1093	1093	1093
Decade 4	1093	1093	1093
Decade 5	1093	1093	1093
LAHONTAN CUTTHROAT TROUT (Threatened) (acres of stream habitat)			
Base Year	1	1	1
Decade 1	1	1	3
Decade 2	1	1	5
Decade 3	1	1	5
Decade 4	1	1	5
Decade 5	1	1	5
PAIUTE CUTTHROAT TROUT (Threatened) (acres of stream habitat)			
Base Year	3	3	3
Decade 1	3	3	13
Decade 2	3	3	18
Decade 3	3	3	18
Decade 4	3	3	18
Decade 5	3	3	18

* Base year is 1982
** Decade 1 is the period 1988-1997
*** Wild horses and burros

Benchmarks					
MKV	TBR	WLN	NON	RGN	H20
3159.8	3279.9	3475.7	3475.8	3460.7	3397.9
10.5	10.5	10.5	10.5	10.5	10.5
7.3	24.5	8.6	8.6	8.7	13.0
7.7	24.4	8.5	8.6	10.6	15.8
7.7	24.4	8.5	8.6	10.6	15.8
7.7	24.4	8.5	8.5	10.6	17.8
9.4	24.4	10.4	10.5	10.6	20.8
3.8	5.2	3.8	3.9	3.9	4.5
24.7	33.6	24.6	25.3	25.5	28.9
41.4	41.4	41.4	41.4	41.4	41.4
61.3	49.5	46.4	54.3	76.8	48.5
63.5	52.1	48.7	56.7	77.8	50.7
63.4	55.3	49.8	60.4	78.7	54.7
66.3	54.5	48.1	59.8	81.1	55.0
60.3	47.3	45.2	52.3	75.9	46.7
1093	1093	1093	1093	1093	1093
1093	1097	1101	1101	1101	1100
1093	1100	1093	1093	1093	1100
1095	1097	1093	1093	1093	1098
1095	1070	1093	1093	1093	1095
1093	1094	1093	1093	1093	1097
1	1	1	1	1	1
3	3	3	3	3	3
5	5	5	5	5	5
5	5	5	5	5	5
5	5	5	5	5	5
5	5	5	5	5	5
3	3	3	3	3	3
31	13	13	13	13	13
18	18	18	18	18	18
18	18	18	18	18	18
18	18	18	18	18	18
18	18	18	18	18	18

Table 2 (continued)
Average Annual Outputs by Decade for Benchmarks

Activity/Resource	Benchmarks		
	MLV	FLW	MMR
PEREGRINE FALCON (Endangered)			
(number of pairs)			
Base Year	0	0	0
Decade 1	0	0	2
Decade 2	0	0	2
Decade 3	0	0	2
Decade 4	0	0	2
Decade 5	0	0	2
BALD EAGLE (Endangered)			
(winter roosting areas)			
Base Year	1	1	1
Decade 1	1	1	1
Decade 2	1	1	1
Decade 3	1	1	1
Decade 4	1	1	1
Decade 5	1	1	1
MULE DEER			
(M animals)			
Base Year	12.0	12.0	12.0
Decade 1	12.6	11.9	11.9
Decade 2	13.0	11.6	11.6
Decade 3	13.3	11.1	11.1
Decade 4	13.7	10.7	10.7
Decade 5	14.1	10.3	10.3
SIERRA NEVADA MOUNTAIN SHEEP (number of animals)			
Base Year	300	300	300
Decade 1	330	350	350
Decade 2	360	400	400
Decade 3	390	450	450
Decade 4	420	500	500
Decade 5	450	550	550
NELSON MOUNTAIN SHEEP (number of animals)			
Base Year	130	130	130
Decade 1	130	140	140
Decade 2	130	154	154
Decade 3	130	154	154
Decade 4	130	154	154
Decade 5	130	154	154

Benchmarks					
MKV	TBR	WLN	NON	RGN	H2O
0	0	0	0	0	0
2	2	2	2	2	2
2	2	2	2	2	2
2	2	2	2	2	2
2	2	2	2	2	2
2	2	2	2	2	2
1	1	1	1	1	1
1	1	1	1	1	1
1	1	1	1	1	1
1	1	1	1	1	1
1	1	1	1	1	1
1	1	1	1	1	1
12.0	12.0	12.0	12.0	12.0	12.0
11.9	11.9	11.9	11.9	11.2	11.9
11.6	11.8	11.6	11.6	9.9	11.6
11.1	11.7	11.1	11.1	8.7	11.1
10.7	11.6	10.7	10.7	7.4	10.7
10.3	11.5	10.3	10.3	5.9	10.3
300	300	300	300	300	300
330	350	350	350	330	350
360	400	400	400	360	400
390	450	450	450	390	450
420	500	500	500	420	500
450	550	550	550	450	550
130	130	130	130	130	130
130	140	140	140	130	140
130	154	154	154	130	154
130	154	154	154	130	154
130	154	154	154	130	154
130	154	154	154	130	154

Table 2 (continued)
Average Annual Outputs by Decade for Benchmarks

Activity/Resource	Benchmarks		
	MLV	FLW	MMR
RESIDENT FISH (M Pounds)			
Base Year	1632	1632	1632
Decade 1	1632	1640	1640
Decade 2	1632	1649	1649
Decade 3	1632	1658	1658
Decade 4	1632	1667	1667
Decade 5	1632	1674	1674
GOSHAWKS (pairs in suitable timber)			
Base Year	15	15	15
Decade 1	15	12	14
Decade 2	15	9	13
Decade 3	15	6	12
Decade 4	15	3	11
Decade 5	15	0	9
TOTAL WILDLIFE & FISH USER DAYS (MWFUDs)			
MULE DEER			
Base Year	25.2	25.2	25.2
Decade 1	26.5	25.0	25.0
Decade 2	27.3	24.4	24.4
Decade 3	27.9	23.3	23.3
Decade 4	28.8	22.5	22.5
Decade 5	29.6	21.6	21.6
RESIDENT FISH			
Base Year	352.5	340.0	340.0
Decade 1	68.1	342.4	342.4
Decade 2	68.1	344.8	344.8
Decade 3	68.1	347.2	347.2
Decade 4	68.1	349.6	349.6
Decade 5	68.1	352.0	352.0
OTHER			
Base Year	25.8	25.8	25.8
Decade 1	5.1	26.9	26.9
Decade 2	5.1	2.0	32.0
Decade 3	5.1	37.1	37.1
Decade 4	5.1	41.3	41.3
Decade 5	5.1	49.2	49.2

Benchmarks					
MKV	TBR	WLN	NON	RGN	H20
1632	1632	1632	1632	1632	1632
1632	1640	1640	1640	1640	1640
1632	1649	1649	1649	1649	1649
1632	1658	1658	1658	1658	1658
1632	1667	1667	1667	1667	1667
1632	1674	1674	1674	1674	1674
15	15	15	15	15	15
14	14	14	14	14	14
13	13	13	13	13	13
12	12	12	12	12	12
11	11	11	11	11	11
9	9	9	9	9	9
25.2	25.2	25.2	25.2	25.2	25.2
25.0	25.0	25.0	25.0	23.5	25.0
24.4	24.8	24.4	24.4	20.8	24.4
23.3	24.6	23.3	23.3	18.3	23.3
22.5	24.4	22.5	22.5	15.5	22.5
21.6	24.1	21.6	21.6	12.4	21.6
352.5	340.0	340.0	340.0	340.0	340.0
98.0	342.4	342.4	342.4	342.4	342.4
98.0	344.8	344.8	344.8	344.8	344.8
98.0	347.2	347.2	347.2	347.2	347.2
98.0	349.6	349.6	349.6	349.6	349.6
98.0	352.0	352.0	352.0	352.0	352.0
25.8	25.8	25.8	25.8	25.8	25.8
19.7	26.9	26.9	26.9	26.9	26.9
20.5	32.0	32.0	32.0	32.0	32.0
21.7	37.2	34.2	38.5	38.5	36.7
22.6	41.9	38.3	40.9	43.3	42.6
24.0	49.6	43.7	48.3	44.5	49.4

Table 2 (continued)
Average Annual Outputs by Decade for Benchmarks

Activity/Resource	Benchmarks		
	MLV	FLW	MMR
DEVELOPED RECREATION (M RVDS)			
Base Year	2836	2836	2836
Decade 1	0	3686	3686
Decade 2	0	4673	4673
Decade 3	0	5383	5383
Decade 4	0	6143	6143
Decade 5	0	6272	6272
DISPERSED RECREATION (M RVDS)			
Base Year	1543	1543	1543
Decade 1	432	1852	1852
Decade 2	432	2524	2524
Decade 3	432	2910	2910
Decade 4	432	3086	3086
Decade 5	432	3268	3268
WILDERNESS (M Acres)			
Base Year	565.1	565.1	565.1
Decade 1	565.1	904.9	904.9
Decade 2	565.1	904.9	904.9
Decade 3	565.1	904.9	904.9
Decade 4	565.1	904.9	904.9
Decade 5	565.1	904.9	904.9
TOTAL COST (MM$)			
Base Year	10.3	10.3	10.3
Decade 1	2.2	12.8	12.8
Decade 2	2.2	14.7	13.6
Decade 3	2.2	15.6	14.7
Decade 4	2.2	15.5	16.5
Decade 5	2.2	17.9	18.3

Benchmarks					
MKV	TBR	WLN	NON	RGN	H20
2836	2836	2836	2836	2836	2836
3686	3686	3686	3686	3686	3686
4674	4672	4673	4673	4673	4673
5383	4690	5383	5383	5383	5383
6144	4708	6143	6143	6143	5517
6272	4756	6272	6272	6272	5634
1543	1543	1543	1543	1543	1543
1122	1834	1857	1828	1839	1840
1489	2500	2531	2493	2507	2508
1524	2889	2919	2862	2882	2892
1730	3050	3096	3020	3046	3069
1891	3260	3297	3213	3237	3246
565.1	565.1	565.1	565.1	565.1	565.1
565.1	891.0	1188.9	565.1	583.5	904.9
565.1	891.0	1188.9	565.1	583.5	904.9
565.1	891.0	1188.9	565.1	583.5	904.9
565.1	891.0	1188.9	565.1	583.5	904.9
565.1	891.0	1188.9	565.1	583.5	904.9
10.3	10.3	10.3	10.3	10.3	10.3
11.2	17.5	12.9	12.6	14.3	13.0
14.1	17.4	14.5	14.5	15.9	15.4
13.5	19.6	14.6	14.6	15.4	17.2
14.7	26.8	15.4	15.3	16.2	18.2
16.2	26.1	20.8	18.2	17.9	14.2

ALTERNATIVES ELIMINATED FROM DETAILED STUDY

INTRODUCTION

Of the eleven alternatives originally developed, six were chosen for more detailed study. The choice was made by evaluating each alternative in terms of three primary factors for each resource: outputs, key effects, and response to issues and concerns. The eleven original alternatives represent a range of outputs for each resource; the six chosen for detailed study were selected on the basis of their response to major issues and concerns, and their ability to meet at least Minimum Management Requirements, Minimum Implementation Requirements, Timber Policy Requirements and Forest-wide Standards and Guidelines described in the next section of this chapter. The outputs, treatment of issues and concerns, and environmental consequences represented by the alternatives studied in detail are displayed later in this chapter under the heading of Comparison of Alternatives.

Each of the alternatives eliminated from detailed study was analyzed to the point of describing a theme, goals, objectives, outputs, and key effects. The alternatives eliminated from detailed study and the primary reasons for their elimination are discussed briefly below. The outputs for eliminated alternatives are displayed in Table 3. The alternatives studied in detail are described later in this chapter.

INDIVIDUAL ALTERNATIVE DISCUSSION

1. Name: PRO

   Theme: The primary purpose of this alternative is to determine the ability of the Forest to meet the timber targets from the Region's high-productivity alternative as assigned to the Inyo National Forest.

   Reasons for Elimination: The analysis of this alternative indicated that the timber target could only be met by dropping the non-declining yield requirement. Without that requirement, timber harvest would drop to less than one-third of the base year level after the fifth decade for three decades. The timber harvest program itself would not meet minimal cost-efficiency criteria, as harvest costs would be greater than the value of the timber harvested. The production of range outputs would require domestic livestock to increase on key deer winter range, displacing deer. Wilderness recommendations would be lowest of all but the MKT alternative; only the Tioga Lake, Hall Natural, and Laurel-McGee areas (less than three percent of further planning acreage on the Forest) would be recommended for wilderness.

2. Name: LBU

   Theme: This alternative was analyzed to estimate the expected outputs and services that could be provided in the future if the 1982 budget were reduced by 25 percent.

Reasons for Elimination: Forest outputs would change noticeably if the budget were reduced and continued at reduced levels over an extended period of time. All recreation facilities would be maintained at low-standard levels, and dispersed recreation and wildlife-related outputs would fall below current levels of use. The result would be an unacceptable response to the primary public issue on the Inyo National Forest which is the quantity and quality of recreational opportunities. Grazing would drop significantly to less than a third of base year output levels, affecting the viability of many ranching operations dependent on the Forest for summer range. The PNV for this alternative would be the lowest of any alternative analyzed. The overall lack of responsiveness to major public issues disqualified this alternative from detailed study.

3. **Name:** WLI

Theme: Recommend a substantial amount of quality acreage for wilderness while maintaining or increasing commodity outputs through intensified management of lands outside wilderness.

Reasons for Elimination: As was shown in the benchmark analysis, further planning areas on the Forest have little potential for commodity production. The opportunity costs of increasing wilderness are noticeable only when maximizing individual resources.

As the Inyo does not have noticeable trade-offs between wilderness and commodity outputs, the need to offset such trade-offs by intensifying commodity management is adequately accomplished in the CEE alternative, which was studied in detail. CEE would realize 76 percent of the wilderness potential on the Forest in the most cost-effective combination, given the non-wilderness resource opportunities in further planning areas. CEE would also select the highest quality wilderness acreage in terms of wilderness recreation opportunities. WLI represents less livestock grazing and higher timber costs than CEE. This alternative would also reduce the land base available for intensive wildlife habitat management.

WLI, while following the guideline that most Further Planning acres on the Forest be recommended for wilderness, does not meet the criterion that those recommendations represent quality wilderness. Many of the acres recommended would be low-quality wilderness, in terms of both wilderness recreation and other wilderness values. In addition, WLI would recommend many acres for wilderness that represent high costs for trail and trailhead construction and for management of wilderness use.

AMN addresses the issue of recommending most Further Planning acres on the Forest for wilderness. This issue is studied in detail AMN emphasizes large wilderness acreage as part of a broader amenity emphasis. The desire for overall amenity-oriented management is more of a public issue on the Inyo than the separate issue of extensive wilderness acreage.

4. Name: MKT

Theme: This alternative emphasizes high level outputs of market resources (timber, range, developed recreation, and minerals). Non-market resources are produced at economically efficient levels. The alternative includes a timber target of 25 MMBF average annual harvest and a grazing target of 55,700 AUMs by the fifth decade.

Reasons for Elimination: This alternative, like PRO, could meet the timber target only by dropping the non-declining yield requirement. The 25 MMBF timber target could be met only if the timber volume were allowed to drop well below base year for three decades after the fifth decade. In order to meet the range target, deer would be displaced by domestic livestock grazing on key winter range. The wilderness recommendation would also be minimal, with only the Laurel McGee, Tioga Lake, and Hall Natural areas recommmended for wilderness.

5. Name: AMC

Theme: Maximize wilderness by recommending all Further Planning Areas for wilderness designation. Maintain current levels of market outputs while producing cost-effective levels of non-market outputs.

Reasons for elimination: This alternative would not respond to the management concern that all recommended wilderness meet basic criteria for suitability and manageability under wilderness designation. The cost of trails, supervision, and management would be higher than the public benefits provided.

In addition, management opportunities would be severely restricted, and valuable vehicle-based recreation and mineral opportunities would be foregone under wilderness designation. If all Further Planning Areas were recommended for designation, 62 percent of all Inyo Forest lands would be wilderness. As an additional 5 percent of Forest lands already have other restrictive special designations (e.g., Mono Basin National Forest Scenic Area, Ancient Bristlecone Pine Forest, Research Natural Areas), only 33 percent of the Forest would be available for the full range of management options. While current outputs could be maintained over the first five decades under this scenario, there would be very little opportunity for future management to change in response to changing public needs or environmental conditions. For these reasons, AMC was not considered a reasonable alternative to study in detail.

Table 3
Average Annual Outputs by Decade for
Alternatives Eliminated from Detailed Study

Activity/Resource	Alternatives				
	PRO	LBU	WLI	MKI	AMC
PNV (MM$)	3431	2383	3480	3464	3475
TIMBER (MMBF)					
Base Year*	10.5	10.5	10.5	10.5	10.5
Decade 1**	20.0	11.5	11.5	20.0	11.5
Decade 2	25.0	13.0	13.0	21.3	13.0
Decade 3	30.0	13.0	13.0	22.7	13.0
Decade 4	30.0	13.0	13.0	23.7	13.0
Decade 5	30.0	13.0	13.0	25.0	13.0
LONG TERM SUSTAINED YIELD					
(MMCF)	4.7	3.3	4.0	4.5	4.1
(MMBF)	30.8	21.4	26.1	29.4	26.5
GRAZING (M AUM)					
Base Year	41.4	41.4	41.4	41.4	41.4
Decade 1	46.4	18.9	46.0	50.9	38.1
Decade 2	55.9	16.4	47.5	57.6	41.3
Decade 3	59.7	11.8	50.4	61.8	41.7
Decade 4	58.3	11.5	50.7	60.3	41.9
Decade 5	55.7	11.1	43.5	55.7	40.0
WATER YIELD (M acre-feet)					
Base Year	1093	1093	1093	1093	1093
Decade 1	1106	1101	1101	1101	1101
Decade 2	1093	1093	1093	1093	1093
Decade 3	1097	1094	1093	1097	1093
Decade 4	1094	1097	1093	1093	1093
Decade 5	1093	1095	1093	1093	1093
LAHONTAN CUTTHROAT TROUT (Threatened) (acres of stream habitat)					
Base Year	1	1	1	1	1
Decade 1	3	3	3	3	3
Decade 2	5	5	5	5	5
Decade 3	5	5	5	5	5
Decade 4	5	5	5	5	5
Decade 5	5	5	5	5	5
PAIUTE CUTTHROAT TROUT (Threatened) (acres of stream habitat)					
Base Year	3	3	3	3	3
Decade 1	13	13	13	13	13
Decade 2	18	18	18	18	18
Decade 3	18	18	18	18	18
Decade 4	18	18	18	18	18
Decade 5	18	18	18	18	18

*Base year is 1982
**Decade 1 is the period 1988-1997

Table 3 (continued)
Average Annual Outputs by Decade for
Alternatives Eliminated from Detailed Study

Activity/Resource	Alternatives				
	PRO	LBU	WLI	MKI	AMC
PEREGRINE FALCON (Endangered) (number of pairs)					
Base Year	0	0	0	0	0
Decade 1	2	2	2	2	2
Decade 2	2	2	2	2	2
Decade 3	2	2	2	2	2
Decade 4	2	2	2	2	2
Decade 5	2	2	2	2	2
BALD EAGLE (Endangered) (winter roosting areas)					
Base Year	1	1	1	1	1
Decade 1	1	1	1	1	1
Decade 2	1	1	1	1	1
Decade 3	1	1	1	1	1
Decade 4	1	1	1	1	1
Decade 5	1	1	1	1	1
MULE DEER (M animals)					
Base Year	12.0	12.0	12.0	12.0	12.0
Decade 1	11.2	11.8	11.9	11.2	11.9
Decade 2	9.9	11.6	11.6	9.9	11.6
Decade 3	8.7	11.4	11.1	8.7	11.1
Decade 4	7.4	11.2	10.7	7.4	10.7
Decade 5	5.9	11.0	10.3	5.9	10.3
SIERRA NEVADA MOUNTAIN SHEEP (Number of animals)					
Base Year	300	300	300	300	300
Decade 1	350	350	350	330	350
Decade 2	400	400	400	360	400
Decade 3	450	450	450	390	450
Decade 4	500	500	500	420	500
Decade 5	550	550	550	450	550
NELSON MOUNTAIN SHEEP (Number of animals)					
Base Year	130	130	130	130	130
Decade 1	140	130	140	130	140
Decade 2	154	130	154	130	154
Decade 3	154	130	154	130	154
Decade 4	154	130	154	130	154
Decade 5	154	130	154	130	154
RESIDENT FISH (M pounds)					
Base Year	1632	1632	1632	1632	1632
Decade 1	1640	1632	1640	1640	1640
Decade 2	1649	1632	1649	1649	1649
Decade 3	1658	1632	1658	1658	1658
Decade 4	1667	1632	1667	1667	1667
Decade 5	1674	1632	1674	1674	1674

Table 3 (continued)
Average Annual Outputs by Decade for
Alternatives Eliminated from Detailed Study

Activity/Resource	Alternatives				
	PRO	LBU	WLI	MKI	AMC
GOSHAWKS (Pairs in suitable timber)					
Base Year	15	15	15	15	15
Decade 1	14	14	14	14	14
Decade 2	13	13	13	13	13
Decade 3	12	12	12	12	12
Decade 4	11	11	11	11	11
Decade 5	9	9	9	9	9
TOTAL WILDLIFE AND FISH USER DAYS (M WFUDs)					
MULE DEER					
Base Year	25.2	25.2	25.2	25.2	25.2
Decade 1	23.5	24.8	25.0	23.5	25.0
Decade 2	20.8	24.4	24.4	20.8	24.4
Decade 3	18.3	23.9	23.3	18.3	23.3
Decade 4	15.5	23.5	22.5	15.5	22.5
Decade 5	12.4	23.1	21.6	12.4	21.6
RESIDENT FISH--OTHER THAN T&E					
Base Year	340.0	340.0	340.0	340.0	340.0
Decade 1	342.4	342.4	342.4	342.4	342.4
Decade 2	344.8	344.8	344.8	344.8	344.8
Decade 3	347.2	347.2	347.2	347.2	347.2
Decade 4	349.6	349.6	349.6	349.6	349.6
Decade 5	352.0	352.0	352.0	352.0	352.0
OTHER					
Base Year	25.8	25.8	25.8	25.8	25.8
Decade 1	26.9	26.9	26.9	19.7	26.9
Decade 2	32.0	31.2	32.0	20.5	32.0
Decade 3	37.2	22.2	34.2	21.7	34.2
Decade 4	41.9	17.9	38.3	22.6	38.3
Decade 5	49.6	23.0	43.7	24.0	43.7
DEVELOPED RECREATION (M RVDS)					
Base Year	2836	2836	2836	2836	2836
Decade 1	3686	3049	3686	3686	3686
Decade 2	4673	3579	4673	4673	4673
Decade 3	5383	3846	5383	5383	5383
Decade 4	5933	3889	6143	6143	6143
Decade 5	6030	3988	6272	6272	6272

Table 3 (continued)
Average Annual Outputs by Decade for
Alternatives Eliminated from Detailed Study

Activity/Resource	Alternatives				
	PRO	LBU	WLI	MKI	AMC
WILDERNESS (M Acres)					
Base Year	565.1	565.1	565.1	565.1	565.1
Decade 1	580.4	672.5	1029.9	580.4	1188.9
Decade 2	580.4	672.5	1029.9	580.4	1188.9
Decade 3	580.4	672.5	1029.9	580.4	1188.9
Decade 4	580.4	672.5	1029.9	580.4	1188.9
Decade 5	580.4	672.5	1029.9	580.4	1188.9
TOTAL COST (MM$)					
Base Year	10.3	10.3	10.3	10.3	10.3
Decade 1	15.3	8.9	13.0	14.7	13.2
Decade 2	17.8	8.9	15.1	17.8	15.0
Decade 3	22.1	8.9	15.7	18.7	15.6
Decade 4	22.3	8.8	16.3	19.3	16.3
Decade 5	27.2	8.9	21.7	24.7	22.5

ALTERNATIVES CONSIDERED IN DETAIL

INTRODUCTION

The six alternatives selected for detailed study were developed more thoroughly in order to address specific issues, concerns, opportunities, and regulations. The theme and resource program direction for each alternative, by highlighting the main issues and concerns to be addressed, guided the development of assumptions and modeling guidelines to be used in the FORPLAN analysis for that alternative.

Average annual resource and activity outputs for each alternative were projected by decade through the fifth decade. A schedule of outputs over a 160-year period was also developed for each alternative studied in detail. Those long-range schedules are kept in the planning records. The 160-year analysis was necessary to ensure that timber harvest during the 50-year period would meet the long-term legal requirement of non-declining yield of wood products.

The following alternatives differ from one another in terms of issues and concerns addressed, resources and activities emphasized, total acres assigned to each management prescription, outputs produced, and environmental consequences. Comparative displays and discussions for the six alternatives studied in detail are found later in this chapter, under the heading Comparison of Alternatives.

DIRECTION COMMON TO ALL ALTERNATIVES

Planning alternatives are intended to explore a wide and varied range of options for managing a given National Forest. However, the range of alternatives is intended to be a reasonable one. A minimum set of management requirements are applied to all Forest planning alternatives for National Forests in the Pacific Southwest Region. These requirements fall into one of three categories: Minimum Management Requirements, Timber Policy Requirements, or Minimum Implementation Requirements. Forest Service Manual direction is also assumed to apply, but is not repeated here unless repetition is needed for emphasis.

Minimum Management Requirements (MMRs)

Requirements in this category represent the mandates of the National Forest Management Act and its implementing regulations (36 CFR 219.27). The following is a summary of MMRs:

1. Determination of Suitability for Timber Management

Lands will be considered suitable for timber management if:

- the land is forested and is currently producing or is capable of producing crops of industrial wood;
- the land has not been withdrawn from timber production by Congress, the Secretary of Agriculture, or the Chief of the Forest Service;
- technology and knowledge exist and are available to ensure timber production without irreversible damage to soil productivity or watershed conditions;
- existing technology and knowledge provide reasonable assurance that adequate restocking can be attained within five years of final harvest; and
- adequate information is available to project responses of the land to timber management activities.

2. Threatened and Endangered (T & E) Species

Habitat that is critical for the recovery of threatened and endangered species will be determined, and measures will be prescribed to prevent the destruction or adverse modification of such habitat. Critical habitat includes all currently occupied habitat and that potential habitat necessary to meet recovery.

The Inyo will provide nesting habitat for at least two pairs of endangered peregrine falcons; at least one winter roosting area for endangered bald eagles; and at least five miles of stream habitat for threatened Lahontan cutthroat trout. The Inyo may eventually provide habitat for Owens tui chub, a species listed in 1985 as endangered. A management plan for the threatened Paiute cutthroat trout is currently

being developed and will provide direction for management of this species.

3. **Viability of Wildlife Populations**

The maintenance of population viability for all native vertebrate species on the Forest is handled in Forest planning through the following concepts:

- Management Indicator Species (MIS) are used to represent the vegetation types, seral stages, and special habitat elements necessary to provide for all fish and wildlife species on the Forest, emphasizing those habitats most likely to be affected by management activities.

- The Wildlife and Fish Habitat Relationships (WFHR) Program, particularly the habitat capability models and special habitat criteria developed by each planning zone, is used to measure changes in wildlife populations.

4. **Goshawks**

Within goshawk habitat range, manage goshawk territories to maintain a density of at least one territory per eighteen square miles, amounting to nine in the tentatively suitable timber base. Distances between territories or clumps of territories will not normally exceed twelve miles.

Each territory will contain a minimum of 50 acres of habitat that provides suitable conditions for the nest stand and an alternate nest stand. Timber activities within occupied nest stands will be excluded during the nesting period. Timber activities during other time periods will meet the criteria for suitable habitat identified in the Forest habitat capability model for goshawks.

5. **Snag-dependent species**

To the extent possible, within each timber compartment provide, maintain, and manage for an average of 1.5 snags per acre: 1.2 per acre between 15-24 inches diameter at breast height (dbh) and more than 20 feet high; 0.3 per acre greater than 20 inches dbh and more than 20 feet high. This requirement represents approximately 40 percent of natural potential snag-dependent wildlife density.

6. **Dead, down logs**

Leave in place an average of one log per acre in the Jeffrey pine forest. In other coniferous forest types, leave in place an average of at least one log per acre that is at least 20 inches in diameter at the large end and 20 feet long. Give preference to sound logs.

7. **Diversity**

Maintain at least 5 percent of each timber type and 10 percent of each shrub type in each of the named seral stages. If any given seral stage-vegetation type combination currently represents less than the minimum required level, manage to achieve the required level as soon as possible within the next 50 years.

The following timber types, shrub types, and seral stages will be used to determine the MMR level of diversity. Diversity at the MMR level is measured Forest-wide.

Timber types: Jeffrey pine (eastside); red fir

Seral stages (first two decades):

1) grass/forb (with or without scattered shrubs and seedlings)

2) shrub/seedling/sapling (trees up to 20 feet high)

3A) pole/medium tree (20-50 ft. high, 0-39 percent canopy cover, substantial shrub layer);

3B&C) same as 3A except 40 percent or more canopy cover, variable shrub layer

4A) large tree, mature to overmature (most trees over 50 feet high, 0-39 percent canopy cover, substantial shrub layer)

4B&C) same as 4A except 40 percent or more canopy cover, variable shrub layer

4C) that component of 4B&C with 70 percent or more canopy cover and, possibly, evidence of decadence. Seral stages (after two decades): same as above except for the absence of 3A and 4A.

Shrub types: Big sagebrush, bitterbrush, mountain mahogany

Seral stages: early stage, middle stage, and late stage.

8. **Riparian Areas**

Apply no new management activities to riparian areas associated with lakes or perennial streams that would cause unacceptable long-term changes in water quality, aquatic flora and fauna, and/or hydrophytic vegetation within those areas. This requirement is described in more detail below in the Forest-wide Standards and Guidelines for fish, watershed, and riparian areas.

9. **Soil and Water Productivity**

Limit disturbance on those Forest lands characterized by slopes that exceed the natural angle of repose or have a very high erosion potential, or high levels of instability, to no more than 5 percent per decade.

Timber Policy Requirements (TPRs)

1. **Timber Harvest at CMAI.**

   Even-aged timber stands will be scheduled for harvest at or near Culmination of Mean Annual Increment (CMAI) of growth. CMAI is the turning point in the life of a tree after which its rate of growth begins to decline. Harvest at or near CMAI is intended to optimize wood production in a stand of timber.

   In addition to harvest at CMAI, a range of rotation ages or timing options will be analyzed for the management of present and future timber stands. This variety is a means of progressing toward the goal of managing commercial timber for optimum production while providing the variety of tree sizes needed for other values, such as scenic variety and wildlife habitat diversity.

2. **Long-term Sustained Yield**

   The timber harvest at the end of the planning horizon will meet the requirement of long-term sustained yield of wood products. This requirement assures that timber will be harvested at roughly the same rate as the Forest is growing new trees.

3. **Harvest Flow**

   If the policy of non-declining even flow is not applied, substitute the requirement that the amount of timber harvest be stable enough, from one decade to the next, to protect the stability of communities dependent on the timber industry.

4. **Dispersion**

   The dispersion policy requires that openings should not adjoin one another if their combined acreage would exceed Plan or Regional standards for maximum size of openings, and the timber between openings of similar age represent logical units for later harvest.

Minimum Implementation Requirements (MIRs)

Requirements in this category, although not legally mandated, are considered necessary to ensure a minimum level of public acceptance.

1. Manage sensitive plants to ensure that species do not become threatened or endangered because of Forest Service actions.

2. Maintain the foregrounds and middlegrounds of scenic corridors of officially designated state and county scenic highways and California State Scenic Highway System routes identified in the September 1970 Master Plan to meet or exceed the Visual Quality Objective of Partial Retention. Those routes on the Inyo National Forest are:

   - U.S 395
   - California Highway 120 (west of U.S. 395)

- State Highway 158 (June Lake Loop)
- State Highway 203 (to Minaret Summit)
- State Highway 168 (west of Bishop)
- State Highway 168 (east of Westgard Pass).

3. Forests may impose a technical or operational constraint on the maximum total acres of clearcut on the Forest in any one time period. The Inyo has not chosen to impose such a constraint.

Regional Herbicide Direction

The Pacific Southwest Region of the Forest Service is currently preparing an Environmental Impact Statement (EIS) analyzing Vegetation Management for Reforestation on National Forests in the Region. That EIS includes a detailed analysis of alternative approaches to the treatment of undesirable vegetation in competition with young trees.

The Preferred Alternative will be to continue with the current policy of considering the full range of vegetation management options, making specific decisions on a case-by-case basis. Herbicides have not been used on the Forest for eight years. Herbicides are not currently considered necessary to meet planned timber targets in the Jeffrey and lodgepole pine types east of U.S. 395, nor would their use increase growth rates. Competing vegetation on the Forest is typically low-growing relatively sparse grasses and brush that has been effectively and economically dealt with through a combination of mulches and hand releases.

Herbicides are not planned for use in the vegetative management of plantations during this planning period. Changes in this position would be made only after completion of the Region 5 Vegetation Management EIS, and comapletion of appropriate site-specific environmental analysis.

Forest Requirements Common to All Alternatives

This category includes any management requirements incorporated in the FORPLAN model by the Forest for the analysis of all Forest alternatives. Forest requirements are intended to ensure implementability of alternatives at the local level. As such, they are based on local (rather than Regional) conditions. The Inyo did not develop any such requirements. Requirements specific to individual alternatives are discussed in Appendix B.

Forest-wide Standards and Guidelines Common to All Alternatives

The following is a summary of the Forest-wide Standards and Guidelines that would apply under any alternative (except, in some cases, the Current "No-Action" Alternative). Detailed treatment of these Standards and Guidelines (with the addition of those unique to the Preferred Alternative) is found in Chapter IV of the Plan. The following summary emphasizes those points that respond to public issues and management concerns.

Air Quality

Meet or exceed all applicable state and federal regulations.

Cultural Resources

Consult with local American Indian groups when conducting environmental analyses for project work.

Identify the types of data and research efforts needed to develop more efficient inventory, evaluation, protection, and compliance processing. Encourage and support in-Service and private sector efforts to address these needs. Develop and implement appropriate management plans and strategies.

Maintain the confidentiality of cultural resource site locations.

Avoid cultural resource damage during fire suppression activities, and provide protection for known cultural resource values.

Develop, implement, and monitor protection plans for Class I properties (those eligible for the National Register) and vandalized properties.

Energy (for geothermal, see Minerals)

Encourage energy development commensurate with other National Forest goals, objectives, and management direction for the affected lands.

Assure that energy conservation practices are applied to National Forest management programs.

Facilities

Provide additions to the transporation system for resource development and provide public access to public land and developed recreation sites in a manner consistent with the overall management objectives for the land served.

Reconstruct or close road segments or regulate traffic as needed for public safety and resource protection.

Maintain facilities to assigned standards, make them energy efficient, and/or replace them if necessary.

Schedule facilities maintenance and replacement according the to following priorities: (1) correct health and safety items, (2) perform recurrent annual maintenance, (3) eliminate maintenance backlogs, (4) replace, rehabilitate, or refurbish condemned facilities, (5) provide new facilities where needed.

Consider mass transit options when vehicle use exceeds the capacity of existing roads or threatens to damage resource values.

Develop a materials development and management plan for rock and earth construction materials.

Provide trails for hikers, skiers, equestrians, bicyclists, snowmobilers, the handicapped, and off-road vehicle users where compatible with user

needs, overall development levels, and management objectives for the area served.

Maintain trails to assigned maintenance levels.

Separate incompatible trail uses where feasible.

Fish

Maintain and rehabilitate essential habitat for threatened Lahontan cutthroat trout according to the species recovery plan and Memorandum of Understanding with the U.S. Fish and Wildlife Service.

Provide high-quality habitat for threatened trout, and medium- to high-quality habitat for other resident fish, emphasizing the control of sedimentation and maintenance or enhancement of riparian vegetation.

Prohibit stream-modifying construction activities during the spawning seasons for resident fish in the affected stream.

Design road and trail stream crossings on streams with active or potential fisheries to accommodate fish passage.

Maintain instream flows needed to support resident fisheries, and lake and reservoir levels needed to support existing fisheries.

Geology

Locate and design facilities to avoid or withstand seismic, landslide, and volcanic processes affecting life or property, or ensure that the risks from such processes have been considered.

Lands

Apply the following priorities when acquiring non-federal land: (1) lands with water frontage, key wildlife or sensitive plant habitat, outdoor recreation or aesthetic values, access value, unique historical or cultural resources, or lands within wilderness; (2) lands needed to protect resource values by eliminating or reducing fire risk, soil erosion, or illegal occupancy; or lands needed to lower administrative costs by eliminating title claims; (3) lands needed to block in or consolidate existing National Forest lands.

Apply the following priorities when disposing of federal land: (1) tracts inside of or adjacent to communities when such tracts would be used for public purposes, such as affordable housing; (2) small federal parcels that are intermingled with nonfederal lands; (3) lands under special-use permit and occupied by substantial structural improvements.

Consolidate public utility rights-of-way to reduce impacts on other resources.

Bury new or reconstructed power distribution lines (33KV or less) and telephone lines, unless burying would cause unacceptable environmental

damage or unless overhead lines would be desirable to mitigate seismic hazards.

Consider future needs for additional utility lines parallel to the north-south interstate Pacific DC Intertie transmission line when setting management direction for affected lands.

Issue special-use permits only if private land suitable for the use is not reasonably available and if the use is compatible with established management objectives for affected National Forest lands.

Apply the following priorities when evaluating special-use permit applications: (1) public uses, (2) semi-public uses, (3) individual (exclusive) uses.

Recommend the revocation of existing power, mineral, water, and other withdrawals where the needed restrictions can be accomplished administratively or where the need for the withdrawal no longer exists. Initiate new withdrawals only when other use and occupancy controls cannot adequately protect surface resources.

Minerals

Encourage the leasing of National Forest lands for exploration and development of oil, gas, and geothermal resources as long as those activities are compatible with the National Forest goals, objectives, and management direction for the affected lands.

Consider all National Forest lands not specifically withdrawn from mineral entry available for mineral exploration, location, extraction, or leasing under applicable laws and regulations.

Manage mineral activities to minimize adverse impacts on surface resources.

Provide for the disposal of common variety minerals where such action (including access) will not cause unacceptable damage to surface resources.

Pest Management

Apply an Integrated Pest Management (IPM) approach during the planning and implementation of all appropriate activities, particularly those that influence vegetation. Under the IPM approach, a full range of pest management alternatives will be considered and analyzed on a site-specific basis.

Protection

Use the appropriate wildfire suppression strategy based on management prescription and management area direction.

Use prescribed fire as a management tool.

Range

Manage livestock grazing to avoid unacceptable damage to soil, water quality, and fish and wildlife habitat. Address riparian area objectives in allotment management plans. Adopt management practices that minimize adverse impacts on these areas.

Recreation

Recreation Residences

Continue all recreation residence special use permits unless a future use determination identifies a higher public need.

Schedule future use determinations for recreation residences in advance of the termination dates of permits in order to allow sufficient time for public input.

Developed Recreation

Construct and maintain facilities and sites to Regional standards.

Dispersed Recreation

Coordinate with other agencies for the development and maintenance needed to provide parking for OHV (Off-highway Vehicle) snow play and nordic skiing.

Interpretive Services

Develop programs, displays, and publications to interpret Forest resource management and the natural environment. Maximize the use of self-service information facilities.

Off-highway Vehicles

Design OHV trails and open areas to minimize conflicts with existing or potential developed recreation sites, private property, special uses, adjacent wilderness, administrative areas, cultural resources, and riparian areas.

Coordinate Forest off-highway vehicle planning and funding with federal, state, and local agencies, private landowners and the public.

Research Natural Areas

Inventory geologic RNA (Research Natural Area) candidates as a component of the Regional RNA program.

Complete the establishment process for recommended botanical RNAs.

Riparian Areas

Protect streams, streambanks, shorelines, lakes, wetlands, and the plants and animals dependent on these features. Prevent unacceptable, long-term changes in water temperature, chemistry, sedimentation, and channel blockages associated with riparian areas.

Rehabilitate or fence riparian areas that consistently show resource damage or abuse if conflicts cannot be resolved otherwise.

Maintain instream flows needed to support the existing riparian ecosystem.

Prohibit the location of new roads, campsites, and similar disturbances inside the borders of riparian areas unless absolutely necessary and impacts can be mitigated. Relocate existing roads and campsites outside riparian areas where necessary and feasible.

Limit wildfire control and rehabilitation methods and activities that would adversely impact riparian areas.

Special Interest Areas

Evaluate and recommend candidate Special Interest Areas for designation, and evaluate and nominate candidates for National Natural Landmarks (NNL) listing.

Manage the existing Ancient Bristlecone Pine Forest Botanical Area under the approved management plan.

Timber

Allow openings created by regeneration harvest to border natural openings if other resource values are protected. Locate and design openings with consideration for the surrounding landscape.

Schedule artificial regeneration within three years of clearcutting.

Emphasize maximum road spacing when planning timber sales.

Conduct logging and construction so that debris does not enter stream channels or cause watershed damage.

Limit the size of tree openings created by even-aged silviculture to 40 acres or less.

Apply the guideline that a harvested area will no longer be considered an opening for timber management purposes when the prescribed forest tree stocking density is met with trees 4.5 feet tall.

Visual Resources

Obtain Forest Supervisor's approval through the NEPA (National Environmental Policy Act) process for any deviation from assigned VQOs (Visual Quality Objectives).

Rehabilitate and/or enhance the visual resource, where appropriate, when implementing projects.

Watershed

Soils

Use earth-retaining structures or other special methods as needed in areas with high potential for landslides.

Make a slope suitability examination before constructing permanent developments in unstable areas.

Conserve the surface mineral and/or surface organic layer of the soil to maintain long-term productivity.

Water

Maintain or improve water quality to meet federal and state standards.

Implement Best Management Practices (BMPs) 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 during project level environmental assessments and incorporated into the associated project plan and implementation documents.

Preclude channelization of natural streams.

Maintain instream flows needed to maintain stream channel competence.

Conduct construction activities to avoid sedimentation in the aquatic zone.

Manage all stream reaches to maintain or improve streambank stability, emphasizing streams in municipal watersheds.

Locate roads and trails on natural benches or ridges well away from stream courses and other water bodies where possible. Avoid constructing roads or trails that parallel or cross tributaries of a main stream.

Protect the streambed both upstream and downstream from each road, trail, and livestock crossing that has neither a bridge nor a culvert.

Revegetate roads and trails when use is terminated.

Wild and Scenic Rivers

Undertake no management activities that would preclude designation of the Middle Fork of the San Joaquin River as a Wild and Scenic River.

Wilderness

Incorporate existing wilderness management plans (amending as necessary to accommodate 1984 wilderness additions) for the John Muir, Ansel Adams (formerly Minarets), Hoover, and Golden Trout Wildernesses.

Develop new wilderness management plans for the South Sierra Wilderness and any other new wildernesses designated by Congress during the planning period.

Wildlife

Threatened, Endangered, and Sensitive Plant and Animal Species

Evaluate management actions in threatened and endangered (T & E) species habitat. Submit proposals for any activities that might affect the viability of these species to the U.S. Fish and Wildlife Service for formal consultation.

Cooperate with the Fish and Wildlife Service and the California Department of Fish and Game in the management of T & E species and the restoration of habitat.

Develop and implement a consistent, systematic, biologically sound strategy to manage sensitive species and their habitats so that federal listing is not eventually required.

Develop and implement a Forest sensitive plant program plan.

Permit scientific studies on sensitive species only if the studies would benefit the species.

Management Indicator Species

Mule deer (harvest): Consider key winter range, fawning areas, migration routes, and holding areas when managing mule deer habitat on the Forest.

Bald eagle (endangered): Manage bald eagle habitat for recovery of the species. Maintain the integrity of the identified winter roosting area on the Forest. Do not establish new winter uses or recreation developments within 0.25 mile of that area.

Golden eagle and prairie falcon (special interest): Maintain and enhance the integrity of nesting habitat for these species.

Peregrine falcon (endangered): Implement the peregrine falcon recovery plan, providing for at least two nesting pairs of reintroduced birds.

Goshawk (sensitive): Wherever possible, locate territories in unsuitable timber as long as high quality habitat can be found there. Develop a goshawk habitat management plan.

Blue grouse (harvest): Maintain viability by implementing MMRs for diversity and riparian areas.

Sage grouse (harvest): Maintain the integrity of sage grouse habitat.

Sierra Nevada mountain sheep (sensitive) and Nelson mountain sheep (special interest): Maintain the integrity of existing habitat; do not increase livestock or introduce pack stock trails into such habitat. Consider reintroduction of sheep into suitable unoccupied habitat on a case-by-case basis.

Great gray owl (sensitive): Inventory potential habitat between February 1 and August 31 to determine the suitability of Inyo National Forest habitats for this species.

Spotted owl (sensitive): Inventory potential habitat between March 1 and July 30 to determine the suitability of habitats on the Forest for this species. If nesting spotted owls are found, manage their habitat as needed to maintain their natural distribution on the Forest.

MANAGEMENT PRESCRIPTIONS AND MANAGEMENT AREAS

INTRODUCTION

A Management Prescription sets forth the management direction by element or activity that applies to specific types of land within the Forest. Eighteen Management Prescriptions have been developed for the Inyo National Forest. Each Management Prescription identifies one or more resources for primary emphasis, describes the management of the emphasized resource(s), and establishes guidance for all other resources and activities so that they are compatible with the primary emphasis. Since they apply to types of land, and since similar types of land occur on different parts of the Forest, a given Management Prescription typically applies to a number of separate land units.

For mapping and display purposes, the Forest has been divided into twenty geographically identifiable areas called Management Areas. Each Management Area may include lands managed under two or more Management Prescriptions. For a description and map of Management Areas see the accompanying Plan.

Management Area boundaries are the same for all alternatives. Management Prescriptions, on the other hand, may be applied to different lands under different alternatives, depending on the goals and objectives of the alternative.

Forest resource outputs for each alternative are derived, for the most part, from the FORPLAN computerized linear program. The FORPLAN program schedules resource management activities on specific types of land and projects

resource outputs over a 50-year horizon. The management activities that provide input to FORPLAN are called FORPLAN prescriptions.

FORPLAN prescriptions and Management Prescriptions are related to one other, but they are not identical. Each Management Prescription addresses the entire range of resources, whereas each FORPLAN prescription addresses only the single resource for which activities are prescribed and outputs are generated. Management Prescriptions are allocated to large, diverse land types; FORPLAN prescriptions are applied to more distinct, narrowly-defined land and vegetation types. The following is a summary of Inyo National Forest Management Prescriptions. For a more detailed description of Management Prescriptions, see Chapter IV of the Plan; for a discussion of FORPLAN prescriptions, see Appendix B of this document.

SUMMARY OF MANAGEMENT PRESCRIPTIONS

1. <u>Designated Wilderness</u>

   Description: Emphasizes the protection of wild lands and wilderness values. Applies to wilderness lands that have been designated by Congress.

   Direction: Manage all resources so that they are harmonious with the wilderness values of natural ecological integrity, natural appearance, solitude, and primitive recreation. Regulate the amount and type of recreation use; limit the kind and amount of structural improvement; limit disruptions of natural ecological processes, allow for non-wilderness activities such as mining, grazing, and access to private land to the extent provided for by legislation and federal laws. Apply the Preservation Visual Quality Objective (VQO). Maintain the Primitive and Semi-Primitive Non-Motorized Recreation Opportunity Spectrum (ROS) classes. Apply the confinement or containment wildfire suppression strategies to natural fires unless human life, property, or valuable resources are endangered.

2. <u>Proposed Wilderness</u>

   Description: Emphasizes the protection of wilderness values while providing for traditional uses of the affected area until Congress designates the area wilderness or it is released through further administrative review or by Congress. Apply Management Prescription #1 immediately upon designation. Applies to all Further Planning Areas recommended for wilderness under a given alternative.

   Direction: Allow no construction of new facilities or authorization of new uses; allow for existing facilities and uses to the extent compatible with the protection of wilderness values. Apply the Preservation VQO. Maintain Primitive or Semi-Primitive ROS Classes. Apply the confinement or containment wildfire suppression strategies to natural fires unless human life, property, or valuable resources are endangered.

3. Mountain Sheep Habitat

Description: Emphasizes high quality habitat for Sierra Nevada and Nelson mountain sheep to maintain or increase population levels. Applies to the suitable mountain sheep habitat that is managed in a given alternative.

Direction: Prohibit or modify activities that would conflict with mountain sheep habitat objectives. Such activities include road and trail construction, domestic livestock grazing, and recreation use. Apply the Retention VQO. Maintain Primitive or Semi-Primitive ROS Classes. Apply the confinement or containment wildfire suppression strategies to natural fires unless human life, property, or valuable resources are endangered.

4. Mule Deer Habitat

Description: Preserve or enhance key mule deer habitat to maintain or increase population levels. Applies to suitable winter range, summer range, fawning areas, and/or holding areas managed with a mule deer management emphasis under an alternative.

Direction: Prohibit or modify activities that would conflict with mule deer habitat objectives. Such activities include domestic livestock grazing and vehicle access. Enhance mule deer habitat by such activities as browse release, improvement of cover-to-forage ratios, and improvement of cover in fawning areas. Apply the Partial Retention VQO. Allow those activities acceptable under the Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized and Roaded Natural ROS classes. Apply the confinement or containment wildfire suppression strategies to natural fires unless human life, property, or valuable resources are endangered.

5. Research Natural Area

Description: Maintain the ecological integrity of target vegetation types with an emphasis on research, study, and observation. Applies to the five established and two recommended Research Natural Areas on the Forest.

Direction: Provide for non-manipulative and non-destructive academic and scientific uses. Prohibit or limit activities or uses that would affect natural ecological processes. Such activities include facility (including road and trail) construction, recreation, livestock grazing, vehicle access, fish stocking, and fuelwood gathering. Apply the Preservation VQO and maintain the Primitive ROS Class. Control any wildfires originating outside the Roaded Natural Areas that pose a threat to the area. Apply the confinement or containment suppression strategies to natural fires originating within the Roaded Natural Areas unless persons, property, or the unique values of the Roaded Natural Areas are threatened.

6. Mono Basin National Forest Scenic Area

Description: Provide for recreational enjoyment, interpretation, and protection of the natural scenic features of the Mono Basin. This applies to the Mono Basin National Forest Scenic Area established by Congress in 1984.

Direction: Develop a management plan for the Mono Basin Scenic Area as directed by the California Wilderness Act of 1984. Until completion of the management plan, follow the direction in the 1985 Interim Management Plan.

7. Ancient Bristlecone Pine Forest

Description: Provide for public enjoyment, scientific study, and protection of ancient bristlecone pines in a near-natural setting. Applies to the Ancient Bristlecone Pine Forest established administratively in 1958.

Direction: Allow recreational day-use and interpretive facilities and uses and academic and scientific activities that cause no noticeable degradation. Prohibit or modify any activities that could conflict with the protection and preservation of bristlecone pine trees and wood remnants. Such activities include overnight camping, OHV use, energy or mineral activities, road or trail construction, private land uses, wildfire suppression, and fuelwood gathering. Apply the Retention VQO except where a lower VQO is needed to provide public use facilities. Allow those activities included in the Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized, and Roaded Natural ROS classes. Apply the confinement or containment wildfire suppression strategies to natural fires unless human life, property, or valuable resources are endangered.

8. Wild and Scenic Rivers

Description: Maintain the Middle Fork of the San Joaquin River in a free-flowing condition and emphasize scenic, recreational, geologic, fish, wildlife, vegetation, and cultural values for public enjoyment. Applies to a strip of land extending an average of 0.25 mile from each bank (unless and until it is released for other uses).

Direction: Prohibit or modify any activities that would adversely affect the values protected by the recommended designation. Such activities include hydroelectric development, camping, vehicle access, facility (including road) construction, mineral activities, and timber harvest. Apply the Partial Retention VQO. Allow those activities included in the Primitive, Semi-Primitive Non-Motorized, and Roaded Natural ROS classes. (Only Primitive and Semi-Primitive Non-Motorized for "wild" segments.) Control all wildfires in scenic and recreation segments. On "wild" segments, apply the confinement or containment wildfire suppression strategies to natural fires unless human life, property, or valuable resources are endangered.

9. Uneven-aged Timber Management

Description: Emphasize the production of sawlogs and other wood products on suitable timber lands, using methods that maintain other resource options for the future. Applies to lands on which timber management is emphasized, but on which other resource values are such that modification of high level timber management strategies is warranted.

Direction: Apply timber management strategies that do not preclude future management options for resources other than timber. The following criteria apply:

- at least three age class in the stand;
- each age class comprises at least 10 percent of the basal area of the stand;
- at least twenty years between age classes;
- one class in the upper third at the end of the rotation period;
- openings up to two acres in size--up to five acres where terrain, stand characteristics, operational factors, or non-timber resource objectives make this necessary,
  product objective is large-diameter (~24" sawtimber).

Favor site preparation methods that are most compatible with other resources. Apply the Partial Retention VQO. Provide for recreation activities in the Semi-Primitive Motorized and Roaded Natural ROS classes. Control all wildfires.

10. High Level Timber Management

Description: Emphasize the maximum production of sawlogs and other wood products, assuming that timber management will be the primary long-term management emphasis for the lands involved. Applies to all suitable timber lands managed with a long-term timber management emphasis under an alternative. Any included pockets of unsuitable timber or unforested land would be managed for uses compatible with timber management on the surrounding suitable timber lands.

Direction: Apply those timber management strategies that maximize long-term timber production. Manage all other resources at levels compatible with timber management objectives. Examples of resources for which management would be modified are domestic livestock grazing and developed recreation. Apply VQOs as inventoried. Provide for recreation activities in the Semi-Primitive Motorized and Roaded Natural ROS classes. Control all wildfires.

11. Range

Description: Manage range forage to provide for long-term sustained yield of domestic grazing outputs, increased forage production, and uniform livestock distribution. Applies to all suitable rangelands managed with a primary range emphasis under an alternative.

Direction: Rejuvenate and/or type-convert suitable vegetation types as needed to improve range condition or to maintain or increase forage

production. Construct, maintain, and replace structural improvements as needed to distribute livestock. Modify other management activities as needed to accommodate grazing. Apply the Partial Retention VQO. Allow for activities in the Semi-Primitive Non-Motorized, Semi-Primitive Motorized, and Roaded Natural ROS classes. Apply the confinement or containment wildfire suppression strategies to natural fires unless human life, property, or valuable resources are endangered.

12. Concentrated Recreation Area

Description: Emphasize the maintenance and enhancement of major recreational values and opportunities. Applies to areas with high levels of existing or potential recreation use that are managed with a recreation emphasis under an alternative.

Direction: Provide a broad range of recreational facilities and opportunities to accommodate large numbers of people safely, conveniently, and with minimal resource damage. Modify other management activities to minimize conflicts with recreation values. These include vegetation management (including timber harvest), energy development, livestock grazing, and any activity that would reduce scenic quality. Apply the Retention VQO to all management activities and new non-recreation facilities, and Partial Retention to all other facilities. Maintain the Roaded Natural, Roaded Modified, and Rural ROS classes. Control all wildfires.

13. Alpine Ski Area, Existing and Under Study

Description: Manage ski areas for public enjoyment. Applies to all lands managed under permit for alpine skiing.

Direction: Develop the facilities (including runs, lifts, base lodges, etc.) necessary to provide for skier enjoyment. Locate and design facilities to ensure public safety and to blend in with the natural environment. Exclude or modify other resource objectives and activities where necessary to provide for alpine skiing. Such objectives and activities include timber harvest, developed recreation, public vehicle access, mineral activities, and inventoried Visual Quality Objectives. Apply the Partial Retention VQO to runs, lifts, and base areas as seen in the middleground from Sensitivity Level 1 routes and occupancy sites. Allow activities appropriate in the Rural ROS class. Control all wildfires.

14. Potential Alpine Ski Area

Description: Maintain the potential for ski area development. Applies to those areas of the Forest that represent downhill skiing opportunities of the highest quality and are identified under an alternative as potential ski areas. When an alpine ski area is developed, it will be managed under the prescription for Alpine Ski Area, Existing and Under Study.

Direction: Maintain the integrity of potential downhill ski runs and base station locations. Manage other resources to the degree

commensurate with maintaining alpine ski development potential. The other resources and activities most likely to be affected are timber management, road construction, summer recreation development, land uses under special use permit, and mineral activities. Timber management will follow the same direction as that found in the Uneven-aged Timber Management Prescription. Meet inventoried VQOs. Allow the activities appropriate in Semi-Primitive Non-Motorized, Semi-Primitive Motorized, and Roaded Natural ROS classes. Control all wildfires.

15. Developed Recreation Site

Description: Manage developed recreational facilities to provide necessary user services and to protect forest resource values. Applies to publicly and privately operated developed summer recreation sites.

Direction: Develop recreation sites to the extent consistent with the type and amount of recreation occurring on surrounding lands. Encourage the year-round use of facilities where winter use is not limited by the need to shut down water or sanitation facilities; regulate vehicle use to protect resources; locate and design developments to minimize impacts on soil, water, vegetation, and scenic quality. Prohibit or modify management activities to minimize conflicts with recreational values. Such activities include energy developments, mineral activities, livestock grazing, and timber harvest. Apply the Retention VQO to foreground zones and Partial Retention to facilities seen as middleground from Sensitivity Level 1 routes and occupancy sites. Maintain the Semi-Primitive Motorized, Roaded Natural, Roaded Modified and Rural ROS classes. Control all wildfires.

16. Dispersed Recreation

Description: Provide opportunities for a wide range of dispersed recreation activities for both winter and summer use.

Direction: Manage the area for the public enjoyment of both summer and winter dispersed recreation activities. Emphasize non-motorized winter use such as nordic skiing and snowplay. Provide for centralized parking and trailheads. Provide for protection of the visual resource during winter months for nordic skiiers. Reroute nordic trails if necessary.

17. Semi-Primitive Recreation

Description: Protect and maintain recreation and wildlife values by limiting vehicle access and road construction. Applies to those relatively unroaded lands on the Forest managed with an emphasis on dispersed recreation, wildlife, and/or other amenity values.

Direction: Allow no construction of new public two-wheel drive roads or upgrading of existing four-wheel drive roads except for mineral activities. Close new mining roads to public access and obliterate when use ends. Allow other resource management activities to the extent compatible with the amenity emphasis. Modify timber management; allow range and wildlife habitat manipulation; allow four-wheel drive and OHV recreation on established routes where compatible with resource

protection. Apply the Partial Retention VQO. Maintain Primitive, Semi-Primitive Non-Motorized, and Semi-Primitive Motorized ROS classes. Apply the confinement or containment wildfire suppression strategies to natural fires unless human life, property, or valuable resources are endangered.

18. Multiple Resource Area

Description: Allow for ease of access for resource management, mineral activity, and/or vehicle-based recreation use. Applies to lands managed for multiple use and ease of access.

Direction: Allow for the construction of new public two-wheel drive roads or upgrading of four-wheel drive roads. Meet VQOs as inventoried on lands in the Roaded Natural ROS class. Apply Partial Retention to lands in the Semi-Primitive Non-Motorized and Semi-Primitive Motorized ROS classes. Maintain the Semi-Primitive Motorized and Roaded Natural ROS classes. Apply the confinement or containment wildfire suppression strategies to natural fires unless human life, property or valuable resources are endangered.

MANAGEMENT PRESCRIPTIONS THAT ARE AREA-SPECIFIC IN ALL ALTERNATIVES

Five of these Management Prescriptions are applied to the same land area in each alternative. They are Designated Wilderness (#1), Research Natural Area (#5), Mono Basin National Forest Scenic Area (#6), Ancient Bristlecone Pine Forest (#7), and Wild and Scenic River (#8).

This pre-allocation of Management Prescriptions is based on decisions that have been made outside of this planning process. Existing wilderness on the Forest and the Scenic Area have been designated by Congress in one of three separate acts: the Wilderness Act of 1964, the Endangered American Wilderness Act of 1978, or the California Wilderness Act of 1984.

The Ancient Bristlecone Pine Forest and the five established Research Natural Areas (RNAs) were administratively established between 1932 and 1983. The two recommended RNAs (Whippoorwill Flat and McAfee Meadow) have been studied and were determined to be acceptable by both the Forest and the Region 5 RNA Committee many years ago. As the recommended RNAs do not contain lands with other resource management opportunities, the Forest has chosen to apply the Roaded Natural Area prescription to recommended RNAs in all altenatives.

Since publication of the Draft Plan, Congress has designated both the North Fork and South Fork of the Kern River as Wild and Scenic Rivers. Leadership for the study of the Middle Fork of the San Joaquin River for wild and scenic status is the responsibility of the Sierra National Forest. The Inyo National Forest provided data for the analysis and shares responsibility with the Sierra for the recommendation to Congress.

OTHER DIRECTION COMMON TO ALL ALTERNATIVES

Geothermal energy exploration and development are governed by site-specific analyses conducted outside this planning process. Those geothermal decisions

that have already been made are common to all alternatives. Leases have been offered and will continue to be offered in Lease Blocks I and II of the Mono-Long Valley KGRA. There will, however, be no geothermal leasing in the Monache Meadows area of the Kern Plateau.

ALTERNATIVE DESCRIPTIONS

INTRODUCTION

The following are narrative descriptions of the six alternatives studied in detail. These alternatives are presented in the following sequence.

PRF: Preferred Alternative

CUR: Current (1982) Program - No Action

RPA: 1980 RPA Program

CEE: Maximize Cost-efficiency

AMN: Maximize All Amenities

AMB: Emphasize Wildlife and Recreation

Each alternative description includes a narrative and a set of figures. Each narrative has three sections: Theme (goals, objectives, issues and concerns addressed); Resource Program Direction (key activities, standards and guidelines); and Environment to Be Created in 2030 (a broad view of the Forest as it would appear to the visitor if the alternative were implemented). The resource program direction in the alternative narrative does not, in most cases, repeat the direction common to all alternatives described above. For those few cases in which such direction is repeated, the repetition is included with the intention of emphasis.

The alternatives on the following pages include resource program direction that is projected over the fifty year analytical horizon of the Forest planning process. However, any of the alternatives, if selected, would represent a set of management decisions affecting only the first ten to fifteen years of that horizon. The plan period is defined by the NFMA regulations as one decade [36 CFR 219.3 (1982)], while the law permits a fifteen-year maximum [16 USC 1604(f)(5)]. Within ten to fifteen years, conditions on the Forest will be reanalyzed, and a revised plan developed [36 CFR 219.10(g)(1982) and 16 ISC 1604(f)(5)].

Management actions, outputs, and environmental and socioeconomic effects are projected for several decades beyond the plan period. The purpose of these discussions is twofold. They present a long-term analysis for decision makers and for the public to use in evaluating alternatives. These projections indicate the management actions that would be needed to achieve and maintain, in perpetuity, the resource outputs called for under an alternative without impairment of the productivity of the land (16 USC 531).

These discussions also provide information for the national RPA Program, the development of which requires information four decades beyond the plan period (16 USC 1602). So that the analysis of alternatives for the RPA Program links with actual conditions and local issues at the Forest level, a complete estimate of outputs, costs, and effects for the RPA Program horizon is needed.

The projection of alternative attributes beyond the plan period, although required by law, does not legally bind the Forest to action beyond the plan period since, as noted above, the Forest is required to revise the plan within fifteen years of its initial development. This revision may well establish different long-term goals and different future projections than those established in the present plan.

See Appendix B for details regarding the modeling of each alternative in the FORPLAN program and the generation of outputs by that program. The methods and assumptions used to generate certain outputs outside the FORPLAN program are documented in the planning records.

PRF: PREFERRED ALTERNATIVE

Theme

This alternative is the final Preferred Alternative revised as the result of public comment on the Draft Plan and Environmental Impact Statement. It is designed to provide a mix of management activities that is sensitive both to historic uses and expressed public preferences. A mixture of commodity and amenity resource outputs is emphasized. There is no budget limitation in the FORPLAN model.

The issues and concerns addressed by this alternative are: (1) balancing commodity and amenity benefits to optimize net public benefit; (2) responding to the needs of each affected social group; (3) providing a variety of high-quality recreation opportunities and a proportional distribution of use between summer and winter; (4) maintaining and improving amenity values to enhance the recreational appeal of the Eastern Sierra; (5) maintaining and enhancing habitat for harvest species of fish and wildlife; (6) restoring and enhancing riparian areas; (7) making wilderness recommendations in response to key opportunities; (8) providing opportunities for mineral and energy development in coordination with other resources; and (9) maintaining the range resource.

Developed summer recreation will be managed with the objective of increasing opportunities in response to demand. Alpine skiing will increase at a rate that responds to demand within environmental, infrastructure and social constraints. Development will be closely coordinated with community planning, so that ski area capacity and the community's ability to provide support services are developed together. The management of dispersed summer and winter recreation will provide for an increase in use roughly proportional to the use of developed sites.

Timber will be managed to provide a continuous supply of wood products for local markets to the degree consistent with cost efficiency and other resource objectives.

Domestic livestock grazing will be managed to be compatible with other resource objectives.

The wilderness land base will be increased by the addition of Further Planning Areas with high wilderness values, in combination with a low level of conflict with other resources or logical additions to existing wilderness, in combination with a low level of conflict with other resources.

Wildlife habitat will be managed with the objectives of protecting deer habitat, achieving recovery for threatened and endangered species, maintaining or enhancing habitat for sensitive and special interest species and maintaining population viability for all other native vertebrate species. Fish habitat will be managed with the objectives of responding to projected increases in dispersed recreation and achieving recovery for threatened trout.

Resource Program Direction

Cultural Resources: Conduct Forest-wide cultural resource inventory and project-related and non-project-related surveys. Emphasize type-of-site investigation rather than the less efficient site-by-site approach to the extent that is feasible. Emphasize a broad and varied cultural resource management program that includes inventory, evaluation (including National Register nominations and/or National Register eligibility determinations), protection, enhancement, and interpretation of cultural values.

Facilities: Construct approximately 87 miles of recreation access roads as needed and approximately 535 miles of trails for hikers, equestrians, nordic skiers, and OHV users over the planning period. Reconstruct the road and trail system on a programmed basis and maintain to assigned maintenance levels. Construct an administrative site for the new Mono Basin National Forest Scenic Area.

Fish: Improve stream habitat in concentrated recreation areas and in native golden trout habitat. Negotiate with FERC and the affected utility companies to rewater streams for the re-establishment of resident trout fisheries. Conduct programmed watershed improvement work to benefit fish habitat. Develop a management plan for the Paiute cutthroat trout.

Lands: Acquire lands, if they become available, in Lee Vining Canyon, Lundy Canyon, and the upper Owens River for summer recreation development. Coordinate landownership adjustments with community planning and Forest management objectives to provide for the community growth associated with increasing alpine ski area capacity.

Minerals: Encourage the development of geothermal resources according to current agreements in Lease Blocks I and II. Consider additional geothermal exploration and development in response to lease applications on any additional Forest lands outside of designated or recommended wilderness.

Pest Management: Respond to the high overall need and opportunity for pest management based on the high levels of developed recreation use and new site construction and the moderate opportunity to manage vegetation associated with timber outputs.

Protection: Use all appropriate wildlife suppression strategies (confinement, containment and control) on the Forest as identified in the Forest fire management action plan that is being developed.

Range: Intensify range management with a vegetative treatment program. Accomplish fifty acres a year using prescribed burning. Allow for a reduction in grazing due to vegetation changes resulting from timber management on lands suitable for both timber and range management. Do not increase livestock grazing on deer winter range. Give priority to mule deer in key fawning areas, developing specific direction in allotment management plans. Apply the guideline of 50 percent utilization of forage by livestock.

Recreation: Develop the potential campgrounds and day-use sites needed to support the objective of increasing use. Develop those sites with the greatest projected use first. Water-oriented sites in concentrated recreation areas have the greatest projected use; sites away from water and concentrated use areas have the lowest projected use. Develop interpretive sites as the opportunity arises. Operate facilities and administer permits at standard levels of service. Develop new concentrated recreation areas in the Walker Lake-Sawmill Canyon and Deadman expansion areas. Develop an additional concentrated recreation area in the upper Owens River area if private land along the river becomes available.

Conduct a cumulative effects study for the Mammoth/June Area for any potential ski area development other than that specified in the approved development plans for Mammoth Mountain and June Mountain. Proposed ski area development in the Sherwin Bowl Area is currently being studied in an environmental analysis outside the Forest planning process. Limiting factors for additional development include infrastructure needs such as adequate water, sewer, snow removal, and transportation facilities; land availability; the regional skier market; and environmental impacts. For planning purposes, the development level projected in the 1985 Town of Mammoth Lakes General Plan represents ski area development under this alternative.

Manage for the increasing summer and winter dispersed use that will result from increased development. Provide a full complement of trails, restrooms, parking areas, and interpretive signs to enhance year-round recreational opportunities and protect resources. Manage dispersed recreation at standard levels of service.

Designate OHV and OSV routes, corridors and open areas in the update of the existing 1977 Interagency Motor Vehicle Use Plan.

Research Natural Areas: Complete the establishment process for the Whippoorwill Flat and McAfee Meadow RNAs.

Riparian Areas: Prohibit new activities in riparian areas that will have unacceptable long-term effects on water quality, fish or other aquatic fauna,

or water-dependent plant life. Fish habitat and watershed improvement work will also benefit riparian areas.

Special Interest Areas: Evaluate identified candidate Special Interest Areas and establish those selected.

Timber: Use even-aged management techniques for timber harvested east of U.S. 395 and uneven-aged management west of the highway. Manage timber for high level production where cost-effective on all suitable lands, with these exceptions:

1. west of U.S. 395 in the Mammoth/June area,
2. existing or potential concentrated recreation areas,
3. the Monache area, and
4. the foreground zones of Sensitivity Level 1 travel routes to meet the Retention Visual Quality Objective.

Provide fuelwood in response to demand. If the supply of logging residue falls below the demand for fuelwood, consider supplying some fuelwood out of the programmed harvest.

Visual Resources: Assign prescribed Visual Quality Objectives (VQOs) with the following exception: timber management must meet or exceed the VQO of Retention in potential concentrated recreation areas. Timber harvest units should be limited to twenty acres or less in most cases.

Watershed: Implement the Forest Watershed Improvement Needs (WIN) plan at an average rate of 350 acres per year.

Wild and Scenic Rivers: The Wild and Scenic River recommendation for the Middle Fork of the San Joaquin River will be submitted to Congress by the Sierra National Forest.

Wilderness: Recommend the following Further Planning Areas for wilderness designation: Table Mountain, Tioga Lake, the upper elevations of the White Mountains, and the southeast quarter of the Paiute area in the Inyo Mountains. Containment will be the primary wildfire suppression strategy for natural fires in the wilderness.

Wildlife: Enhance mule deer habitat by vegetative treatment at an average rate of 180 acres per year, emphasizing key winter range. Do not increase cattle grazing on key deer winter range. Emphasize the protection of key fawning habitat, developing specific direction in allotment management plans. Prohibit or modify ski area development, geothermal development, and timber management to minimize impacts on deer migration routes.

Maintain the integrity of the existing bald eagle winter roosting area. Provide for at least two nesting pairs of reintroduced peregrine falcons. Maintain all existing goshawk nesting territories in suitable timber, allocating one hundred acres to each nesting pair.

Provide for at least one additional herd of reintroduced Sierra Nevada mountain sheep. Consider the reintroduction of additional herds on a case-by-case basis. Provide for at least one reintroduction of Nelson mountain sheep to unoccupied range.

Maintain at least 10 percent of forested lands including both suitable and unsuitable timber in older seral stages. Ensure that old growth acreage is adequately distributed throughout the commercial timber types.

Maintain or create snags in managed timber stands to meet at least 40 percent of the natural potential density of snag-dependent wildlife; allow for higher densities outside of managed timber.

Environment to be Created in the Year 2030

Summer visitors to the Forest in the year 2030 will find noticeably more recreationists, as use will have increased nearly 60 percent since 1982. There will be many more campgrounds, day use sites, and trails of all kinds. Facilities will be better maintained and services will have improved.

Anglers will find moderately increased fishing opportunities due to moderate fish habitat and watershed improvement work. Hunters will experience declining deer populations where geothermal development and community growth has disturbed deer habitat.

The type of use in the Monache area will not have changed, as the area will still be accessible only by four-wheel drive vehicles. Visitors to the White and Inyo Mountains will encounter more hikers and stock parties using the new wilderness.

Vegetation will differ little in appearance as seen from major roads. There will be less timber harvested.

Table 4
Acreage Allocations by Management Prescription
Alternative PRF

Management Prescription	M Acres	Percent of Forest
1. Designated Wilderness	565.1	29.3
2. Proposed Wilderness	172.6	9.0
3. Mountain Sheep	35.0	1.8
4. Mule Deer	118.8	6.2
5. Research Natural Area*	14.9 (0.7)	0.8
6. Mono Basin NF Scenic Area*	45.8	2.4
7. Ancient Bristlecone Pine Forest*	28.9	1.5
8. Wild and Scenic River*	2.6 (15.8)	0.1
9. Uneven-aged Timber Management	10.5	0.5
10. High Level Timber Management	74.5	3.9
11. Range	138.5	7.2
12. Concentrated Recreation Area	52.5	2.7
13. Alpine Ski Area, Existing & Under Study	9.6	0.5
14. Potential Alpine Ski Area	14.2	0.7
15. Developed Recreation Site	2.2	0.1
16. Dispersed Recreation	8.6	0.5
17. Semi-Primitive Recreation	437.8	22.6
18. Multiple Resource Area	199.1	10.3

* Acres with dual designation (existing or proposed wilderness and RNA, Scenic Area, etc.) are displayed in the acreage total for Prescriptions 1 or 2 are indicated in parentheses under the other applicable prescription.

Table 5
Average Annual Outputs by Decade
Alternative PRF

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
FACILITIES								
Administrative Sites								
-Forest Service owned (no.)	6	-	-	8	8	8	8	8
-leased (no.)	1	-	-	1	1	1	1	1
Dams and Reservoirs								
-Forest Service (no.)	3	-	-	3	3	3	3	3
-State/local (no.)	4	-	-	4	4	4	4	4
-private (no.)	11	-	-	11	11	11	11	11
Roads (miles)								
Construction (tot.)	0	-	-	2.5	2.3	2.6	1.3	0
-timber	0	-	-	0	0	0	0	0
-recreation	0	-	-	2.5	2.3	2.6	1.3	0
Reconstruction (tot.)	20	-	-	15	15	15	15	15
-timber	15	-	-	5	5	5	5	5
-recreation	5	-	-	10	10	10	10	10
Maintenance (tot.)	974	-	-	977	1002	1024	1040	1049
Trails (miles)								
Construction (tot.)	0	-	-	24.3	24.2	0	5.0	0
-existing wilderness	0	-	-	0.7	0.6	0	0	0
-recommended wilderness	-	-	-	1.8	1.8	0	0	0
-concentrated rec. areas	0	-	-	9.0	9.0	0	0	0
-open NF	0	-	-	1.0	1.0	0	0	0
-OHV	0	-	-	1.8	1.8	0	0	0
-nordic	0	-	-	10.0	10.0	10.0	5.0	0
Reconstruction (tot.)	10.8	-	-	39.7	39.7	60.7	60.1	70.1
-existing wilderness	9.0	-	-	12.6	12.6	22.7	25.0	25.0
-recommended wilderness	-	-	-	1.3	1.3	1.0	3.1	3.1
-concentrated rec. areas	1.8	-	-	4.2	4.2	7.3	11.3	11.3
-open NF	0	-	-	2.2	2.2	2.5	2.9	2.9
-OHV	0	-	-	16.2	16.2	17.0	17.6	17.6
-nordic	0	-	-	3.2	3.2	10.2	10.2	10.2

Table 5 (continued)
Average Annual Outputs by Decade
Alternative PRF

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
Trails (cont'd)								
Maintenance (tot.)	1236	-	-	1489	1731	1731	1731	1731
LANDS AND MINERALS								
Land acquired (acres)	60	0	0	54	270	270	150	70
Leasable minerals (total power plants)	0	-	-	1	3	5	6	6
Locatable minerals (operating plans)	67	320	408	50	52	56	57	57
PROTECTION								
Fuel Treatment (acres)								
-total	18	500	400	1761	689	767	967	1247
-fire related	0	-	-	0	0	0	0	0
-timber related	18	-	-	93	45	73	88	111
-range related	0	-	-	50	50	50	50	100
-wildlife related	0	-	-	100	178	228	413	280
Expected Wildfire (acres)								
-total	747	-	-	918	981	1062	1134	1224
-intensity level 1	13	-	-	9	10	11	11	12
-intensity level 2	34	-	-	55	59	64	68	73
-intensity level 3	53	-	-	64	69	74	79	86
-intensity level 4	647	-	-	239	255	276	295	318
-intensity level 5	0	-	-	551	589	637	680	734
RANGE (M AUMs)	41.4	42.2	44.5	41.4	41.4	41.4	41.4	41.4
RECREATION USE (M RVD)								
Developed Private	1635			1914	2421	2832	2832	2832
Developed Public	1201	3510	5100	1578	1866	2057	2249	2249
Dispersed	1004	2490	3120	1191	1766	2023	2229	2437
Wilderness	540			644	680	718	755	790
Visual Quality Index	142.07	-	-	142.15	142.22	142.28	142.33	142.38

Table 5 (continued)
Average Annual Outputs by Decade
Alternative PRF

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
TIMBER								
ASQ (MMBF)	10.5	16.8	19.8	7.1	7.1	7.1	7.1	7.1
Fuelwood (M cords)	10.0	-	-	10.6	11.0	8.7	5.7	4.2
Long Term Sustained Yield (MMBF)	-	-	-	14.5	14.5	14.5	14.5	14.5
Reforestation (acres)	300	614	718	200	200	200	200	200
Timber Stand Improvement (acres)	328	900	918	374	374	170	0	0
WATER								
Improvement (acres)	100	180	200	350	350	350	350	350
Quality (M acre-ft.)	1047	476	481	1050	1058	1065	1072	1079
Increased Quantity (M acre-feet)	0	-	-	7.0	0.2	0	0	0
WILDLIFE AND FISH								
Mule Deer								
(M animals total)	20.2	+20 percent		20.2	20.1	20.0	19.9	19.9
(M animals on Inyo)	12.0			12.0	11.9	11.9	11.8	11.8
Bald Eagle** (winter roosting areas)	1	-	-	1	1	1	1	1
Peregrine Falcon** (no. of pairs)	0	-	-	2	2	2	2	2
Goshawks (pairs in suitable timber)	15	-	-	15	15	15	15	15
Nelson Mountain Sheep (no. of animals)	130	-	-	140	154	154	154	154
Sierra Nevada Mountain Sheep (no. of animals)	300	-	-	350	400	450	500	550

Table 5 (continued)
Average Annual Outputs by Decade

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
WILDLIFE AND FISH (cont'd)								
Lahontan CT Trout* (acres of habitat)	1	-	-	.3	.5	.5	.5	.5
Paiute CT Trout* (acres of habitat)	3	-	-	1.3	1.8	1.8	1.8	1.8
Resident Trout (M pounds)	1632	+20 percent		1640	1649	1658	1667	1674
Wildlife/Fish User Days (M WFUDs)								
	391.0	-	-	393.8	400.5	408.8	417.9	427.6
- mule deer	25.2	-	-	25.2	25.0	25.0	24.8	24.8
- resident trout	340.4	-	-	341.7	343.5	345.3	347.1	348.7
- other	25.8	-	-	26.9	32.0	38.5	46.0	54.1
Derived from direct habitat improvement								
- mule deer	0.1	-	-	0.2	0.4	0.4	1.0	0.1
- resident trout	0	-	-	1.1	1.1	1.1	1.1	1.0
- other	0	-	-	0.4	0	<0.1	0	0
Derived from induced habitat improvement								
- mule deer	0	-	-	0	0	0	0	0
- resident trout	0.1	-	-	0.6	0.7	0.7	0.7	0.6
- other	0.1	-	-	0.3	0.1	0.1	0.1	0.1
Units of direct habitat improvement								
-mule deer (M ac.)	0.5	-	-	0.2	0.4	0.4	0.9	0.6
-resident trout (ac.)	0	-	-	0.4	0.4	0.4	0.4	0.4
-other (M acres)	0	-	-	0.3	<0.1	0.3	0	0
HUMAN RESOURCES								
Programs (enrollees)	39	14	14	39	39	39	39	39
TOTAL BUDGET (MM$)	**9.9**	**11.1**	**12.2**	**12.1**	**12.4**	**14.9**	**15.0**	**16.2**
TOTAL COST (MM$)	**10.3**	**-**	**-**	**13.5**	**13.4**	**15.9**	**16.0**	**17.2**

*Threatened, **Endangered.

CUR: CURRENT (1982) PROGRAM - NO ACTION

Theme

This alternative displays the current program of management activities on the Inyo National Forest and projects it over the 50-year planning horizon. The 1982 Forest budget is a limiting factor. The budget remains essentially constant over the planning horizon and continues to be distributed among the resources in roughly the same proportions as in 1982.

The issues and concerns addressed by this alternative are: (1) seeking to balance commodities and amenities to optimize net public benefit; (2) responding to the needs of affected social groups; (3) providing a range of recreational opportunities with an increasing emphasis on private development and winter sports; (4) managing fish and wildlife habitat for public enjoyment, primarily fishing and hunting; (5) making moderate wilderness recommendations, minimizing conflicts with other resources; (6) making land available for energy and mineral development while protecting other resource values

Developed summer recreation will be managed with the objective of maintaining use at current levels through the fifth decade. Alpine skiing will increase at a rate that responds to demand. The actual amount of development will be closely coordinated with community planning so that ski area capacity and the ability of the community to provide support services developed in tandem. The management of dispersed summer and winter recreation will allow for an increase in use, but will allow for the quality of the experience to deteriorate.

Timber will be managed with the objective of maintaining currently projected outputs over the planning horizon.

The grazing program will be managed with the objective of maintaining the current level of management intensity through the fifth decade.

The wilderness land base will be increased by the addition of Further Planning Areas with ecological systems not yet represented in wilderness on the Inyo.

Wildlife habitat will be managed with the objectives of: (1) minimizing Forest-wide reduction of deer habitat capacity; (2) achieving recovery for threatened and endangered species; (3) maintaining or enhancing habitat for sensitive and special interest species; and (4) maintaining population viability for all other native vertebrate species. Fish habitat will be managed with the objectives of responding to projected increases in dispersed recreation and achieving recovery for threatened trout.

Resource Program Direction

Cultural Resources: Inventory cultural resource properties (primarily in preparation for timber sales and other activities that could affect cultural values) at a rate of approximately 12,000 acres per year, covering 33 percent of the Forest by the end of the fifth decade. Meet mandatory historic preservation requirements for project implementation primarily through

mitigation by avoidance of impacts (protection). Undertake formal site evaluation, testing, and mitigation only when avoidance is not feasible. Develop and initiate type-of-site evaluation studies as the opportunity arises. Continue to provide a minimum of formal site protection, interpretation, and enhancement.

Facilities: Construct a total of 6 miles of road to facilitate timber management, and 40 new roads for developed recreation sites access over the next fifty years. Construct a total of 178 miles of trail for hikers, equestrians, nordic skiers, and OHVs. Reconstruct the road and trail system on a programmed basis. Maintain to levels provided for by 1982 budget levels. *Construct one additional administrative site for the new Mono Basin* National Forest Scenic Area.

Fish: Improve a total of 72 acres of stream habitat in concentrated recreation areas and 56 acres in native golden trout habitat on the Kern Plateau. Establish 5 acres of habitat for Lahontan cutthroat trout. Negotiate with FERC and the affected utility companies to rewater at least 27 acres of stream to reestablish resident trout fisheries. The watershed improvement work will also benefit fish habitat.

Lands: Coordinate landownership adjustments with community planning and Forest management objectives to provide for the community growth associated with increasing alpine ski area capacity.

Minerals: Encourage the development of geothermal resources according to current agreements in Lease Blocks I and II. Consider additional geothermal exploration and development in response to lease applications on any Forest lands outside of designated or recommended wilderness. Encourage mineral exploration and development by limiting the acreage with identified high *mineral potential recommended for wilderness designation.*

Pest Management: Respond to the need and opportunity for pest management at current, moderate levels based on the low level of developed recreation use, the lack of new site construction, and the moderate opportunity to manage vegetation associated with moderate timber outputs.

Protection: Continue to operate under the 1982 fire management program pending completion of the final fire management action plan for the Forest.

Range: Maintain the current level of intensity in range management. Allow for a reduction in grazing due to vegetation changes resulting from timber management on lands suitable for both timber and range management. Apply the guideline of 50 percent forage utilization by livestock. Do not increase livestock grazing on deer winter range. Give priority to mule deer in key fawning areas, developing specific direction in allotment management plans.

Recreation: Maintain existing developed campgrounds and existing concentrated recreation areas; provide for some additional construction of minor day use and interpretive facilities. Operate many facilities at low-standard levels of maintenance and service and/or shorten the operating seasons.

Evaluate potential alpine ski areas in the following sequence: (1) Sherwin Bowl, (2) Mammoth Knolls and Minaret Summit; (3) San Joaquin and White Wing. For the initial planning period, manage Sherwin, Summit, and Knolls so that alpine ski area potential is not lost. The actual amount and location of ski areas will be based on site-specific feasibility studies and environmental documents; for planning purposes, the development level projected in the 1985 Town of Mammoth General Plan represents full ski area development under this alternative.

Manage for slightly increased summer dispersed recreation resulting from an enlarged wilderness base and the projected upgrading of U.S. 395 and 203. Manage for the moderate increase in winter dispersed use that will result from near-doubling of the overnight wintertime accommodation base in local communities and the establishment of a moderate-sized nordic resort in the upper Dry Creek-Deadman Creek area. Construct few, if any, new dispersed facilities such as trails, parking areas, and restrooms. Continue to manage dispersed recreation at a low standard (limited cleanup, maintenance, and public contact outside of developed sites).

Accommodate and control OHV use under the existing Interagency Vehicle Use Plan, retaining existing summer open areas and slightly reducing winter open areas where they conflict with alpine or nordic ski areas or wilderness.

Research Natural Areas: Complete the establishment process for the Whippoorwill Flat and McAfee Meadow recommended RNAs.

Riparian Areas: Prohibit new activities in riparian areas that will have unacceptable long-term effects on water quality, fish (or other aquatic fauna), or water-dependent plant life. The fish habitat and watershed improvement work discussed under separate headings will also be expected to benefit riparian areas.

Special Interest Areas: Evaluate identified candidate Special Interest Areas and establish those selected.

Timber: Manage timber for high level production where cost-effective on all suitable timber lands with the following exceptions:

1. Do not manage for commercial timber outputs on existing or potential concentrated recreation areas or existing alpine ski areas.
2. Modify timber management as needed to meet the retention visual quality objective in the foreground zones of Sensitivity Level 1 roads.

Provide fuelwood in response to demand. If the supply of logging residue falls below the demand for fuelwood, consider supplying some fuelwood out of the programmed harvest.

Visual Resources: Assign prescribed Visual Quality Objectives (VQOs) with the following exceptions: timber management must meet or exceed the VQO of partial retention on all lands, and openings for timber harvest should be limited to 20 acres or less.

Watershed: Implement the Forest Watershed Improvement Needs (WIN) Plan at the current rate of approximately 40 acres per year, completing approximately 9 percent of the work identified in that plan by the end of the fifth decade.

Wild and Scenic Rivers: Wild and Scenic River recommendations are the same for all alternatives; those recommendations are described above under the heading of Management Prescriptions that are area-specific in all alternatives.

Wilderness: Recommend the following Further Planning Areas for wilderness designation: the upper elevations of the White Mountains and the southeast quarter of the Paiute area in the Inyo Mountains. Control is the only appropriate fire suppression strategy in wilderness.

Wildlife: Maintain overall mule deer habitat near current levels by coordination with other resources and by deer habitat improvement. Treat vegetation, emphasizing key winter range, at an average rate of 482 acres per year (241 acres of which will be treated by prescribed burning.) Do not allow cattle grazing to increase on key deer winter range. Emphasize the protection of key fawning habitat, developing specific direction in allotment management plans. Mitigate the effects of ski area development, geothermal development, and timber management on deer migration routes.

Maintain the integrity of the existing bald eagle winter roosting area.

Provide for two nesting pairs of reintroduced peregrine falcons.

Maintain all existing goshawk nesting territories in suitable timber, allocating 50 acres to each nesting pair.

Maintain 10 percent of all forested lands (but no suitable timber) in older seral stages.

Maintain or create snags in managed timber stands to meet at least 40 percent of the natural potential density of snag-dependent wildlife; allow for higher densities outside of managed timber.

Environment to be Created in the Year 2030

Summer visitors to the Forest in the year 2030 will find only a slight increase in recreationists, as no additional campgrounds will have been constructed. There will be a few more day-use sites and trails. Facilities will be in poor condition, and services will be provided at a low level.

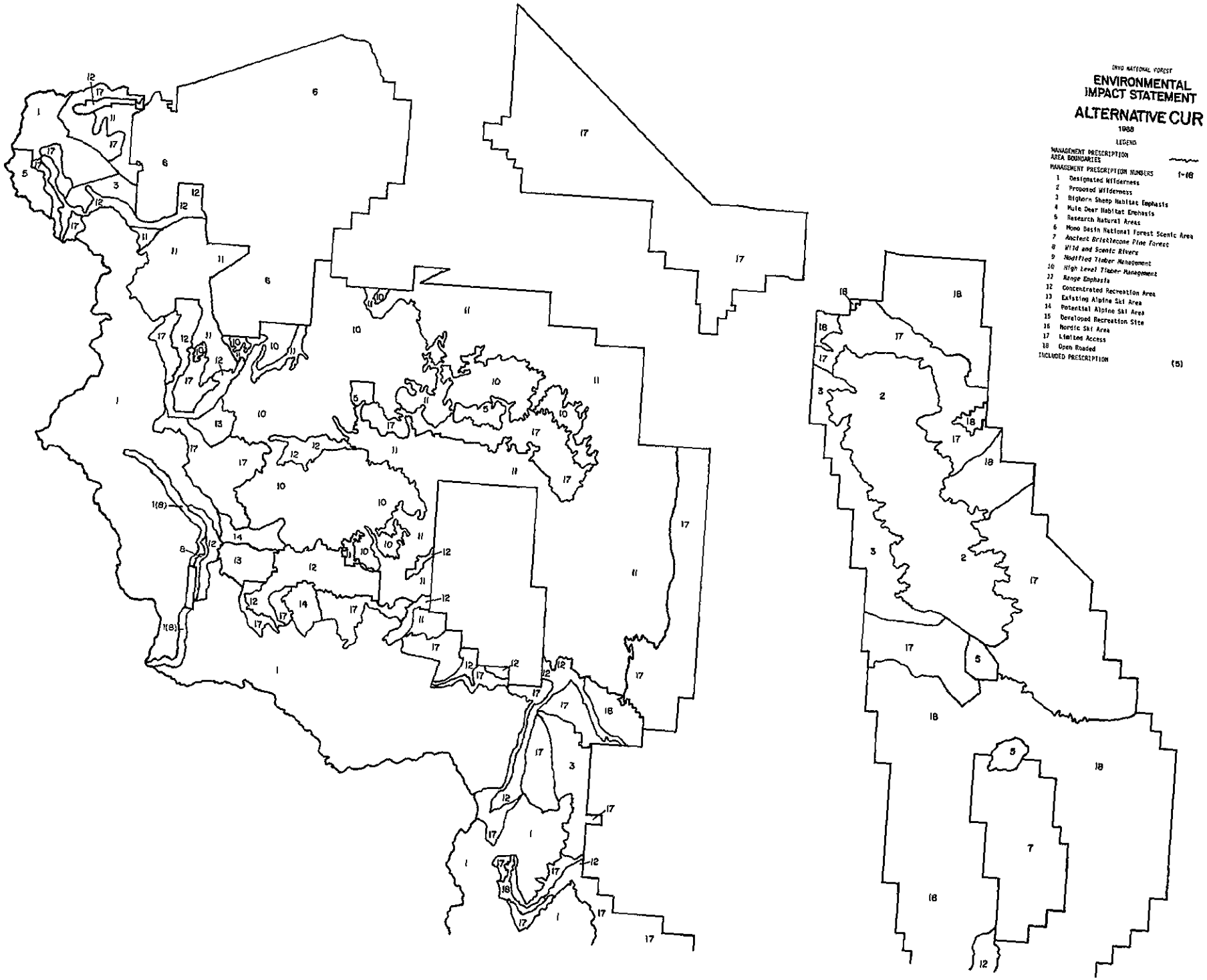
Anglers will find slightly increased fishing opportunities due to a moderate amount of stream habitat improvement and a small amount of watershed improvement work. Hunters will experience declining deer populations where timber harvest, geothermal development, and community growth had increased overall use and disturbance of deer habitat.

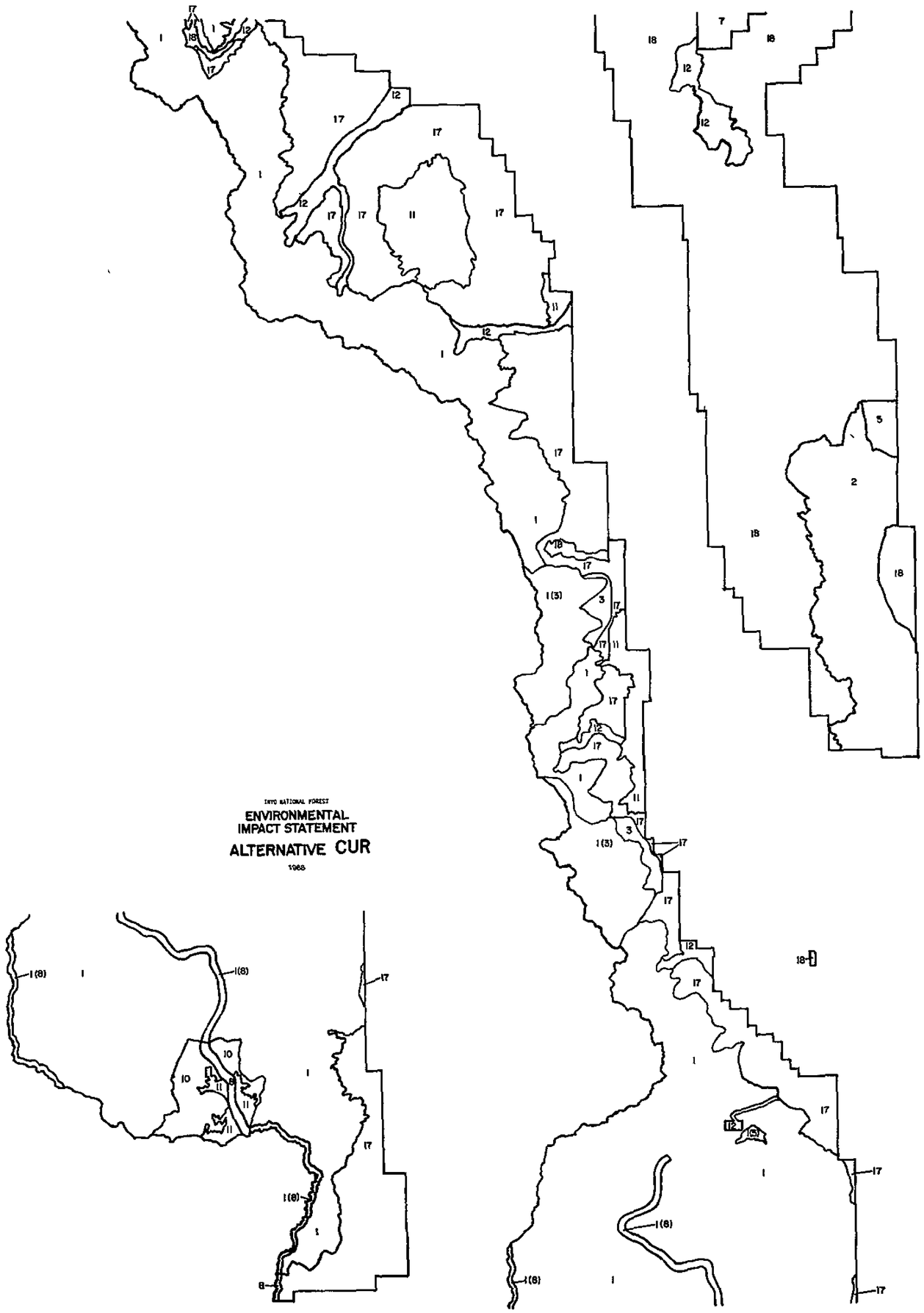
The type of use in the Monache area will have changed with improved access for timber harvest. More people will use the area as a wilderness entry point, and fewer will seek the remote camping and four-wheel drive recreation typical of 1982. There will also be some changes in the White and Inyo

Mountains, as wilderness in those ranges attract more hikers and stock parties.

Vegetation will differ little in appearance as seen from major roads. Views from the back roads and viewpoints north and east of Mammoth Lakes and in the Monache area will show a substantial increase in plantations of small trees and logging debris.

Winter visitors will encounter nearly twice as many alpine skiers and skiing opportunities. Mammoth and June Mountains will have developed fully, and additional skiing will be found in the Sherwin Bowl, Minaret Summit, and/or Mammoth Knolls areas. There will be a slight increase in nordic trails Forest-wide. The communities of Mammoth and June Lake will have grown and urbanized considerably in support of increased skiing.


INYO NATIONAL FOREST
ENVIRONMENTAL IMPACT STATEMENT
ALTERNATIVE CUR
1988
LEGEND
MANAGEMENT PRESCRIPTION AREA BOUNDARIES
MANAGEMENT PRESCRIPTION NUMBERS 1-18
1 Designated Wilderness
2 Proposed Wilderness
3 Bighorn Sheep Habitat Emphasis
4 Mule Deer Habitat Emphasis
5 Research Natural Areas
6 Mono Basin National Forest Scenic Area
7 Ancient Bristlecone Pine Forest
8 Wild and Scenic Rivers
9 Modified Timber Management
10 High Level Timber Management
11 Range Emphasis
12 Concentrated Recreation Area
13 Existing Alpine Ski Area
14 Potential Alpine Ski Area
15 Developed Recreation Site
16 Nordic Ski Area
17 Limited Access
18 Open Roaded
INCLUDED PRESCRIPTION (5)



INYO NATIONAL FOREST

ENVIRONMENTAL IMPACT STATEMENT

ALTERNATIVE CUR

1988

Table 6
Acreage Allocations by Management Prescription
Alternative CUR

Management Prescription	M Acres	Percent of Forest
1. Designated Wilderness	565.1	29.4
2. Proposed Wilderness	107.6	5.6
3. Mountain Sheep	35.0	1.8
4. Mule Deer	0	0
5. Research Natural Area*	14.9 (0.7)	0.8
6. Mono Basin NF Scenic Area*	45.0	2.3
7. Ancient Bristlecone Pine Forest*	28.9	1.5
8. Wild and Scenic River*	4.3 (19.4)	0.2
9 . Uneven-aged Timber Management	0	0
10. High Level Timber Management	109.8	5.7
11. Range	178.3	9.2
12. Concentrated Recreation Area	44.6	2.3
13. Alpine Ski Area, Existing and Under Study	6.2	0.3
14. Potential Alpine Ski Area	6.6	0.3
15. Developed Recreation Site	1.4	0.1
16. Dispersed Recreation	0	0
17. Semi-Primitive Recreation	364.4	18.9
18. Multiple Resource Area	419.0	21.7

* Acres with dual designation (existing or proposed wilderness and RNA, Scenic Area, etc.) are displayed in the acreage total for Prescriptions 1 or 2 and indicated in parentheses under the other applicable prescription.

Table 7
Average Annual Outputs by Decade
Alternative CUR

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
FACILITIES								
Administrative Sites								
-Forest Service owned (no.)	6	-	-	8	8	8	8	8
-leased (no.)	1	-	-	0	0	0	0	0
Dams and Reservoirs								
-Forest Service (no.)	3	-	-	3	3	3	3	3
-State/local (no.)	4	-	-	4	4	4	4	4
-private (no.)	11	-	-	11	11	11	11	11
Roads (miles)								
Construction (tot.)	0	-	-	3.1	1.5	0	0	0
-timber	0	-	-	.6	0	0	0	0
-recreation	0	-	-	2.5	1.5	0	0	0
Reconstruction (tot.)	20	-	-	15	15.8	17	17	17
-timber	15	-	-	15	5.0	17	17	17
-recreation	5	-	-	0	10.8	0	0	0
Maintenance (tot.)	974	-	-	977	989	995	1003	1011
Trails (miles)								
Construction (tot.)	0	-	-	9.0	8.8	0	0	0
-existing wilderness	0	-	-	0.7	0.6	0	0	0
-recommended wilderness	-	-	-	0.8	0.7	0	0	0
-concentrated rec. areas	0	-	-	0	0	0	0	0
-open NF	0	-	-	0	0	0	0	0
-OHV	0	-	-	0	0	0	0	0
-nordic	0	-	-	7.5	7.5	0	0	0
Reconstruction total	10.8	-	-	37.9	37.9	49.9	59.0	58.9
-existing wilderness	9.0	-	-	12.6	12.6	22.7	25.0	25.0
-recommended wilderness	-	-	-	1.3	1.3	0.8	4.1	4.0
-concentrated rec. areas	1.8	-	-	4.2	4.2	3.7	4.2	4.2
-open NF	0	-	-	2.2	2.2	2.1	2.1	2.1
-OHV	0	-	-	14.4	14.4	14.4	14.4	14.4
-nordic	0	-	-	3.2	3.2	6.2	9.2	9.2

Table 7 (continued)
Average Annual Outputs by Decade
Alternative CUR

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
Trails (cont'd)								
-Maintenance (tot.)	1236	-	-	1361	1469	1469	1469	1469
LANDS AND MINERALS								
Land acquired (acres)	60	0	0	54	130	200	150	60
Leasable minerals (total power plants)	0	-	-	1	3	5	6	6
Locatable minerals (operating plans)	67	320	408	60	63	67	72	72
PROTECTION								
Fuel Treatment (acres)								
-total	18	500	400	923	514	1103	602	168
-fire related	0	-	-	0	0	0	0	0
-timber related	18	-	-	163	80	97	92	168
-range related	0	-	-	324	434	286	52	0
-wildlife related	0	-	-	436	0	720	458	0
Expected Wildfire (acres)								
-total	747	-	-	1011	1069	1069	1069	1069
-intensity level 1	13	-	-	10	11	11	11	11
-intensity level 2	34	-	-	128	135	135	135	135
-intensity level 3	53	-	-	57	60	60	60	60
-intensity level 4	647	-	-	209	222	222	222	222
-intensity level 5	0	-	-	607	641	641	641	641
RANGE (M AUMs)	41.4	42.2	44.5	38.1	39.3	41.6	39.3	39.1
RECREATION USE (M RVD)								
Developed Public	1201	3510	5100	1293	1293	1293	1289	1289
Developed Private	1635			1914	2421	2832	2832	2832
Dispersed	1004	2490	3120	1238	1560	1580	1580	1640
Wilderness	540			639	680	716	753	788
Visual Quality Index	142.07	-	-	142.13	142.18	142.22	142.26	142.30

Table 7 (continued)
Average Annual Outputs by Decade
Alternative CUR

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
TIMBER								
ASQ (MMBF)	10.5	16.8	19.8	11.4	13.4	13.4	13.4	13.4
Fuelwood (M cords)	10.6	-	-	10.6	11.0	8.7	5.7	4.2
Long Term Sustained Yield (MMBF)	-	-	-	24.7	24.7	24.7	24.7	24.7
Reforestation (acres)	300	614	718	817	402	483	459	842
Timber Stand Improvement (acres)	328	900	918	40	48	970	0	0
WATER								
Improvement (acres)	100	180	200	40	40	40	40	40
Quality (M acre-feet)	1047	476	481	1047	1049	1050	1051	1052
Increased Quantity (M acre-feet)	0	-	-	11.0	4.0	0	3.0	0
WILDLIFE AND FISH								
Mule Deer								
(M animals total)	20.2	+20 percent		20.2	20.0	19.8	19.7	19.6
(M animals on Inyo)	12.0			12.0	11.8	11.6	11.5	11.5
Bald Eagle** (winter roosting areas)	1	-	-	1	1	1	1	1
Peregrine Falcon** (no. of pairs)	0	-	-	2	2	2	2	2
Goshawks (pairs in suitable timber)	15	-	-	15	15	15	15	15
Nelson Mountain Sheep (no. of animals)	130	-	-	140	154	154	154	154
Sierra Nevada Mountain Sheep (no. of animals)	300	-	-	350	400	450	500	550

Table 7 (continued)
Average Annual Outputs by Decade
Alternative CUR

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
WILDLIFE AND FISH (cont'd)								
Lahontan CT Trout* (ac. of habitat)	1	-	-	.3	.5	.5	.5	.5
Paiute CT Trout* (ac. of habitat)	3	-	-	1.3	1.8	1.8	1.8	1.8
Resident Trout (M pounds)	1632	+20 percent		1635	1639	1643	1647	1651
Total Wildlife/Fish User Days (M WFUDs)	391.0	-	-	392.9	393.9	395.2	396.7	398.9
- mule deer	25.2	-	-	25.2	24.6	24.2	24.0	23.8
- resident trout	340.0	-	-	340.8	341.5	342.3	343.1	343.9
- other	25.8	-	-	26.9	27.8	28.7	29.6	31.2
Derived from direct habitat improvement								
- mule deer	0.1	-	-	<0.1	0	0.2	0.2	0
- resident trout	0	-	-	0.7	0.7	0.7	0.7	0.7
- other	0	-	-	0.5	0	0.2	0.2	0
Derived from induced habitat improvement								
- mule deer	0	-	-	0	0	0	0	0
- resident trout	0.1	-	-	0.1	0.1	0.1	0.1	0.1
- other	0.1	-	-	<0.1	0	0.2	0.1	0
Units of direct habitat improvement								
- mule deer (M ac.)	0.5	-	-	0	0	1.4	0.9	0
- resident trout (ac)	0	0	0	3.1	3.1	3.1	3.1	3.1
- other (M acres)	0	-	-	.4	0	0	0	0
HUMAN RESOURCES								
Programs (enrollees)	39	14	14	39	39	39	39	39
TOTAL BUDGET (MM$)	9.9	11.1	12.2	10.0	9.9	10.0	10.0	10.0
TOTAL COST (MM$)	10.3	-	-	11.0	10.9	11.0	11.0	11.0

*Threatened, **Endangered.

RPA: MEET TARGETS AND GOALS OF THE 1980 RESOURCES PLANNING ACT PROGRAM

Theme

This alternative is designed to meet the targets and goals of the 1980 RPA Program, representing moderate to high outputs of commodities and selected amenities. Some of the assigned RPA targets and goals for the Forest are not mutually compatible. Where there was a conflict, market outputs (timber, range, and developed recreation) were given priority over non-market outputs and amenities. In cases for which RPA goals could not be met in this alternative, they were met in one or more of the other alternatives studied in detail. There is no budget limitation in the FORPLAN model.

The issues and concerns addressed by this alternative are: (1) establishing a regulated forest on a large part of the tentatively suitable timber base; (2) achieving high levels of developed recreation use, (3) making no additional wilderness recommendations; (4) minimizing restrictions on mineral activities.

Timber will be managed with the objectives of achieving a programmed annual harvest of 19.2 MMBF.

Domestic livestock grazing will be managed with the objective of producing at least 55,600 average annual AUMs by the fifth decade, representing the Congressional target of a 46 percent increase over the specified base level.

Developed recreation will be managed with the objective of increasing in response to demand; the actual amount of development will be limited by potential supply. Alpine skiing will increase in response to demand to the extent compatible with timber objectives. The management of dispersed summer and winter recreation will provide for an increase in use roughly proportional to developed site use.

Wildlife habitat will be managed with the objectives of: (1) minimizing Forest-wide reductions in deer habitat capacity, given the range and alpine skiing priority; (2) achieving recovery for threatened and endangered species; (3) maintaining population viability for all other native vertebrate species. Fish habitat will be managed with the objectives of:(1) achieving recovery for threatened trout species; (2) responding to projected increases in dispersed recreation; (3) increasing stream trout habitat 20 percent in response to the RPA goal.

Resource Program Direction

Cultural Resources: Meet the RPA goal of completing a Forest-wide cultural resource inventory by 1995, at an average rate of 180,000 acres per year. Develop and implement a formal type-of-site evaluation program for various types of cultural properties. Use that program to supplement a primary strategy of impact avoidance (protection) in meeting historic preservation requirements for activities that could affect cultural properties. Develop and implement enhancement and interpretation activities as the opportunity arises. Initiate formal monitoring and protection programs.

Facilities: Construct a total of 21 miles of road to facilitate timber management and 82 miles for developed recreation site access over the next 50 years. Construct a total of 538 miles of trail for hikers, equestrians, nordic skiers, and OHVs. Reconstruct the road and trail system on a programmed basis; maintain to assigned maintenance levels. Construct one additional administrative site for the new Mono Basin National Forest Scenic Area.

Fish: Improve a total of 180 acres of stream habitat in concentrated recreation areas and 56 acres in native golden trout habitat on the Kern Plateau. Establish 18 acres of habitat for threatened Paiute cutthroat trout and 5 acres for Lahontan cutthroat trout. Negotiate with FERC and the affected utility companies to rewater at least 27 acres of stream for the reestablishment of resident trout fisheries. The watershed improvement work will also benefit fish habitat.

Lands: Acquire lands (if they become available) in Lee Vining Canyon, Lundy Canyon, and the upper Owens River for summer recreation development. Coordinate landownership adjustments with community planning and Forest management objectives to provide for the community growth associated with increasing alpine ski area capacity. Conduct landline surveys at an average rate of 33 miles per year in order to meet the RPA goal of completing all such surveys by the year 2030.

Minerals: Encourage the development of geothermal resources according to current agreements in Lease Blocks I and II. Consider additional geothermal exploration and development in response to lease applications on any additional Forest lands outside of designated wilderness. In order to encourage mineral activities, recommend no additional lands for wilderness designation.

Pest Management: Respond to the very high overall need and opportunity for pest management based on the high levels of developed recreation use and new site construction and the major opportunity to manage vegetation associated with high level timber outputs.

Protection: Apply the following fire management program: (1) prevention and detection represent 17 percent of the program; (2) suppression and aviation represent 83 percent of the program; (3) there is no fuels treatment for fire management purposes; (4) total staffing at the 1982 level; and (5) all appropriate wildfire suppression strategies (confinement, containment, and control) are applied.

Range: Intensify range management with an annual average of 1,500 acres of vegetation treatment over the five decades. Accomplish 570 acres of this total by prescribed burning. Apply the guideline of 60 percent utilization of forage by livestock. Allow for a reduction in grazing due to vegetation changes resulting from timber management on lands suitable for both timber and range management. Allow livestock grazing to increase on deer winter range. Place only minimal restrictions on grazing in mule deer fawning areas.

Recreation: Develop all potential campgrounds and day-use sites that will not conflict with timber management activities. Develop those sites with the

greatest projected use first (water-oriented sites in concentrated recreation areas have the greatest projected use; sites away from water and concentrated use areas have the lowest projected use). Develop interpretive sites as the opportunity arises. Operate facilities and administer permits at standard level of service.

Retain most existing concentrated recreation areas. Eliminate the Deadman, Inyo Craters, and Deadman expansion concentrated recreation areas (keeping the campgrounds) to allow for maximum timber production. Develop new concentrated recreation areas in the Buttermilk and Walker Lake-Sawmill Canyon areas. Develop an additional concentrated recreation area in the upper Owens River area if private land along the river becomes available.

Consider proposals to increase alpine ski area capacity 8,000 to 15,000 SAOT over the 31,000 currently approved. Added capacity will be envisioned for the Sherwin Bowl and Minaret Summit potential ski areas to minimize conflicts with timber management.

Manage for increasing dispersed use that will result from full development of campgrounds and a more-than double wintertime overnight base in local communities. Manage for the increased use associated with upgrading of U.S. 395 and State Highway 203, improved access into currently unroaded areas, and the development of a moderate-sized nordic ski area in the upper Dry Creek-Deadman Creek area. Provide a full complement of trails, restrooms, parking areas, and interpretive signs to enhance year-round recreational opportunities and protect resources. Manage dispersed use at standard levels of service.

Encourage summer OHV use, including a 65 percent increase in open OHV area acreage. Restrict winter OHV use only to the degree needed to minimize conflicts with wilderness or alpine and nordic ski areas.

Manage the following lands in continuing unroaded condition with an emphasis on primitive and semi-primitive dispersed recreation: San Joaquin Ridge from Deadman Summit to Glass Creek, lands outside wilderness and concentrated recreation areas in the Rock Creek drainage and the Mammoth Lakes Basin, Glass Mountain Ridge, and the higher elevations of the White Mountains north of White Mountain Peak.

Research Natural Areas: Complete the establishment process for the Whippoorwill Flat and McAfee Meadow RNAs.

Riparian Areas: Prohibit new activities in riparian areas that will have unacceptable long-term effects on water quality, fish (or other aquatic animals), or water-dependent plant life. The fish habitat and watershed improvement work discussed under separate headings will also be expected to benefit riparian areas.

Special Interest Areas: Evaluate identified candidate Special Interest Areas and establish those selected by 1990.

Timber: Manage timber for high level production where cost-effective on all suitable timber lands with the following exceptions.

1. Do not manage for commercial timber outputs on concentrated recreation areas or alpine ski areas.

2. Modify timber management as needed to meet the Retention Visual Quality Objective in the foreground zones of scenic highways.

Allow for departure from the base sale schedule, drop the harvest dispersion requirements, and harvest steep slopes (even if not cost-effective) in order to achieve objectives.

Provide fuelwood in response to demand. If the supply of logging residue falls below the demand for fuelwood, consider supplying some fuelwood out of the programmed harvest.

Visual Resources: Assign prescribed Visual Quality Objectives (VQOs) with the following exceptions: timber management must meet or exceed the VQOs of Retention or Partial Retention, as inventoried, where seen from state-designated scenic highways; Partial Retention in the foreground zones of Sensitivity Level 1 roads; and Modification in the foreground zones of Sensitivity Level 2 roads.

Watershed: Implement the Forest watershed improvement needs (WIN) plan at an average rate of 200 acres per year in order to meet the RPA target; at this rate, 46 percent of the work identified in that plan will be completed by the end of the fifth decade.

Wild and Scenic Rivers: Wild and Scenic River recommendations are the same for all alternatives; those recommendations are described above under the heading of Management Prescriptions that are area-specific in all alternatives.

Wilderness: Recommend no Further Planning Areas for wilderness designation. Containment will be the primary wildfire suppression strategy for natural fires in wilderness.

Wildlife: Maintain overall mule deer habitat capacity to the extent possible given livestock priority on winter range and timber harvest, geothermal development, community growth, and ski area development on migration routes. Enhance deer habitat by vegetation treatment, emphasizing key winter range, at an average rate of 496 acres per year (248 acres of which will be accomplished by prescribed burning).

Maintain the integrity of the existing bald eagle winter roosting area.

Provide for two nesting pairs of reintroduced peregrine falcons.

Maintain nine goshawk nesting territories in suitable timber; allocate 50 acres to each nesting pair.

Provide for no additional herds of reintroduced Sierra Nevada or Nelson mountain sheep.

Maintain 10 percent of all forested land (but no suitable timber) in older seral stages.

Maintain or create snags in managed timber stands to meet at least 40 percent of the natural potential density of snag-dependent wildlife; allow for higher densities outside of managed timber.

Environment to be Created in the Year 2030

Summer visitors to the Forest in the year 2030 will find noticeably more recreationists, as use will have increased nearly 60 percent since 1982. There will be many more campgrounds, day use sites, and trails of all kinds. Facilities will be better maintained and services will have improved.

Anglers will find somewhat increased fishing opportunities, due to the large amount of stream habitat enhancement and moderate amount of watershed improvement work. Hunters will experience dramatically reduced deer populations because cattle grazing had increased on deer winter range and because timber harvest, geothermal development, community growth, and ski area development had obstructed migration routes and improved access, increasing overall use and disturbance of deer habitat.

The type of use in the Monache area will have changed with improved access for timber harvest. More people will use the area as a wilderness entry point, and fewer will find the remote camping and four-wheel drive recreation typical of 1982.

Vegetation will differ little in appearance as seen from U.S. 395, Highway 203, and other Scenic Highways. Views from other roads and viewpoints north and east of Mammoth Lakes and in the Monache area will show a dramatic increase in plantations of small trees and logging debris. Timber harvest on steep slopes will be more visible than the harvest on gentler terrain found under other alternatives.

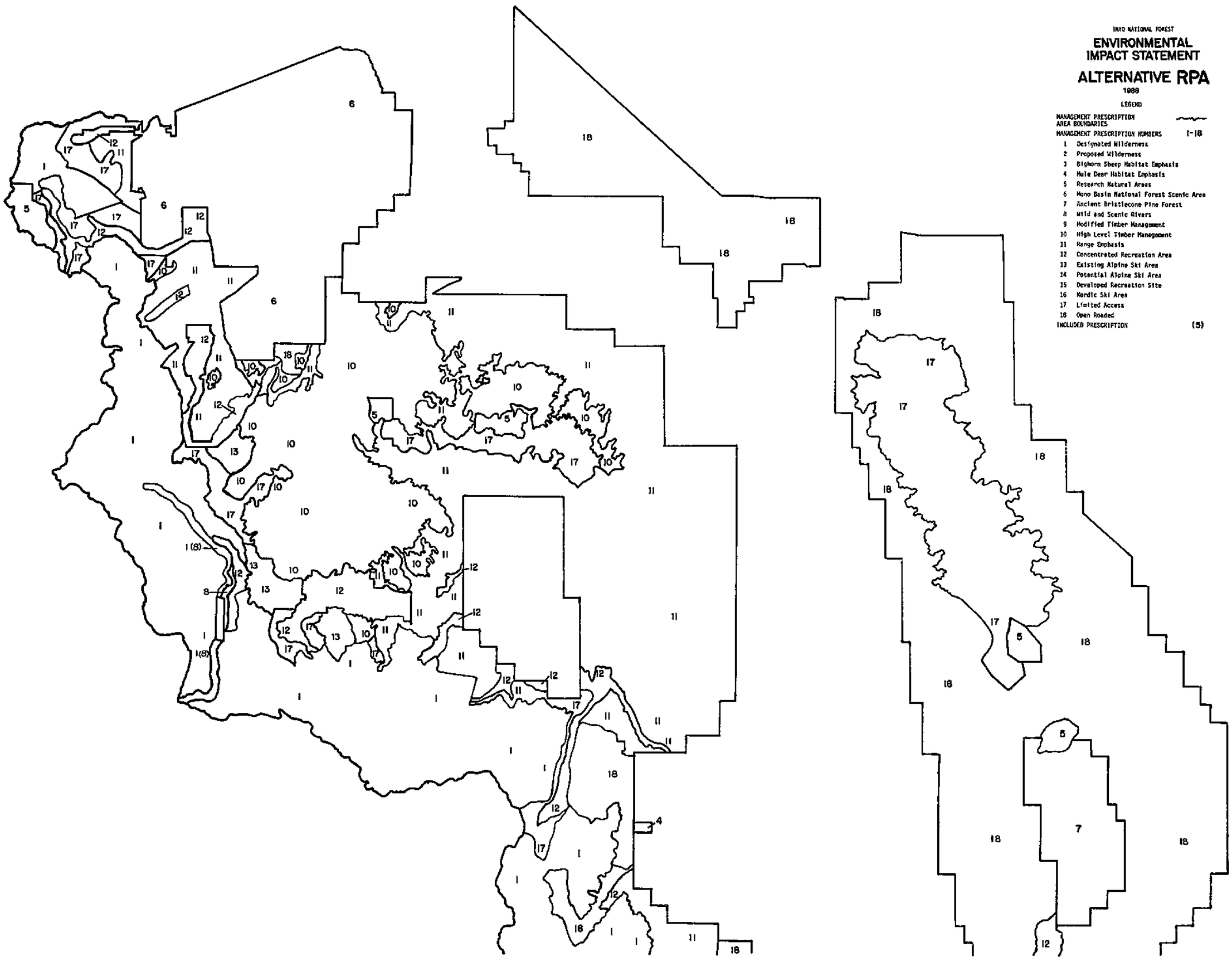
Winter visitors will encounter more than twice as many alpine skiers and skiing opportunities. Mammoth and June Mountains will have developed fully, and additional skiing will be found in the Sherwin Bowl, Minaret Summit, and White Wing areas. Nordic trails and support facilities will have developed Forest-wide. The communities of Mammoth and June Lake will have grown and urbanized considerably in support of increased skiing.

INYO NATIONAL FOREST

ENVIRONMENTAL IMPACT STATEMENT

ALTERNATIVE RPA

1988



INYO NATIONAL FOREST

ENVIRONMENTAL IMPACT STATEMENT

ALTERNATIVE RPA

1988

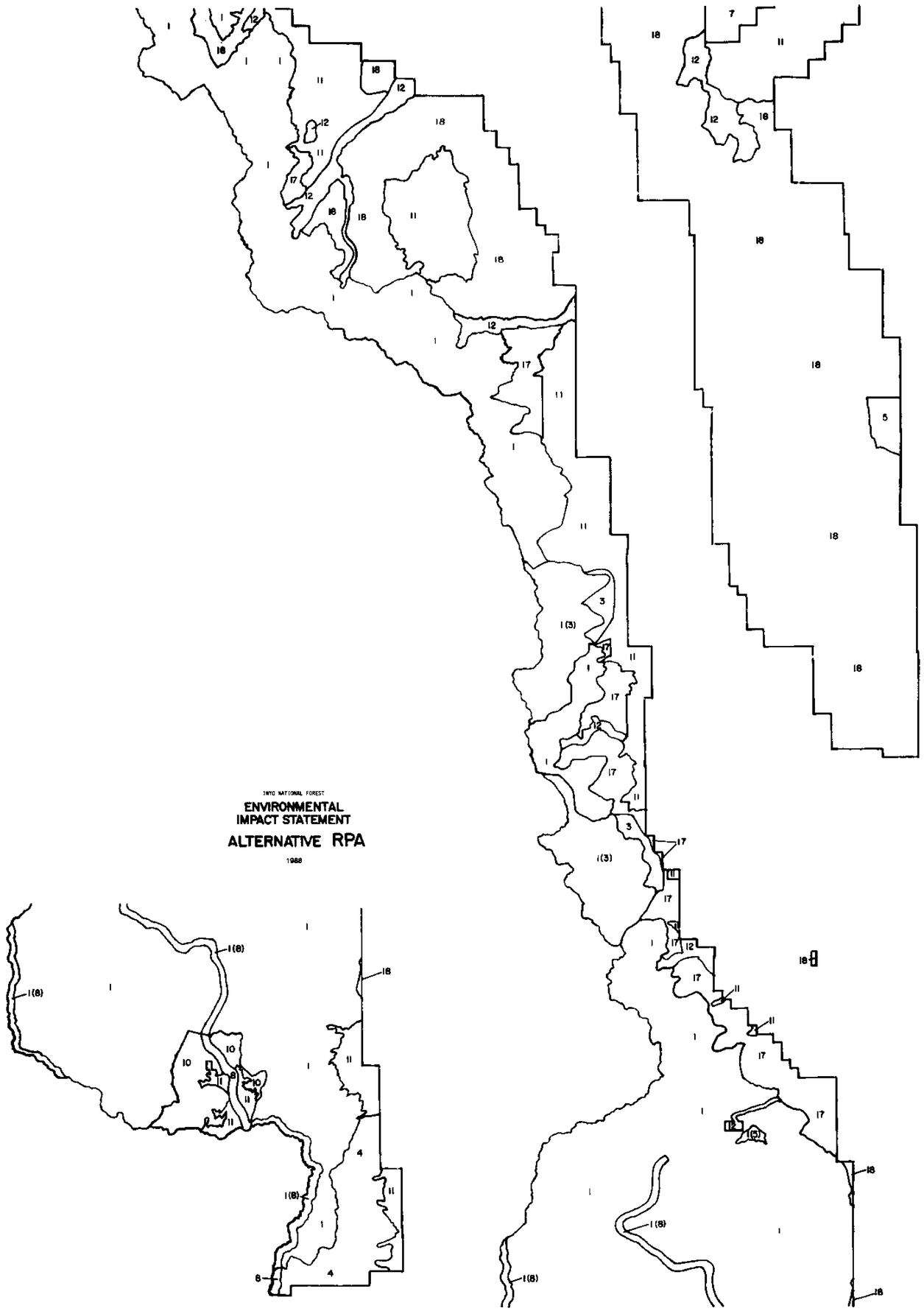


Table 8
Acreage Allocations by Management Prescription
Alternative RPA

Management Prescription	M Acres	Percent of Forest
1. Designated Wilderness	565.1	29.4
2. Proposed Wilderness	0	0
3. Mountain Sheep	4.8	0.2
4. Mule Deer	7.4	0.4
5. Research Natural Area*	14.9 (0.7)	0.8
6. Mono Basin NF Scenic Area*	45.0	2.3
7. Ancient Bristlecone Pine Forest*	28.9	1.5
8. Wild and Scenic River*	4.3 (19.4)	0.2
9. Uneven-aged Timber Management	0	0
10. High Level Timber Management	119.8	6.2
11. Range	228.1	11.8
12. Concentrated Recreation Area	44.1	2.3
13. Alpine Ski Area, Existing and Under Study	10.2	0.5
14. Potential Alpine Ski Area	0	0
15. Developed Recreation Site	2.1	0.1
16. Dispersed Recreation	0	0
17. Semi-Primitive Recreation	204.4	10.6
18. Multiple Resource Area	652.0	33.8

* Acres with dual designation (existing or proposed wilderness and RNA, Scenic Area, etc.) are displayed in the acreage total for Prescriptions 1 or 2 and indicated in parentheses under the other applicable prescription.

Table 9
Average Annual Outputs by Decade
Alternative RPA

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
FACILITIES								
Administrative Sites								
-Forest Service owned (no.)	6	-	-	8	8	8	8	8
-leased (no.)	1	-	-	0	0	0	0	0
Dams and Reservoirs								
-Forest Service (no.)	3	-	-	3	3	3	3	3
-State/local (no.)	4	-	-	4	4	4	4	4
-private (no.)	11	-	-	11	11	11	11	11
Roads (miles)								
Construction (tot.)	0	-	-	0.6	4.1	2.9	2.7	0
-timber	0	-	-	0.6	1.5	0	0	0
-recreation	0	-	-	0	2.6	2.9	2.7	0
Reconstruction (tot.)	20	0	0	20	24	28	28	28
-timber	15	-	-	18	22	26	26	26
-recreation	5	-	-	2	2	2	2	2
Maintenance (tot.)	974	-	-	977	999	1017	1036	1041
Trails (miles)								
Construction (tot.)	0	-	-	27.0	26.8	0	0	0
-existing wilderness	0	-	-	0.7	0.6	0	0	0
-recommended wilderness	-	-	-	0	0	0	0	0
-concentrated rec. areas	0	-	-	9.0	9.0	0	0	0
-open NF	0	-	-	1.0	1.0	0	0	0
-OHV	0	-	-	2.5	2.5	0	0	0
-nordic	0	-	-	13.8	13.7	0	0	0
Reconstruction (tot.)	10.8	-	-	38.4	38.4	58.5	71.6	71.6
-existing wilderness	9.0	-	-	12.6	12.6	22.7	25.0	25.0
-recommended wilderness	-	-	-	0	0	0	0	0
-concentrated rec. areas	1.8	-	-	4.2	4.2	7.3	11.3	11.3
-open NF	0	-	-	2.2	2.2	2.5	2.9	2.9
-OHV	0	-	-	16.2	16.2	17.2	18.2	18.2
-nordic	0	-	-	3.2	3.2	8.8	14.2	14.2

Table 9 (continued)
Average Annual Outputs by Decade
Alternative RPA

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
Trails (cont'd)								
Maintenance (tot.)	1236	-	-	1506	1774	1774	1774	1774
LANDS AND MINERALS								
Land acquired (acres)	60	0	0	54	130	200	150	60
Leasable minerals (total power plants)	0	-	-	1	3	5	6	6
Locatable minerals (operating plans)	67	320	408	67	70	75	80	80
PROTECTION								
Fuel Treatment (acres)								
-total	18	500	400	1312	751	541	1213	1722
-fire related	0	-	-	0	0	0	0	0
-timber related	18	-	-	143	208	185	295	282
-range related	0	-	-	356	356	356	356	1440
-wildlife related	0	-	-	813	187	0	562	0
Expected Wildfire (acres)								
-total	747	-	-	918	981	1062	1134	1224
-intensity level 1	13	-	-	9	10	11	11	12
-intensity level 2	34	-	-	55	59	64	68	73
-intensity level 3	53	-	-	64	69	74	79	86
-intensity level 4	647	-	-	239	255	276	295	318
-intensity level 5	0	-	-	551	589	637	680	734
RANGE (M AUMs)	41.4	42.2	44.5	52.7	58.7	62.3	61.1	55.6
RECREATION USE (M RVD)								
Developed Public	1201	3510	5100	1674	2057	2249	2249	2250
Developed Private	1635			1914	2421	3131	3479	3479
Dispersed	1004	2490	3120	1191	1887	2103	2286	2446
Wilderness	540			637	671	705	739	771
Visual Quality Index	142.07	-	-	142.15	142.22	142.28	142.33	142.38

Table 9 (continued)
Average Annual Outputs by Decade
Alternative RPA

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
TIMBER								
(ASQ) (MMBF)	10.5	16.8	19.8	16.9	16.9	17.9	19.2	19.8
Long Term Sustained Yield (MMBF)	-	-	-	29.9	29.9	29.9	29.9	29.9
Reforestation (acres)	300	614	718	714	1040	926	1474	1410
Timber Stand Improvement (acres)	328	900	918	113	432	390	0	0
Fuelwood (M cords)	10.0	-	-	16.1	14.5	11.7	10.3	7.2
WATER								
Improvement (acres)	100	180	200	186	200	200	200	200
Quality (M acre-ft.)	1047	476	481	1052	1056	1060	1064	1068
Increased Quantity (M acre-feet)	0	-	-	15.0	0	0	0	0
WILDLIFE AND FISH								
Mule Deer								
(M animals total)	20.2	+20 percent		18.0	16.0	14.0	12.0	9.6
(M animals on Inyo)	12.0			11.2	9.9	8.7	7.4	5.9
Bald Eagle** (winter roosting areas)	1	-	-	1	1	1	1	1
Peregrine Falcon** (no. of pairs)	0	-	-	2	2	2	2	2
Goshawks (pairs in suitable timber)	15	-	-	14	13	12	11	9
Nelson Mountain Sheep (no. of animals)	130	-	-	130	130	130	130	130
Sierra Nevada Mountain Sheep (no. of animals)	300	-	-	330	360	390	420	450

Table 9 (continued)
Average Annual Outputs by Decade
Alternative RPA

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
WILDLIFE AND FISH (cont'd)								
Lahontan CT Trout* (acres of habitat)	1	-	-	.3	.5	.5	.5	.5
Paiute CT Trout* (acres of habitat)	3	-	-	1.3	1.8	1.8	1.8	1.8
Resident Trout (M pounds)	1632	+20 percent		1640	1649	1657	1665	1673
Total Wildlife/Fish User Days (M WFUDs)								
	391.0	-	-	392.1	396.2	401.9	408.3	415.0
-mule deer	25.2	-	-	23.5	20.8	18.3	15.5	12.4
-resident trout	340.0	-	-	341.7	343.4	345.1	346.8	348.5
-other	25.8	-	-	26.9	32.0	38.5	46.0	54.1
Derived from direct habitat improvement								
-mule deer	0.1	-	-	0.1	<0.1	0	0.1	0
-resident trout	0	-	-	1.3	2.6	3.9	5.2	6.6
-other	0	-	-	0.4	<0.1	0	0	0
Derived from induced habitat improvement								
-mule deer	0	-	-	0	0	0	0	0
-resident trout	0.1	-	-	0.4	0.8	1.2	1.6	1.9
-other	0.1	-	-	0.1	0.1	<0.1	0.2	0.1
Units of direct habitat improvement								
-mule deer (M acres)	0.5	-	-	1.0	0.3	0	1.1	0
-resident trout (ac)	0	0	0	5.3	5.3	5.3	5.2	5.2
-other (M acres)	0	-	-	3.0	0.2	0	0	0
HUMAN RESOURCES								
Programs (enrollees)	39	14	14	39	39	39	39	39
TOTAL BUDGET (MM$)	**9.9**	**11.1**	**12.2**	**12.0**	**13.7**	**15.8**	**17.2**	**20.6**
TOTAL COST (MM$)	**10.3**	**-**	**-**	**13.4**	**14.7**	**15.8**	**18.2**	**21.6**

* Threatened, ** Endangered.

CEE: MAXIMIZE COST-EFFICIENCY

Theme

This alternative seeks the most cost-effective mix of land allocations and management practices available on the Inyo National Forest, given the application of Minimum Management Requirements (MMRs), Timber Policy Requirements (TPRs), Minimum Implementation Requirements (MIRs), and Forest-wide Standards and Guidelines (FS&G).

The issues and concerns addressed by this alternative are: (1) maximizing cost-efficiency in resource management; (2) responding to the needs of regional recreationists, seasonal employees, and special use permittees; (3) providing the opportunity to maximize alpine skiing; (4) increasing the developed and dispersed recreation programs; (5) increasing opportunities for fishing and hunting; (6) recommending substantial acreage for wilderness.

If the Forest is managed with the single objective of maximizing cost-efficiency, the following conditions will be found:

Developed recreation (including alpine skiing) and dispersed recreation will be provided in response to projected demand to the extent possible, limited by supply; all potential sites will be developed and operated at standard levels of service.

Those Further Planning Areas with moderate to high potential for wilderness recreation use will be recommended for wilderness.

Timber outputs will be managed at cost-effective levels outside of developed recreation sites and ski areas, represeting an allowable sale quantity of 10.1 MMBF by the fifth decade.

The grazing program will be managed at cost-effective levels, representing 46.5 MAUMs, or a 12 percent increase over base year by the fifth decade.

Wildlife and fish habitat improvement for harvest species will be maximized in response to demand for hunting and fishing (the supply could not, however, meet that demand). Habitat for threatened and endangered species will be managed for recovery. Habitat for all other species will be managed for population viability.

Resource Program Direction

Cultural Resources: Inventory cultural resource properties (primarily in preparation for timber sales and other activities that could affect cultural properties) at a rate of approximately 12,000 acres per year, completing 33 percent of the Forest by the end of the fifth decade. Conduct other surveys as the opportunity arises. Meet cultural resource requirements by applying a balanced program of impact avoidance (protection), site-specifiic evaluations, and type-of-site evaluations. Develop and implement formal site protection, monitoring, enhancement, and interpretive activities in conjunction with the developed recreation program.

Facilities: Construct a total of 21 miles of road to facilitate timber management and 44 miles for developed recreation site access over the next 50 years. Construct a total of 725 miles of trail for hikers, equestrians, nordic skiers, and OHVs. Reconstruct the road and trail system on a programmed basis; maintain to assigned maintenance levels. Construct one additional administrative site for the new Mono Basin National Forest Scenic Area.

Fish: Improve a total of 211 acres of stream habitat in concentrated recreation areas and 56 acres in native golden trout habitat on the Kern Plateau. Establish 18 acres of habitat for threatened Paiute cutthroat trout and 5 acres for Lahontan cutthroat trout. Negotiate with FERC and the affected utility companies to rewater at least 27 acres of stream for the reestablishment of resident trout fisheries. Watershed improvement work will also benefit fish habitat.

Lands: Acquire lands (if they become available) in Lee Vining Canyon, Lundy Canyon, and the upper Owens River for summer recreation development. Coordinate landownership adjustments with community planning and Forest management objectives to provide for the community growth associated with increasing alpine ski area capacity.

Minerals: Encourage the development of geothermal resources according to current agreements in Lease Blocks I and II. Consider additional geothermal exploration and development in response to lease applications on any additional Forest lands outside of designated or recommended wilderness. Allow for mineral exploration and development to be restricted by the large acreage in recommended wilderness.

Pest Management: Respond to the high overall need and opportunity for pest management based on the high levels of developed recreation use and new site construction and the moderate opportunity to manage vegetation associated with moderate timber outputs.

Protection: Apply the following fire management program: (1) prevention and detection represent 17 percent of the program; (2) suppression and aviation represent 83 percent of the program; (3) there is no fuels treatment for fire management purposes; (4) total staffing is reduced from the 1982 level; and (5) all appropriate wildfire suppression strategies (confinement, containment, and control) are applied.

Range: Intensify range management with an annual average of 1,250 acres of vegetation treatment over the five decades. Accomplish 486 acres of this total by prescribed burning. Allow for a reduction in grazing due to vegetation changes resulting from timber management on lands suitable for both timber and range management. Apply the guideline of 50 percent forage utilization by livestock. Do not increase livestock grazing on deer winter range. Give priority to mule deer in key fawning areas, developing specific direction in allotment management plans.

Recreation: Develop potential campgrounds and day-use sites as needed to meet the demand for developed recreation. Develop those sites with the greatest projected use first (water-oriented sites in concentrated recreation areas have the greatest projected use; sites away from water and concentrated

use areas have the lowest projected use). Develop interpretive sites as the opportunity arises. Operate facilities and administer permits at standard level of service.

Develop new concentrated recreation areas in the Walker Lake-Sawmill Canyon and Deadman expansion areas. Develop an additional concentrated recreation area in the upper Owens River area if private land along the river becomes available.

Consider proposals to increase alpine ski area capacity 15,000 to 30,000 SAOT over the 31,000 currently approved. Added capacity will probably involve all potential ski areas.

Manage for increasing dispersed use that will result from full development of summer overnight developed sites and more than three times the current wintertime overnight base in local communities. Manage for the increased use associated with upgrading of U.S. 395 and State Highway 203, improved access into currently unroaded areas, and the development of a moderate-sized nordic ski area in the upper Dry Creek-Deadman Creek area. Provide a full complement of trails, restrooms, parking areas, and interpretive signs to enhance year-round recreational opportunities and protect resources. Manage dispersed use at standard levels of service.

Encourage summer OHV use, including an increase of 47 percent in open OHV area acreage. Restrict winter OHV use only to the degree needed to minimize conflicts with wilderness or alpine and nordic ski areas.

Manage the following lands in continuing unroaded condition with an emphasis on primitive and semi-primitive dispersed recreation: lands outside wilderness and concentrated recreation areas in the Rock Creek drainage and the Mammoth Lakes Basin; Glass Mountain Ridge.

Research Natural Areas: Complete the establishment process for the Whippoorwill Flat and McAfee Meadow RNAs.

Riparian Areas: Prohibit new activities in riparian areas that will have unacceptable long-term effects on water quality, fish (or other aquatic animals), or water-dependent plant life. The fish habitat and watershed improvement work discussed under separate headings will also be expected to benefit riparian areas.

Special Interest Areas: Evaluate identified candidate Special Interest Areas and establish those selected.

Timber: Manage timber for high level production on all suitable lands where timber management is cost-effective with the following exceptions:

1. Do not harvest timber in developed recreation sites or alpine ski areas. (Allow for timber harvest in concentrated recreation areas.)

2. Modify timber management as needed to meet the Retention Visual Quality Objective in the foreground zones of scenic highways.

Provide fuelwood in response to demand. If the supply of logging residue falls below the demand for fuelwood, consider supplying some fuelwood out of the programmed harvest.

Visual Resources: Assign prescribed Visual Quality Objectives with the following exceptions:

1. Timber harvest must meet the VQO of Retention or Partial Retention as inventoried) in the foreground zones of state-designated scenic highways.

2. Ski lifts and runs must meet or exceed the VQO of Modification; base facilities must meet or exceed Maximum Modification.

3. Summer developed recreation sites must be located and designed (or rehabilitated) to meet or exceed the VQO of Modification as seen from Sensitivity Level 1 roads.

Watershed: Implement the watershed improvement needs (WIN) plan at an average rate of 470 acres per year, resulting in the completion of all the work identified in that plan by the end of the fifth decade.

Wild and Scenic Rivers: Wild and Scenic River recommendations are the same for all alternatives; those recommendations that are described above under the heading of Management Prescriptions are area-specific in all Alternatives.

Wilderness: Recommend the following Further Planning Areas for wilderness designation: Coyote Southeast, Laurel-McGee, Tioga Lake, Log Cabin-Saddlebag, and White Mountains. Containment will be the primary wildfire suppression strategy for natural fires in wilderness.

Wildlife: Maintain overall mule deer habitat capacity to the extent possible given timber harvest, geothermal development, and ski area development on migration routes. Enhance deer habitat by vegetation treatment, emphasizing key winter range at an average rate of 744 acres per year (372 acres of which will be accomplished by prescribed burning).

Maintain the integrity of the existing bald eagle winter roosting area.

Provide for two nesting pairs of reintroduced peregrine falcons.

Maintain nine goshawk nesting territories of 50 acres each in suitable timber.

Provide for no additional Sierra Nevada or Nelson mountain sheep reintroductions.

Maintain 10 percent of all forested lands (but no suitable timber) in older seral stages.

Maintain or create snags in managed timber stands to meet at least 40 percent of the natural potential density of snag-dependent wildlife; allow for higher densities outside of managed timber.

Environment to be Created in the Year 2030

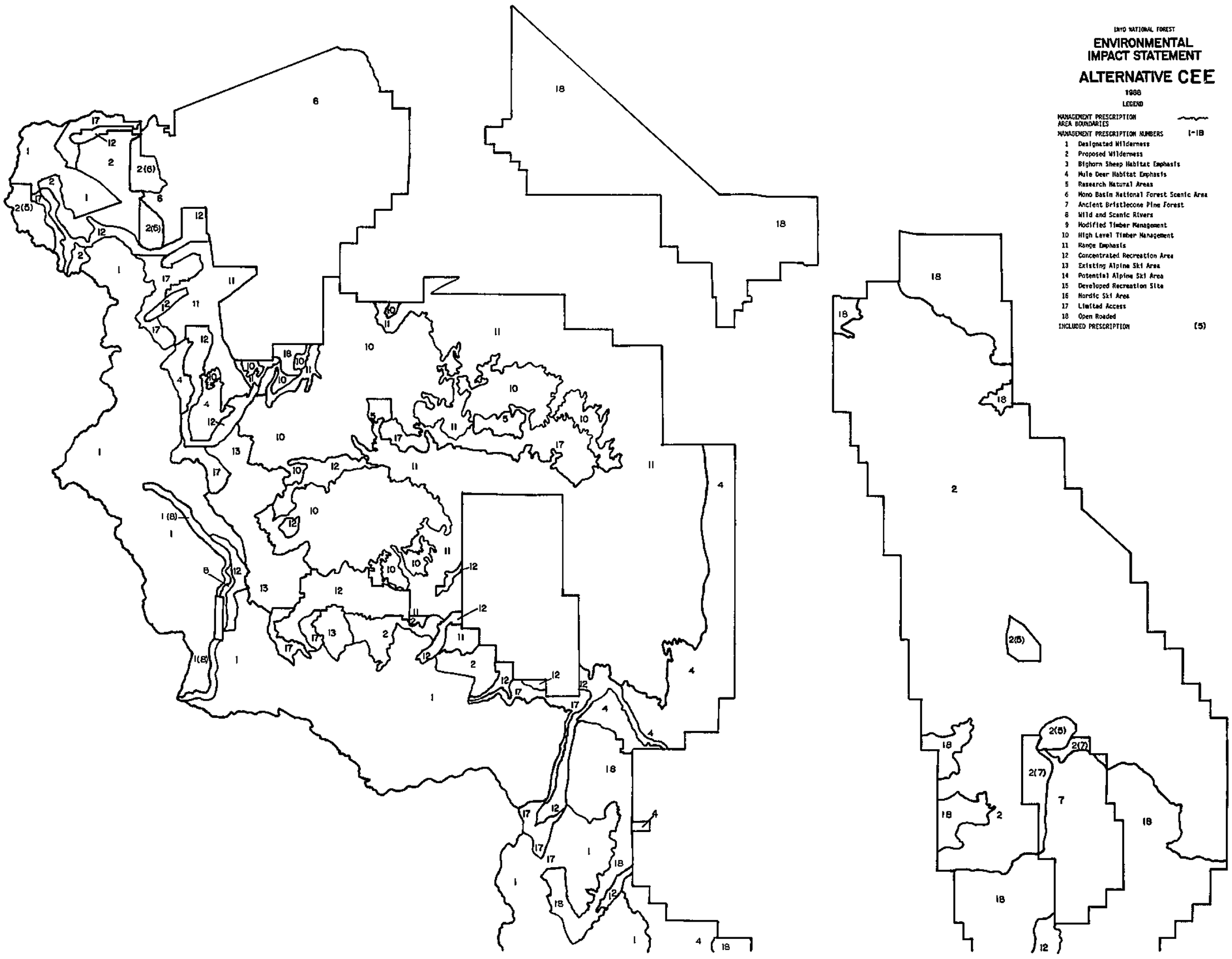
Summer visitors to the Forest in the year 2030 will find noticeably more recreationists, as use will have increased nearly 60 percent since 1982. There will many be more campgrounds, day-use sites, and trails of all kinds. Facilities will be better maintained and services will have improved. On the other hand, the recreation experience will be compromised in concentrated recreation areas with suitable timber, as that timber will be harvested outside of developed sites.

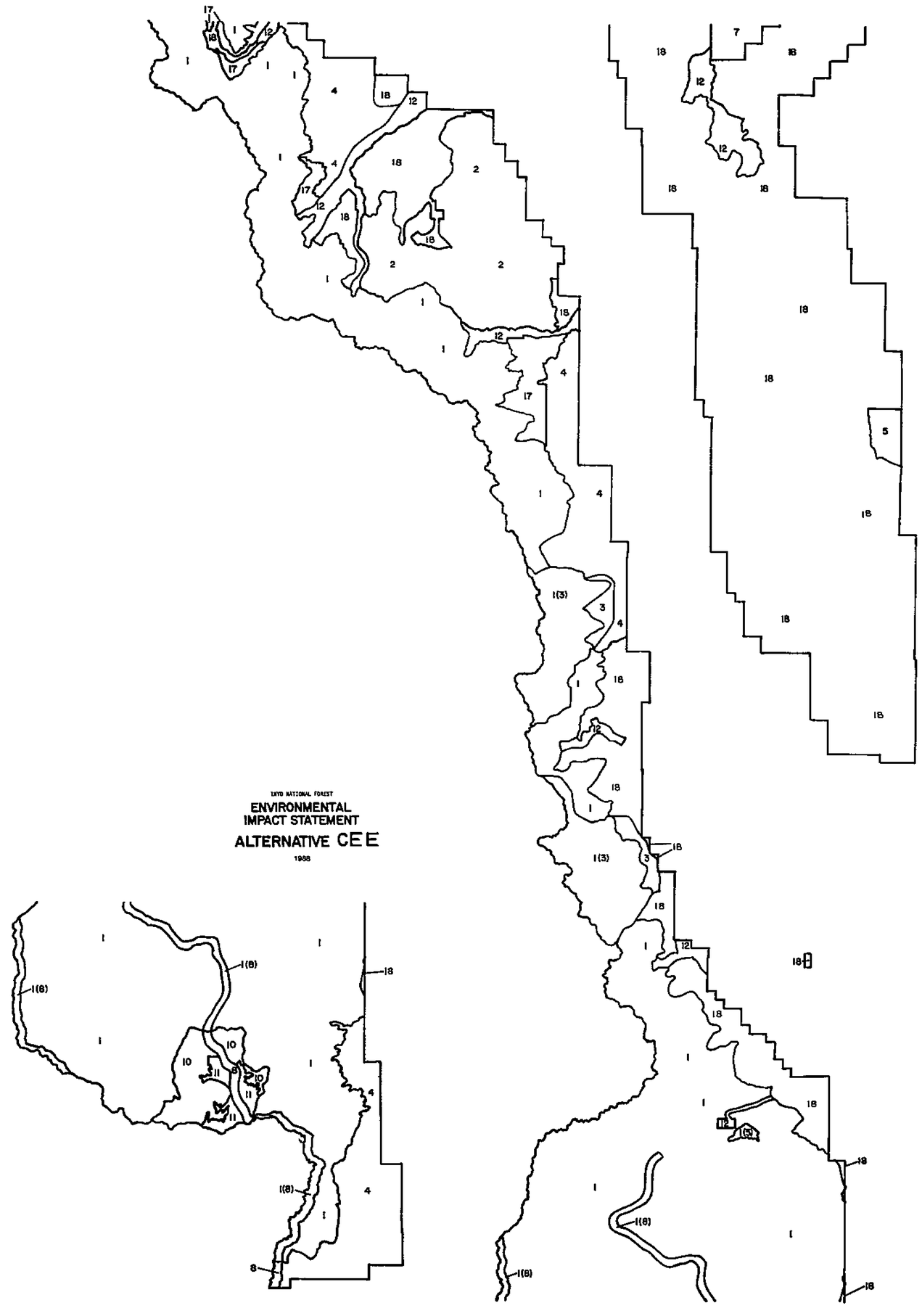
Anglers will find increased fishing opportunities due both to full stream habitat enhancement and full watershed improvement. Hunters, on the other hand will experience substantially declining deer populations where ski areas, geothermal development, community growth, and timber harvest had obstructed migration routes and improved access, increasing overall use and disturbance of deer habitat.

The type of use in the Monache area will have changed with improved access for timber harvest. More people will use the area as a wilderness entry point, and fewer will find the remote camping and four-wheel drive recreation typical of 1982. Visitors to the White Mountains will see some increase in use by backpackers and stock parties using the wilderness. Use of the Coyote Plateau will change due to wilderness designation. Most of the existing vehicle-based camping, fishing, and driving for pleasure will be lost, as vehicles will be confined to constructed roads. Non-motorized recreation will increase, as potential conflicts with vehicle users will be eliminated.

Vegetation will differ little in appearance as seen from U.S. 395, State Highway 203, and other Scenic Highways. Views from other roads and viewpoints north and east of Mammoth Lakes and in the Monache area will show a moderate increase in plantations of small trees and logging debris. Timber harvest will also be found in concentrated recreation areas with suitable timber.

Winter visitors will encounter three times as many alpine skiers and skiing opportunities as in 1982. Mammoth and June Mountains will have developed fully, and additional skiing will be found in the Sherwin Bowl, Minaret Summit, Mammoth Knolls, San Joaquin Ridge, and White Wing areas. Nordic trails and support facilities will have developed Forest-wide. The communities of Mammoth and June Lake will have grown and urbanized dramatically in support of increased skiing.


INYO NATIONAL FOREST
ENVIRONMENTAL IMPACT STATEMENT
ALTERNATIVE CEE
1986
LEGEND
MANAGEMENT PRESCRIPTION AREA BOUNDARIES
MANAGEMENT PRESCRIPTION NUMBERS 1-18
1 Designated Wilderness
2 Proposed Wilderness
3 Bighorn Sheep Habitat Emphasis
4 Mule Deer Habitat Emphasis
5 Research Natural Areas
6 Mono Basin National Forest Scenic Area
7 Ancient Bristlecone Pine Forest
8 Wild and Scenic Rivers
9 Modified Timber Management
10 High Level Timber Management
11 Range Emphasis
12 Concentrated Recreation Area
13 Existing Alpine Ski Area
14 Potential Alpine Ski Area
15 Developed Recreation Site
16 Nordic Ski Area
17 Limited Access
18 Open Roaded
INCLUDED PRESCRIPTION (5)



UVD NATIONAL FOREST

ENVIRONMENTAL IMPACT STATEMENT

ALTERNATIVE CEE

1986

Table 10
Acreage Allocations by Management Prescription
Alternative CEE

Management Prescription	M Acres	Percent of Forest
1. Designated Wilderness	565.1	29.4
2. Proposed Wilderness	339.8	17.6
3. Mountain Sheep	4.9	0.3
4. Mule Deer Emphasis	108.1	5.6
5. Research Natural Area*	6.3 (9.3)	0.3
6. Mono Basin NF Scenic Area*	40.2 (4.8)	2.1
7. Ancient Bristlecone Pine Forest*	21.5 (6.0)	1.1
8. Wild and Scenic River*	4.3 (19.4)	0.2
9. Uneven-aged Timber Management	0	0
10. High Level Timber Management	97.7	5.1
11. Range	144.4	7.5
12. Concentrated Recreation Area	44.1	2.3
13. Alpine Ski Area, Existing and Under Study	21.8	1.1
14. Potential Alpine Ski Area	0	0
15. Developed Recreation Site	2.1	0.1
16. Dispersed Recreation	0	0
17. Semi-Primitive Recreation	68.0	3.4
18. Multiple Resource Area	461.4	23.9

* Acres with dual designation (existing or proposed wilderness and RNA, Scenic Area, etc.) are displayed in the acreage total for Prescriptions 1 or 2 and indicated in parentheses under the other applicable prescription.

Table 11
Average Annual Outputs by Decade
Alternative CEE

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
FACILITIES								
Administrative Sites								
-Forest Service owned (no.)	6	-	-	8	8	8	8	8
-leased (no.)	1	-	-	0	0	0	0	0
Dams and Reservoirs								
-Forest Service (no.)	3	-	-	3	3	3	3	3
-State/local (no.)	4	-	-	4	4	4	4	4
-private (no.)	11	-	-	11	11	11	11	11
Roads (miles)								
Construction (tot.)	0	-	-	0.6	3.5	2.4	0	0
-timber	0	-	-	0.6	1.5	0	0	0
-recreation	0	-	-	0	2.0	2.4	0	0
Reconstruction (tot.)	20	-	-	21	21	21	21	21
-timber	15	-	-	16	16	16	16	16
-recreation	5	-	-	5	5	5	5	5
Maintenance (tot.)	974	-	-	977	1001	1022	1031	1040
Trails (miles)								
Construction (tot.)	0	-	-	26.3	26.2	10.0	10.0	0
-existing wilderness	-	-	-	0.7	0.6	0	0	0
-recommended wilderness	0	-	-	3.0	3.0	0	0	0
-concentrated rec. areas	0	-	-	9.0	9.0	0	0	0
-open NF	0	-	-	1.0	1.0	0	0	0
-OHV	0	-	-	2.6	2.6	0	0	0
-nordic	0	-	-	10.0	10.0	10.0	10.0	0
Reconstruction (tot.)	10.8	-	-	36.3	36.3	59.9	76.3	76.3
-existing wilderness	9.0	-	-	12.6	12.6	22.7	25.0	25.0
-recommended wilderness	-	-	-	0.6	0.6	1.7	2.4	2.4
-concentrated rec. areas	0	-	-	4.2	4.2	7.3	11.3	11.3
-open NF	0	-	-	2.2	2.2	2.5	2.9	2.9
-OHV	0	-	-	13.5	13.5	14.5	15.5	15.5
-nordic	0	-	-	3.2	3.2	11.2	19.2	19.2

Table 11 (continued)
Average Annual Outputs by Decade
Alternative CEE

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
Trails (cont'd)								
Maintenance (tot.)	1236	-	-	1517	1767	1867	1967	1967
LANDS AND MINERALS								
Land acquired (acres)	60	0	0	54	270	270	150	70
Leasable minerals (total power plants)	0	-	-	1	3	5	6	6
Locatable minerals (operating plans)	67	320	408	46	48	51	55	55
PROTECTION								
Fuel Treatment (acres)								
-total	18	500	400	1412	376	373	791	2023
-fire related	0	-	-	0	0	0	0	0
-timber related	18	-	-	61	58	57	88	117
-range related	0	-	-	316	316	316	316	1168
-wildlife related	0	-	-	1035	2	0	387	738
Expected Wildfire (acres)								
-total	747	-	-	1134	1213	1300	1395	1410
-intensity level 1	13	-	-	9	10	10	11	11
-intensity level 2	34	-	-	124	132	142	152	154
-intensity level 3	53	-	-	70	75	80	86	87
-intensity level 4	647	-	-	313	335	359	385	389
-intensity level 5	0	-	-	618	661	709	761	769
RANGE (M AUMs)	41.4	42.4	44.5	48.6	50.4	53.6	54.0	46.5
RECREATION USE (M RVD)								
Developed Public	1201	3510	5100	1772	2252	2252	2252	2252
Developed Private	1635			1914	2421	3131	3895	4024
Dispersed	1004	2490	3120	1190	1820	2157	2281	2441
Wilderness	540			667	711	762	815	838
Visual Quality Index	142.07	-	-	142.10	142.12	142.14	142.16	142.16

Table 11 (continued)
Average Annual Outputs by Decade
Alternative CEE

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
TIMBER								
ASQ (MMBF)	10.5	16.8	19.8	8.3	8.3	8.3	8.3	10.1
Fuelwood (M cords)	10.0	-	-	7.2	12.9	9.7	5.1	5.0
Long Term Sustained Yield (MMBF)	-	-	-	24.7	24.7	24.7	24.7	24.7
Reforestation (acres)	300	614	718	307	288	284	442	558
Timber Stand Improvement (acres)	328	900	918	578	480	106	0	0
WATER								
Quality (M acre-ft.)	1047	476	481	1051	1055	1059	1063	1067
Increased Quantity (M acre-feet)	-	-	-	7.0	0	0	0	0
Watershed Improvement (acres)	100	180	200	500	500	500	500	350
WILDLIFE AND FISH								
Mule Deer								
(M animals total)	20.2	+20 percent		20.0	19.5	18.8	18.1	17.4
(M animals on Inyo)	12.0			11.9	11.6	11.1	10.7	10.3
Bald Eagle** (winter roosting areas)	1	-	-	1	1	1	1	1
Peregrine Falcon** (no. of pairs)	0	-	-	2	2	2	2	2
Goshawks (pairs in suitable timber)	15	-	-	14	13	12	11	9
Nelson Mountain Sheep (no. of animals)	130	-	-	130	130	130	130	130
Sierra Nevada Mountain Sheep (no. of animals)	300	-	-	330	360	390	420	450

Table 11 (continued)
Average Annual Outputs by Decade
Alternative CEE

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
WILDLIFE AND FISH (cont'd)								
Lahontan CT Trout* (acres of habitat)	1	-	-	.3	.5	.5	.5	.5
Paiute CT Trout* (acres of habitat)	3	-	-	1.3	1.8	1.8	1.8	1.8
Resident Trout (M pounds)	1632	+20 percent		1643	1655	1666	1678	1689
Total Wildlife/Fish User Days (M WFUDs)	391.0	-	-	394.3	398.5	402.5	409.3	414.8
- mule deer	25.2	-	-	25.0	24.4	23.3	22.5	21.6
- resident trout	340.0	-	-	342.4	344.8	347.2	349.6	351.9
- other	25.8	-	-	26.9	29.3	32.0	37.2	41.3
Derived from direct habitat improvement								
- mule deer	0.1	-	-	0.2	<0.1	0	0.1	0.2
- resident trout	.0	-	-	1.5	3.0	4.5	6.0	7.5
- other	0	-	-	0.3	0	0	0	0
Derived from induced habitat improvement								
- mule deer	0	-	-	0	0	0	0	0
- resident trout	0.1	-	-	0.9	1.8	2.7	3.6	4.4
- other	0.1	-	-	0.2	0.1	0.1	0.2	0.2
Units of direct habitat improvement								
- mule deer (M ac.)	0.5	-	-	1.5	0.1	0	0.8	1.4
- resident trout (ac.)	0	0	0	5.9	5.9	5.9	5.9	5.8
- other (M ac.)	0	-	-	2.8	0	0	0	0
HUMAN RESOURCES								
Programs (enrollees)	39	14	14	39	39	39	39	39
TOTAL BUDGET (MM$)	**9.9**	**11.1**	**12.2**	**11.9**	**13.4**	**13.5**	**14.3**	**17.1**
TOTAL COST (MM$)	**10.3**	**-**	**-**	**12.8**	**14.3**	**14.4**	**15.2**	**18.0**

*Threatened, **Endangered.

AMN: MAXIMIZE AMENITY VALUES

Theme

Under this alternative, amenities are maximized with little regard for the effects on commodity outputs. Wilderness, wildlife, and primitive and semi-primitive dispersed recreation are emphasized. There is no budget limitation in the FORPLAN model.

The issues and concerns addressed by this alternative are: (1) considering the importance of amenity values as an aspect of net public benefit; (2) managing vegetative diversity, riparian areas, and wildlife habitat at levels above minimum management requirements; (3) emphasizing the quality of primitive and semi-primitive types of recreation while deemphasizing the quantity of outputs; and (4) recommending substantial acreage for wilderness.

The wilderness land base will be increased by the addition of all Further Planning Areas that are at least minimally suitable for wilderness, considering wilderness characteristics and boundary manageability.

Wildlife habitat will be managed with the objectives of: (1) increasing mule deer habitat capacity at least 20 percent in response to the RPA goal; (2) maximizing habitat for threatened and endangered species; (3) meeting the RPA goal of at least maintaining current habitat capacity for cavity-nesting birds; (4) maximizing habitat capacity for sensitive and special interest species; and (5) maintaining or enhancing habitat for all other native vertebrate species. Fish habitat will be managed with the objectives of responding to projected levels of dispersed recreation and maximizing habitat for threatened trout.

Dispersed recreation will be managed with an emphasis on the quality of the experience, rather than the quantity of use. Primitive and semi-primitive opportunities and a high level of scenic quality will be emphasized. Developed summer recreation will be managed with the objective of maintaining current levels of use through the fifth decade. Alpine ski area development will increase at a rate that responds to demand to the level projected in the Mammoth-Mono Unit Plan.

Timber will be managed for commercial production to the extent compatible with cost efficiency and amenity objectives.

Domestic livestock grazing will be managed to the extent compatible with wildlife objectives.

Resource Program Direction

Cultural Resources: Complete the Forest-wide inventory of cultural resource properties by the year 2030, at an average rate of 45,000 acres per year, including both project-specific and formal surveys. Meet cultural resource requirements for project implementation using a balanced program of impact avoidance (protection), site-specific evaluations, and type-of-site evaluations. Develop and implement a formal site protection and monitoring program. Undertake cultural resource enhancement and interpretation activities as the opportunity arises.

Facilities: Construct a total of 14 miles of road for developed recreation site access, but no new roads for timber management over the next 50 years. Construct a total of 429 miles of trail for hikers, equestrians, nordic skiers, and OHVs. Reconstruct the road and trail system on a programmed basis; maintain to assigned maintenance levels. Construct one additional administrative site for the new Mono Basin National Forest Scenic Area.

Fish: Improve a total of 134 acres of stream habitat in concentrated recreation areas and 56 acres in native golden trout habitat on the Kern Plateau. Establish 24 acres of habitat for threatened Paiute cutthroat trout and 16 acres for Lahontan cutthroat trout. Negotiate with FERC and the affected utility companies to rewater at least 27 acres of stream for the reestablishment of resident trout fisheries. Watershed improvement work will also benefit fish habitat.

Lands: Pursue landownership adjustments to protect or enhance wilderness values, wildlife or fish habitat, dispersed recreation, or visual resource values.

Minerals: Encourage the development of geothermal resources according to current agreements in Lease Blocks I and II. Consider additional geothermal exploration and development in response to lease applications on any additional Forest lands outside of designated or recommended wilderness. Allow mineral activity to be restricted by the large acreage in recommended wilderness.

Pest Management: Respond to the low overall need and opportunity for pest management based on the low levels of developed recreation use and lack of new site construction and the low level opportunity to manage vegetation associated with low level timber outputs.

Protection: Apply the following fire management program: (1) prevention and detection represent 17 percent of the program; (2) suppression and aviation represent 83 percent of the program; (3) there is no fuels treatment for fire management purposes; (4) total staffing at the 1982 level; and (5) all appropriate wildfire suppression strategies (confinement, containment, and control) are applied.

Range: Intensify the management of rangelands by an average of 690 acres of vegetation treatment per year where compatible with amenity objectives; treat by prescribed burning on 348 of those acres. Allow for grazing to be reduced due to vegetation changes resulting from timber management on lands suitable for both timber and range management. Apply the guideline of 50 percent forage utilization by livestock. Remove cattle from key mule deer winter range. Delay grazing in key fawning habitat until after July 15.

Recreation: Retain all existing concentrated recreation areas and existing developed sites. Construct new interpretive and day-use facilities as the opportunity arises. Operate facilities and administer permits at standard level of service.

Consider proposals to increase alpine ski area capacity to the 31,000 SAOT currently approved. Added capacity will be limited to the existing Mammoth and June Mountain ski areas.

Manage for increasing dispersed use that will result from a greatly expanded wilderness base, the projected upgrading of U.S. 395 and Highway 203, the expansion of existing nordic ski resorts, and a 50 percent increase in the winter overnight base in local communities. Manage dispersed recreation use by developing a moderate number of trails and other facilities to protect soil, water quality, and vegetation. Manage dispersed use at standard levels of service.

Emphasize control of OHV use. Minimize the number of open areas in response to the Forest-wide emphasis on non-motorized recreation and the large acreage in wilderness.

Maintain the following lands in continuing unroaded condition with an emphasis on dispersed recreation in the Primitive and Semi-Primitive ROS categories: the Monache area, the Coyote Plateau outside recommended wilderness, lands outside wilderness and concentrated recreation areas in the Mammoth Lakes Basin and the upper Rock Creek drainage, the Sherwin Bowl area, unroaded lands along and to the east of San Joaquin Ridge, and Glass Mountain Ridge.

Research Natural Areas: Complete the establishment process for the Whippoorwill Flat and McAfee Meadow RNAs.

Riparian Areas: Prohibit any new activities in riparian areas that will have unacceptable long-term effects on water quality, fish (or other aquatic animals), or water-dependent plant life. The fish habitat and watershed improvement work discussed under separate headings will also be expected to benefit riparian areas.

Special Interest Areas: Evaluate identified candidate Special Interest Areas and recommend the establishment of those selected by 1990.

Timber: Manage timber under the uneven-aged management system on suitable lands with the following exceptions:

1. Do not manage for commercial timber outputs on existing or potential concentrated recreation areas or developed alpine ski areas, or lands with a primitive/semiprimitive recreation emphasis.

2. Modify timber management as needed to meet the Retention Visual Quality Objective in the foreground zones of Sensitivity Level 1 and 2 roads.

Provide fuelwood in response to demand. If the supply of logging residue falls below the demand for fuelwood, consider supplying some fuelwood out of the programmed harvest.

Visual Resources: Assign prescribed Visual Quality Objectives (VQOs) with the following exceptions.

1. Timber management must meet or exceed the VQOs of Retention in the foreground zones of Sensitivity Level 1 or 2 roads and trails, and Partial Retention on all other lands. Openings should be limited to 20 acres or less.

2. Ski lifts, runs, and base facilities must meet or exceed the Partial Retention VQO from any viewpoint.

3. Activities in areas managed under the Semi-Primitive Recreation Prescription with an emphasis on visual quality or dispersed recreation must meet the Retention VQO.

Watershed: Implement the Watershed Improvement Needs (WIN) plan at an average rate of 470 acres per year, resulting in the completion of all work identified in that plan by the end of the fifth decade.

Wild and Scenic Rivers: Wild and Scenic River recommendations are the same under all alternatives. Those recommendations are described above under the heading of Management Prescriptions that are area-specific in all alternatives.

Wilderness: Recommend the following Further Planning Areas for wilderness designation: Coyote SE, Table Mountain, Buttermilk, Wheeler Ridge, Laurel-McGee, Horse Meadow, Tioga Lake, Hall Natural Area, Log Cabin-Saddlebag, White Mountains, Andrews Mountain, and the Paiute area. Containment will be the primary wildfire suppression strategy for natural fires in wilderness.

Wildlife: Increase mule deer habitat capacity at least 20 percent in response to the RPA goal. Prohibit timber management and ski area development on migration routes. Enhance deer habitat by vegetation treatment, emphasizing key winter range at an average rate of 820 acres per year (410 acres of which will be accomplished by prescribed burning). Remove livestock from key deer winter range. Defer grazing on key fawning areas until after July 15.

Maintain the integrity of the existing bald eagle winter roosting area.

Provide for four nesting pairs of reintroduced peregrine falcons.

Maintain all existing goshawk nesting territories in suitable timber; allocate 100 acres to each nesting pair.

Provide for seven additional herds of reintroduced Sierra Nevada mountain sheep if suitable habitat can be found.

Provide for one Nelson mountain sheep reintroduction.

Maintain at least 30 percent of suitable timber in older seral stages. Of that acreage, ensure that approximately 6,500 acres are adequately distributed throughout the affected timber types.

Maintain or create snags to meet 100 percent of the natural potential density of snag-dependent wildlife.

Environment to be Created in the Year 2030

Summer visitors to the Forest in the year 2030 will find only a slight increase in recreationists, as no additional campgrounds will have been developed. There will, however, be more day-use sites and trails of all kinds. Facilities will be better maintained and services will have improved.

Anglers will find increased fishing opportunities due to a moderate amount of stream habitat enhancement and full implementation of the watershed improvement program. Hunters will also experience improved opportunities, as deer populations will have increased with habitat improvement; removal of cattle from winter range; protection of migration routes and fawning areas; and the overall low levels of development, improved access, and increased use.

The type of use in the Monache area will remain the same, as the area will still be accessible only to four-wheel drive vehicles. Visitors to the White and Inyo Mountains will see some increase in use by backpackers and stock parties using the wilderness. Use of the Coyote Plateau will change under wilderness designation. Most of the existing vehicle-based camping, fishing, and driving for pleasure will be lost, as vehicles will be confined to constructed roads. Non-motorized recreation will increase, as potential conflicts with vehicle users will be eliminated.

Vegetation will differ little in appearance from any viewpoint. Plantations of small trees and logging debris will be even less prevalent than in 1982.

Winter visitors will encounter a 50 percent increase in alpine skiers and skiing opportunities. Mammoth and June Mountains will have developed fully, but no additional ski areas will have developed. Nordic trails and support facilities will have developed Forest-wide. The communities of Mammoth and June Lake will have grown and urbanized somewhat in support of increased skiing.

INYO NATIONAL FOREST

ENVIRONMENTAL IMPACT STATEMENT

ALTERNATIVE AMN

1980

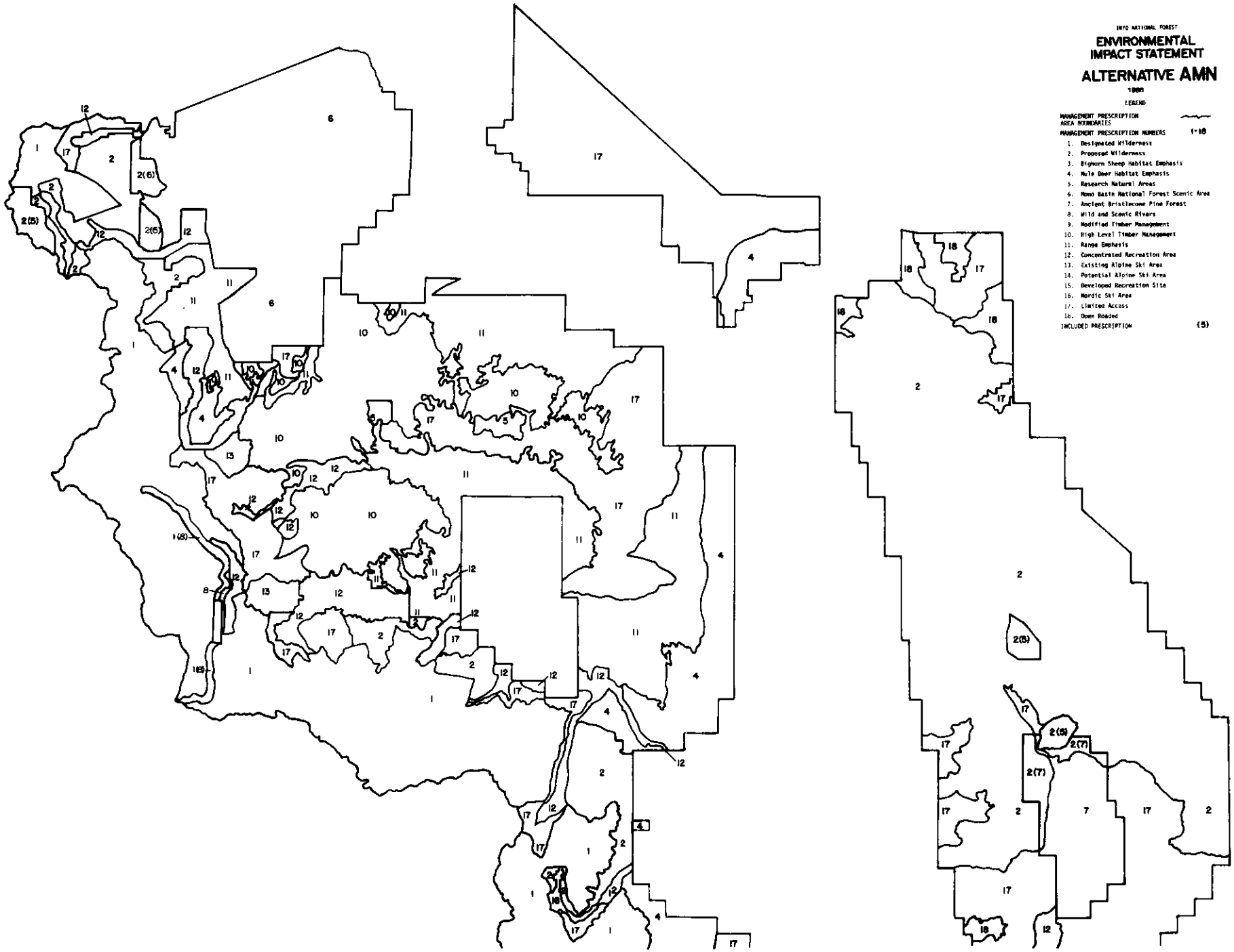
LEGEND

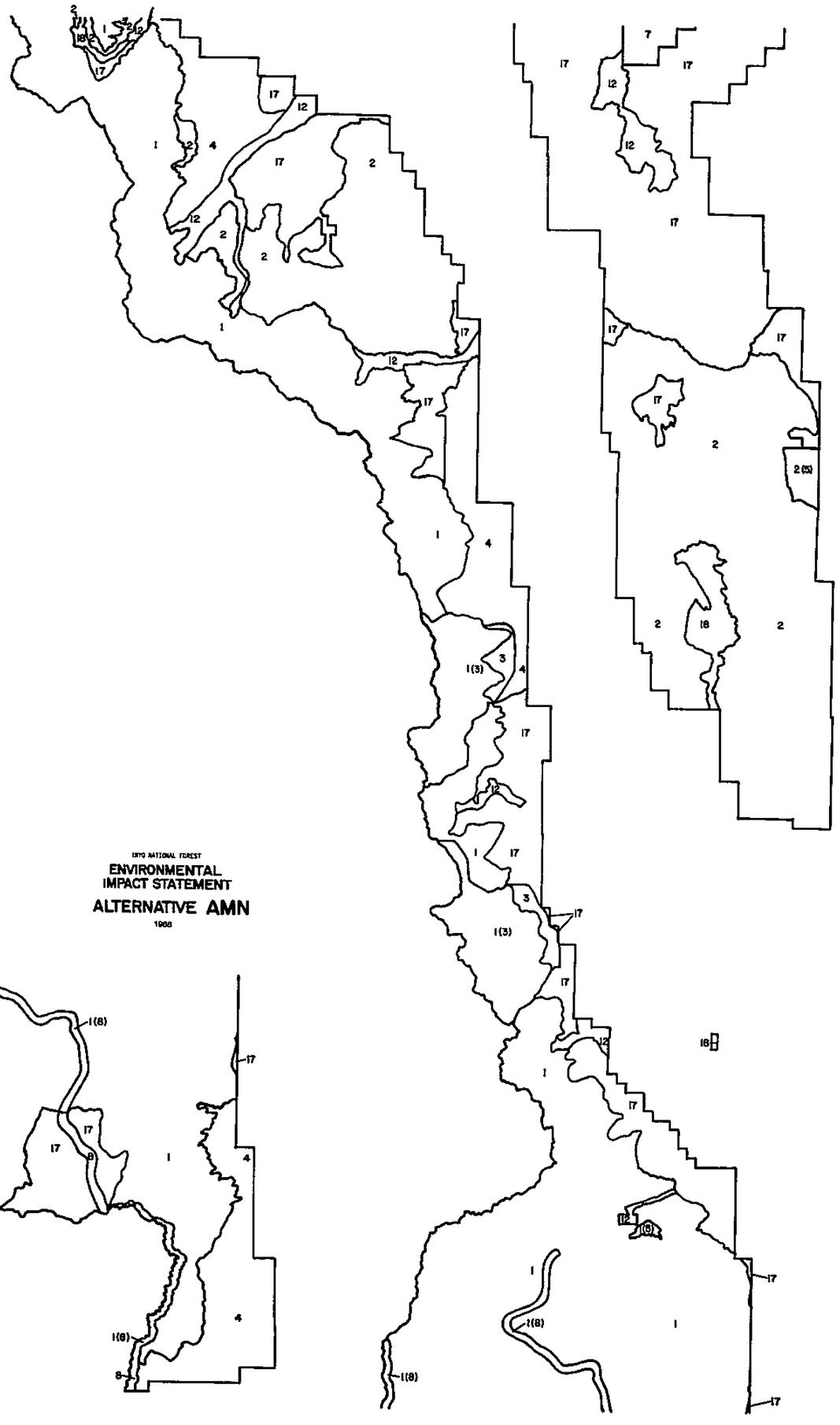
MANAGEMENT PRESCRIPTION AREA BOUNDARIES

MANAGEMENT PRESCRIPTION NUMBERS 1-18

1. Designated Wilderness
2. Proposed Wilderness
3. Bighorn Sheep Habitat Emphasis
4. Mule Deer Habitat Emphasis
5. Research Natural Areas
6. Mono Basin National Forest Scenic Area
7. Ancient Bristlecone Pine Forest
8. Wild and Scenic Rivers
9. Modified Timber Management
10. High Level Timber Management
11. Range Emphasis
12. Concentrated Recreation Area
13. Existing Alpine Ski Area
14. Potential Alpine Ski Area
15. Developed Recreation Site
16. Nordic Ski Area
17. Limited Access
18. Open Roaded

INCLUDED PRESCRIPTION (5)





UINTA NATIONAL FOREST

ENVIRONMENTAL IMPACT STATEMENT

ALTERNATIVE AMN

1988

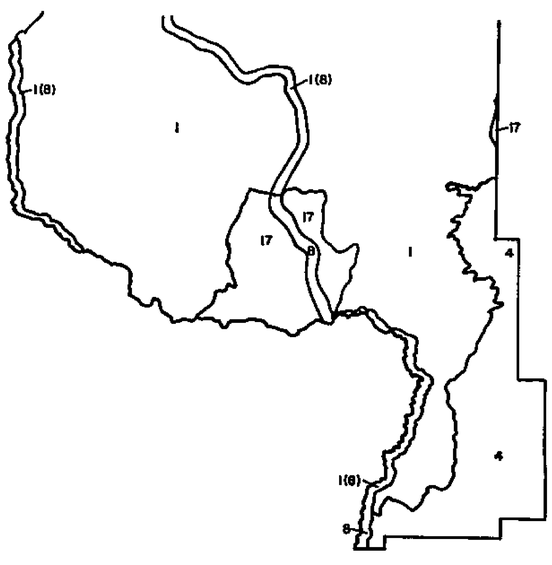


Table 12
Acreage Allocations by Management Prescription
Alternative AMN

Management Prescription	M Acres	Percent of Forest
1. Designated Wilderness	565.1	29.4
2. Proposed Wilderness	510.8	26.5
3. Mountain Sheep	4.9	0.3
4. Mule Deer	117.6	6.1
5. Research Natural Area*	3.0 (12.6)	0.2
6. Mono Basin NF Scenic Area*	40.2 (4.8)	2.1
7. Ancient Bristlecone Pine Forest*	21.5 (6.0)	1.1
8. Wild and Scenic River*	4.3 (19.4)	0.2
9. Uneven-aged Timber Management	97.3	4.9
10. High Level Timber Management	0	0
11. Range	95.8	4.9
12. Concentrated Recreation Area	48.2	2.5
13. Alpine Ski Area, Existing and Under Study	6.2	0.3
14. Potential Alpine Ski Area	0	0
15. Developed Recreation Site	1.4	0.1
16. Dispersed Recreation	0	0
17. Semi-Primitive Recreation	387.0	20.0
18. Multiple Resource Area	26.4	1.4

* Acres with dual designation (existing or proposed wilderness and RNA, Scenic Area, etc.) are displayed in the acreage total for Prescriptions 1 or 2 and indicated in parentheses under the other applicable prescription.

Table 13
Average Annual Outputs by Decade
Alternative AMN

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
FACILITIES								
Administrative Sites								
-Forest Service owned (no.)	6	-	-	8	8	8	8	8
-leased (no.)	1	-	-	0	0	0	0	0
Dams and Reservoirs								
-Forest Service (no.)	3	-	-	3	3	3	3	3
-State/local (no.)	4	-	-	4	4	4	4	4
-private (no.)	11	-	-	11	11	11	11	11
Roads (miles)								
Construction (tot.)	0	-	-	1.4	0	0	0	0
-timber	0	-	-	0	0	0	0	0
-recreation	0	-	-	1.4	0	0	0	0
Reconstruction (tot.)	20	-	-	13	13	13	13	13
-timber	15	-	-	11	11	11	11	11
-recreation	5	-	-	2	2	2	2	2
Maintenance (tot.)	974	-	-	981	984	988	993	998
Trails (miles)								
Construction (tot.)	0	-	-	19.0	18.9	5.0	0	0
-existing wilderness	0	-	-	0.7	0.6	0	0	0
-recommended wilderness	-	-	-	3.3	3.3	0	0	0
-concentrated rec. areas	0	-	-	4.0	4.0	0	0	0
-open NF	0	-	-	1.0	1.0	0	0	0
-OHV	0	-	-	0	0	0	0	0
-nordic	0	-	-	10.0	10.0	5.0	0	0
Reconstruction (tot.)	10.8	-	-	34.9	34.8	52.6	64.5	64.4
-existing wilderness	9.0	-	-	12.6	12.6	22.7	25.0	25.0
-recommended wilderness	-	-	-	1.9	1.8	2.6	5.2	5.1
-concentrated rec. areas	1.8	-	-	4.2	4.2	5.8	7.4	7.4
-open NF	0	-	-	2.2	2.2	2.5	2.9	2.9
-OHV	0	-	-	10.8	10.8	10.8	10.8	10.8
-nordic	0	-	-	3.2	3.2	8.2	13.2	13.2

Table 13 (continued)
Average Annual Outputs by Decade
Alternative AMN

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
Trails (cont'd)								
Maintenance (tot.)	1236	-	-	1489	1678	1728	1728	1728
LANDS AND MINERALS								
Land acquired (acres)	60	0	0	54	220	220	120	60
Leasable minerals (total power plants)	0	-	-	1	3	5	6	6
Locatable minerals (operating plans)	67	320	408	29	30	32	33	33
PROTECTION								
Fuel Treatment (acres)								
-total	18	500	400	1461	266	297	735	1565
-fire related	0	-	-	0	0	0	0	0
-timber related	18	-	-	6	6	17	51	66
-range related	0	-	-	202	280	280	280	696
-wildlife related	0	-	-	1253	0	0	404	803
Expected Wildfire (acres)								
-total	747	-	-	927	972	972	972	972
-intensity level 1	13	-	-	9	10	10	10	10
-intensity level 2	34	-	-	57	58	58	58	58
-intensity level 3	53	-	-	65	68	68	68	68
-intensity level 4	647	-	-	241	253	253	253	253
-intensity level 5	0	-	-	556	583	583	583	583
RANGE (M AUMs)	41.4	42.2	44.5	35.6	35.6	38.0	38.0	35.1
RECREATION USE (M RVDs)								
Developed Public	1201	3510	5100	1293	1293	1293	1293	1293
Developed Private	1635			1914	2330	2330	2330	2330
Dispersed	1004	2490	3120	1114	1302	1579	1642	1738
Wilderness	540			680	724	777	834	863
Visual Quality Index	142.07	-	-	142.34	142.59	142.84	142.08	143.31

Table 13 (continued)
Average Annual Outputs by Decade
Alternative AMN

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
TIMBER								
ASQ (MMBF)	10.5	16.8	19.8	2.7	3.5	4.2	5.1	6.3
Fuelwood (M cords)	10.0	-	-	4.2	8.2	3.0	3.2	3.0
Long Term Sustained Yield (MMBF)	-	-	-	15.6	15.6	15.6	15.6	15.6
Reforestation (acres)	300	614	718	32	32	84	255	332
Timber Stand Improvement (acres)	328	900	918	539	392	0	0	0
WATER								
Quality (M acre-ft.)	1047	476	481	1052	1062	1072	1082	1088
Increased Quantity (M acre-feet)	0	-	-	0	0	0	0	0
Watershed Improvement (acres)	100	180	200	500	500	500	500	350
WILDLIFE AND FISH								
Mule Deer								
(M animals total)	20.2	+20 percent		20.7	21.2	21.7	22.2	22.6
(M animals on Inyo)	12.0			12.5	13.0	13.5	14.0	14.4
Bald Eagle** (winter roosting areas)	1	-	-	1	1	1	1	1
Peregrine Falcon** (no. of pairs)	0	-	-	2	3	4	4	4
Goshawks (pairs in suitable timber)	15	-	-	15	15	15	15	15
Nelson Mountain Sheep (no. of animals)	130	-	-	140	154	154	154	154
Sierra Nevada Mountain Sheep (no. of animals)	300	-	-	350	400	500	700	1000

Table 13 (continued)
Average Annual Outputs by Decade
Alternative AMN

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
WILDLIFE AND FISH (cont'd)								
Lahontan CT Trout* (acres of habitat)	1	-	-	.3	.5	.9	1.3	1.6
Paiute CT Trout* (acres of habitat)	3	-	-	1.3	1.8	1.8	2.1	2.4
Resident Trout (M pounds)	1632	+20 percent		1641	1651	1661	1670	1679
Total Wildlife/Fish User Days (M WFUDs)	391.0	-	-	395.0	403.2	409.7	416.7	411.6
- mule deer	25.2	-	-	26.2	27.3	28.3	29.4	30.2
- resident trout	340.0	-	-	341.9	343.9	345.9	347.9	349.7
- other	25.8	-	-	26.9	32.0	35.5	39.4	31.7
Derived from direct habitat improvement								
- mule deer	0.1	-	-	0.2	0	0	0.1	0.2
- resident trout	0	-	-	1.0	2.1	3.2	4.3	5.3
- other	0	-	-	0.6	0	0	0	0.2
Derived from induced habitat improvement								
- mule deer	0	-	-	0	0	0	0	0
- resident trout	0.1	-	-	0.9	1.8	2.7	3.6	4.4
- other	0.1	-	-	0.3	0.1	0.1	0.2	0.2
Units of Direct Habitat Improvement								
- mule deer (M acres)	0.5	-	-	1.8	0	0	0.8	1.5
- resident trout (ac.)	0	0	0	4.4	4.4	4.3	4.3	4.3
- other (M acres)	0	-	-	3.4	0	0	0	0.3
HUMAN RESOURCES								
Programs (enrollees)	39	14	14	39	39	39	39	39
TOTAL BUDGET (MM$)	**9.9**	**11.1**	**12.2**	**12.9**	**9.9**	**10.4**	**11.6**	**13.1**
TOTAL COST (MM$)	**10.3**	**-**	**-**	**13.9**	**10.9**	**11.4**	**12.6**	**14.1**

*Threatened, **Endangered.

AMB - EMPHASIZE WILDLIFE AND RECREATION

Theme

This alternative places a primary emphasis on the quality and quantity of wildlife habitat with a secondary emphasis on moderate expansion of the developed recreation program. Other commodity outputs are produced to the degree compatible with wildlife and recreation objectives. Amenity values other than wildlife receive a moderate degree of emphasis. There is no budget limitation.

The issues and concerns addressed in this alternative are: (1) managing habitat for fish and wildlife above minimum management requirements; (2) restoring and enhancing riparian areas; (3) offering a full and diverse recreation program; (4) recommending substantial acreage for wilderness; and (5) maintaining current levels of grazing in suitable timber.

Wildlife habitat will be managed with the objectives of: (1) increasing mule deer habitat capacity; (2) maximizing habitat for threatened and endangered species; (3) maximizing habitat for sensitive and special interest species; and (4) moderately improving ecological diversity to enhance habitat for other native vertebrate species. Fish habitat will be managed with the objectives of responding to projected increases in dispersed recreation, and maximizing habitat for threatened trout.

Developed recreation will be managed with the objective of increasing use 30 to 35 percent by the year 2030. Alpine ski area development will increase in response to demand where compatible with wildlife objectives. The management of dispersed summer and winter recreation will provide for an increase in use roughly proportional to developed site use.

The wilderness land base will be increased by the addition of Further Planning Areas with moderate to high wilderness recreation values and/or ecological types not yet represented in wilderness on the Inyo.

Domestic livestock grazing will be managed to the extent compatible with wildlife objectives.

Timber will be managed for maximum production to the extent compatible with cost-efficiency and wildlife, recreation, and range objectives.

Resource Program Direction

Cultural Resources: Complete the Forest-wide inventory of cultural resource properties by the year 2030, at an average rate of 45,000 acres per year, including both project-specific and formal surveys. Meet cultural resource requirements using a balanced program of impact avoidance (protection), site-specific evaluations, and type-of-site evaluations. Develop and implement a formal site protection and monitoring program. Emphasize cultural resource enhancement and interpretation in association with the developed recreation program.

Facilities: Construct a total of 38 miles of road for developed recreation site access, but no new roads to facilitate timber management over the next

50 years. Construct a total of 509 miles of trail for hikers, equestrians, nordic skiers, and OHVs. Reconstruct the road and trail system on a programmed basis; maintain to assigned maintenance levels. Construct one additional administrative site for the new Mono Basin National Forest Scenic Area.

Fish: Improve a total of 156 acres of stream habitat in concentrated recreation areas and 56 acres in native golden trout habitat on the Kern Plateau. Establish 24 acres of habitat for threatened Paiute cutthroat trout and 16 acres for Lahontan cutthroat trout. Negotiate with FERC and the affected utility companies to rewater at least 27 acres of stream for the reestablishment of resident trout fisheries. Watershed improvement work will also benefit fish habitat.

Lands: Pursue landownership adjustments to protect and enhance key habitat for emphasized wildlife species. Acquire lands (if they become available) in Lee Vining Canyon and Lundy Canyon for recreation purposes.

Minerals: Encourage the development of geothermal resources according to current agreements in Lease Blocks I and II. Consider additional geothermal exploration and development in response to lease applications on any additional Forest lands outside of designated or recommended wilderness. Allow for mineral activity to be restricted by the moderately large acreage in recommended wilderness.

Pest Management: Respond to the moderate overall need and opportunity for pest management based on the moderate levels of developed recreation use and new site construction and the moderate opportunity to manage vegetation associated with moderate timber outputs.

Protection: Apply the following fire management program: (1) prevention and detection represent 17 percent of the program; (2) suppression and aviation represent 83 percent of the program; (3) there is no fuels treatment for fire management purposes; (4) total staffing at the 1982 level; and (5) all appropriate wildfire suppression strategies (confinement, containment, and control) are applied.

Range: Intensify the management of rangelands with an average of 830 acres of vegetation treatment per year where compatible with wildlife objectives; treat 498 of those acres by prescribed burning. Maintain current levels of grazing on lands suitable for both timber and range management. Apply the guideline of 50 percent forage utilization by livestock. Remove livestock from key mule deer winter range. Delay grazing in key fawning habitat until after July 15.

Recreation: Develop potential campgrounds and day-use sites with an emphasis on potential sites with the greatest projected use such as water-oriented sites in concentrated recreation areas. Develop interpretive sites as the opportunity arises. Operate facilities and administer permits at standard levels of service. Maintain all existing concentrated recreation areas.

Consider proposals to increase alpine ski area capacity 6,000 to 12,000 SAOT over the 31,000 currently approved. Added capacity will be envisioned for

the Minaret Summit, Mammoth Knolls, and White Wing potential ski areas to minimize conflicts with mule deer migration routes.

Manage for the increasing dispersed use that will result from moderate development of campgrounds and more than doubling the wintertime overnight base in local communities. Manage for the increased use associated with the projected upgrading of U.S. 395 and State Highway 203, an enlarged wilderness base, and the development of a major nordic ski area in the upper Dry Creek-Deadman Creek area. Provide a moderate level of trails, restrooms, parking areas, and interpretive signs to enhance year-round recreational opportunities and protect resources. Manage dispersed use at standard levels of service.

Control OHV use, including a reduction both in open summer and open winter area acreage.

Maintain the following lands in continuing unroaded condition with an emphasis on primitive and semi-primitive dispersed recreation: the Monache area, the Coyote Plateau outside recommended wilderness, lands outside wilderness and concentrated recreation areas in the Rock Creek drainage and the Mammoth Lakes Basin, the White and Inyo Mountains outside wilderness, and the Excelsior Mountains.

Research Natural Areas: Complete the establishment process for the Whippoorwill Flat and McAfee Meadow RNAs.

Riparian Areas: Prohibit new activities in riparian areas that will have unacceptable long-term effects on water quality, fish (or other aquatic animals), or water-dependent plant life. The fish habitat and watershed improvement work discussed under separate headings will also be expected to benefit riparian areas.

Special Interest Areas: Evaluate identified candidate Special Interest Areas and recommend establishment for those selected.

Timber: Manage timber for high level production where cost-effective on all suitable timber lands with the following exceptions:

1. Manage for moderate level production in the area east of San Joaquin Ridge and south of Deadman Creek.

2. Do not manage for commercial timber outputs on existing or potential concentrated recreation areas, developed alpine ski areas, or lands managed with a primary emphasis on primitive and semiprimitive recreation.

3. Modify timber management as needed to meet the Retention Visual Quality Objective in the foreground zones of Sensitivity Level 1 roads.

Provide fuelwood in response to demand. If the supply of logging residue falls below the demand for fuelwood, consider supplying some fuelwood out of the programmed harvest.

Visual Resources: Assign prescribed Visual Quality Objectives (VQOs) with the following exceptions.

1. Ski lifts, runs, and base areas must meet or exceed the VQO of Partial Retention from any viewpoint.

2. Activities on lands managed under the limited access prescription with an emphasis on dispersed recreation must meet the VQO of Retention.

3. Timber openings should be limited to 20 acres or less.

Watershed: Implement the Watershed Improvement Needs (WIN) plan at an average rate of 470 acres per year, resulting in the completion of all work identified in that plan by the end of the fifth decade.

Wild and Scenic Rivers: Wild and Scenic River recommendations are the same for all alternatives; those recommendations are described above under the heading of Management Prescriptions that are area-specific in all alternatives.

Wilderness: Recommend the following Further Planning Areas for wilderness designation: the western third of Coyote Southeast, Laurel-McGee, Tioga Lake, and Log Cabin-Saddlebag, the upper elevations of White Mountains/Boundary Peak, and the Pauite area. Containment will be the primary wildfire suppression strategy for natural fires in wilderness.

Wildlife: Enhance mule deer habitat by an average of 580 acres annual vegetation treatment on key winter range; apply prescribed burning to 260 of those acres. Remove cattle from key deer winter range. Delay grazing in key fawning habitat until after July 15. Prohibit ski area development or timber harvest on deer migration routes.

Maintain the integrity of the existing bald eagle winter roosting area.

Provide for four nesting pairs of reintroduced peregrine falcons.

Maintain all existing goshawk nesting territories in suitable timber; allocate 100 acres to each nesting pair.

Provide for seven additional herds of reintroduced Sierra Nevada mountain sheep if suitable habitat can be found.

Provide for one Nelson mountain sheep reintroduction.

Maintain at least 20 percent of suitable timber in older seral stages. Ensure that approximately 6,500 acres of this acreage is adequately distributed throughout the affected timber types.

Maintain or create snags to meet 100 percent of the natural potential density of snag-dependent wildlife.

Environment to be Created in the Year 2030

Summer visitors to the Forest in the year 2030 will find a moderate increase in recreationists. There will be additional campgrounds in the most heavily-used areas, and there will be more day-use sites and trails of all kinds Forest-wide. Facilities will be better maintained and services will have improved.

Anglers will find increased fishing opportunities due to a moderate amount of stream habitat enhancement and full implementation of the watershed improvement program. Hunters will also experience improved opportunities, as deer populations will have increased due to habitat improvement, removal of cattle from winter range, and protection of migration routes and fawning areas.

The type of use in the Monache area will remain the same, as the area will still be accessible only to four-wheel drive vehicles. Visitors to the White and Inyo Mountains will see some increase in use by backpackers and stock parties using the wilderness. Use of the Coyote Plateau will have changed very little, as the recommended wilderness portion of that area has traditionally been used for nonmotorized recreation.

Vegetation will differ little in appearance from any viewpoint. Plantations of small trees and logging debris will be even less prevalent than in 1982.

Winter visitors will encounter more than twice the alpine skiers and skiing opportunities as in 1982. Mammoth and June Mountains will have developed fully, along with additional ski areas in the Minaret Summit, Mammoth Knolls, and White Wing areas. There will be a major nordic resort in the upper Dry Creek-Deadman Creek area. Additional nordic trails and support facilities will have developed Forest-wide. The communities of Mammoth and June Lake will have grown and urbanized considerably in support of increased skiing.

INYO NATIONAL FOREST

ENVIRONMENTAL IMPACT STATEMENT

ALTERNATIVE AMB

1988

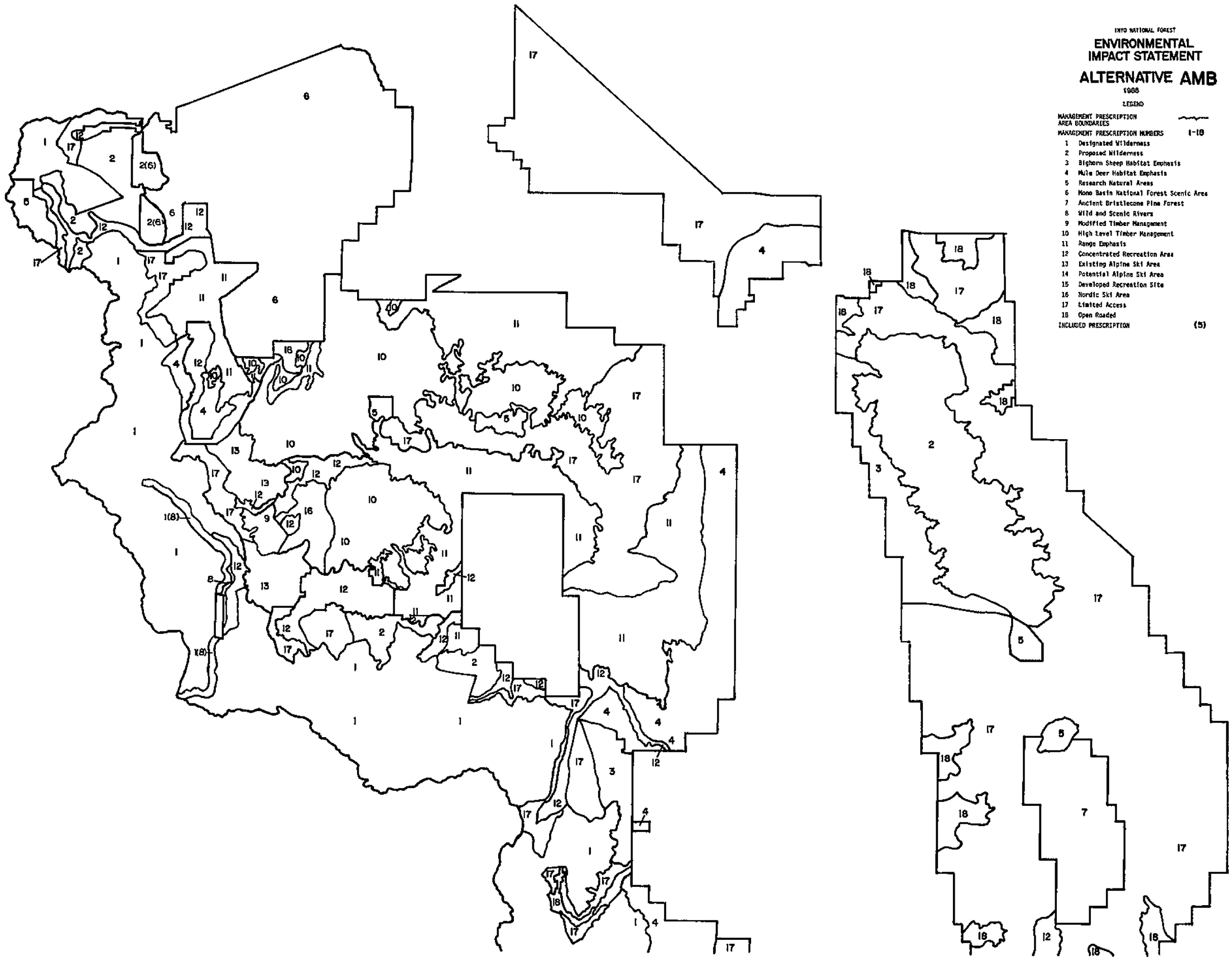
LEGEND

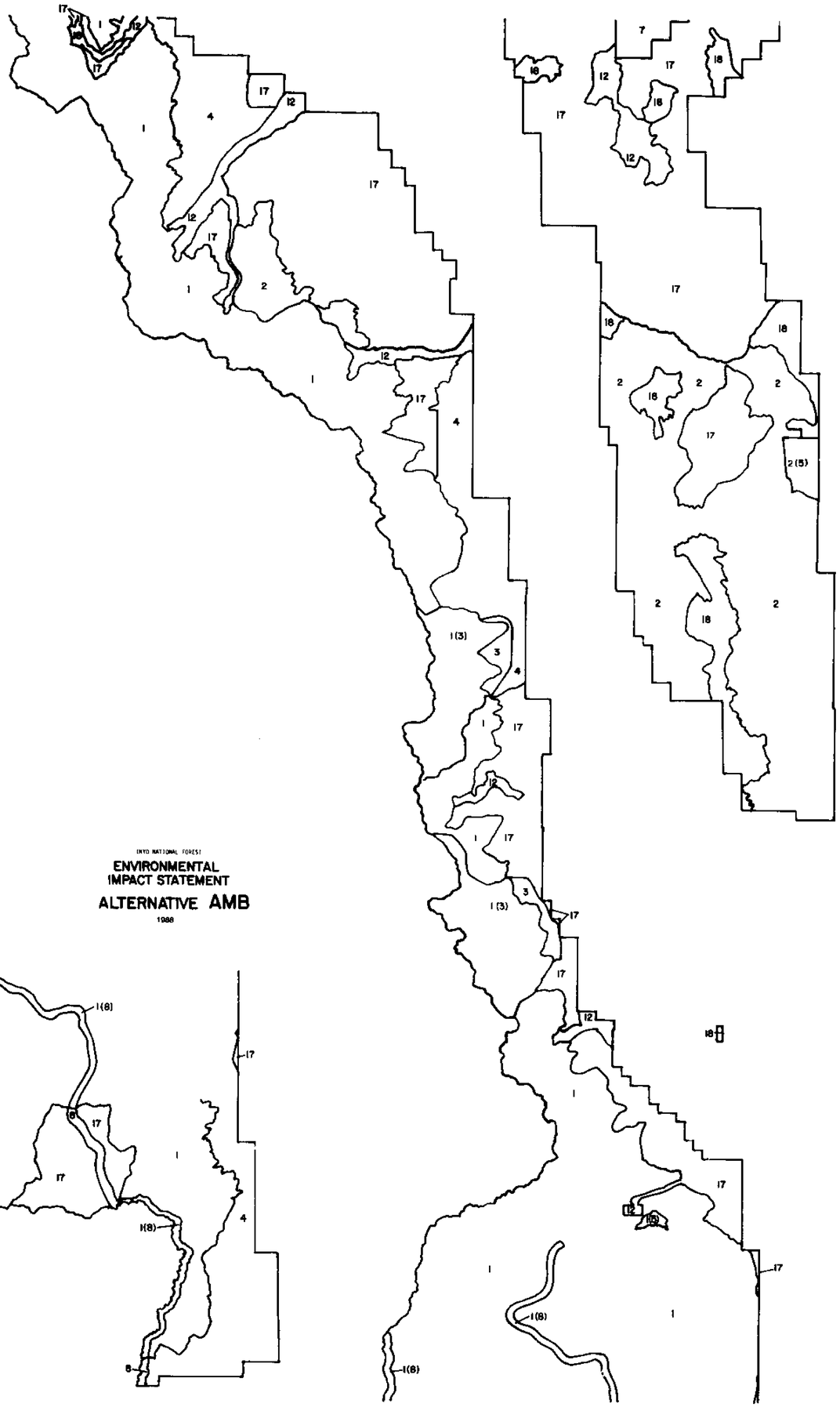
MANAGEMENT PRESCRIPTION AREA BOUNDARIES

MANAGEMENT PRESCRIPTION NUMBERS 1-18

1 Designated Wilderness
2 Proposed Wilderness
3 Bighorn Sheep Habitat Emphasis
4 Mule Deer Habitat Emphasis
5 Research Natural Areas
6 Mono Basin National Forest Scenic Area
7 Ancient Bristlecone Pine Forest
8 Wild and Scenic Rivers
9 Modified Timber Management
10 High Level Timber Management
11 Range Emphasis
12 Concentrated Recreation Area
13 Existing Alpine Ski Area
14 Potential Alpine Ski Area
15 Developed Recreation Site
16 Nordic Ski Area
17 Limited Access
18 Open Roaded

INCLUDED PRESCRIPTION (5)





INYO NATIONAL FOREST

ENVIRONMENTAL IMPACT STATEMENT

ALTERNATIVE AMB

1988

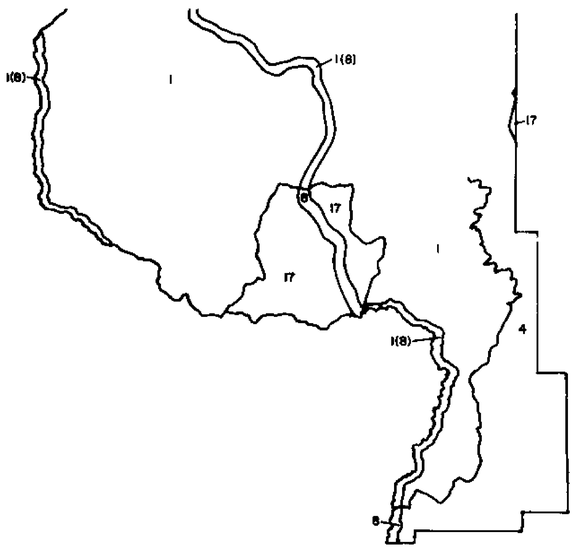


Table 14
Acreage Allocations by Management Prescription
Alternative AMB

Management Prescription	M Acres	Percent of Forest
1. Designated Wilderness	565.1	29.4
2. Proposed Wilderness	222.7	11.5
3. Mountain Sheep	32.0	1.7
4. Mule Deer	118.3	6.0
5. Research Natural Area*	11.6 (4.0)	0.6
6. Mono Basin NF Scenic Area*	40.2 (4.8)	2.1
7. Ancient Bristlecone Pine Forest*	27.5	1.4
8. Wild and Scenic River*	4.3 (19.4)	0.2
9. Uneven-aged Timber Management	2.9	0.1
10. High Level Timber Management	86.7	4.5
11. Range	101.4	5.3
12. Concentrated Recreation Area	46.1	2.4
13. Alpine Ski Area, Existing and Under Study	14.6	0.8
14. Potential Alpine Ski Area	0	0
15. Developed Recreation Site	1.9	0.1
16. Dispersed Recreation	6.8	0.4
17. Semi-Primitive Recreation	589.4	30.5
18. Multiple Resource Area	58.2	3.0

*Acres with dual designation (existing or proposed wilderness and RNA, Scenic Area, etc.) are displayed in the acreage total for Prescriptions 1 or 2 are indicated in parentheses under the other applicable prescription.

Table 15
Average Annual Outputs by Decade
Alternative AMB

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
FACILITIES								
Administrative Sites								
-Forest Service owned (no.)	6	-	-	8	8	8	8	8
-leased (no.)	1	-	-	0	0	0	0	0
Dams and Reservoirs								
-Forest Service (no.)	3	-	-	3	3	3	3	3
-State/local (no.)	4	-	-	4	4	4	4	4
-private (no.)	11	-	-	11	11	11	11	11
Roads (miles)								
Construction (tot.)	0	-	-	0	2.4	1.4	0	0
-timber	0	-	-	0	0	0	0	0
-recreation	0	-	-	0	2.4	1.4	0	0
Reconstruction (tot.)	20	-	-	17	17	17	17	17
-timber	15	-	-	14	14	14	14	14
-recreation	5	-	-	3	3	3	3	3
Maintenance (tot.)	974	-	-	974	989	1000	1005	1010
Trails (miles)								
Construction total	0	-	-	20.5	20.4	10.0	0	0
-existing wilderness	0	-	-	0.7	0.7	0	0	0
-recommended wilderness	-	-	-	2.8	2.8	0	0	0
-concentrated rec. areas	0	-	-	6.0	6.0	0	0	0
-open NF	0	-	-	1.0	1.0	0	0	0
-OHV	0	-	-	0	0	0	0	0
-nordic	0	-	-	10.0	10.0	10.0	0	0
Reconstruction (tot.)	10.8	-	-	37.5	37.5	56.6	70.2	70.2
-existing wilderness	9.0	-	-	12.6	12.6	22.7	25.0	25.0
-recommended wilderness	-	-	-	1.8	1.8	2.1	4.6	4.6
-concentrated rec. areas	1.8	-	-	4.2	4.2	6.6	9.0	9.0
-open NF	0	-	-	2.2	2.2	2.5	2.9	2.9
-OHV	0	-	-	13.5	13.5	13.5	13.5	13.5
-nordic	0	-	-	3.2	3.2	9.2	15.2	15.2

Table 15 (continued)
Average Annual Outputs by Decade
Alternative AMB

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
Trails (cont'd)								
Maintenance (tot.)	1236	-	-	1498	1702	1802	1802	1802
LANDS AND MINERALS								
Land acquired (acres)	60	0	0	54	270	270	150	70
Leasable minerals (total power plants)	0	-	-	1	3	5	6	6
Locatable minerals (operating plans)	67	320	408	50	52	56	57	57
PROTECTION								
Fuel Treatment (acres)								
-total	18	500	400	1521	766	412	551	1326
-fire related	0	-	-	0	0	0	0	0
-timber related	18	-	-	19	34	35	59	84
-range related	0	-	-	290	342	342	342	1172
-wildlife related	0	-	-	1212	390	35	150	70
Expected Wildfire (acres)								
-total	747	-	-	918	990	1071	1080	1080
-intensity level 1	13	-	-	9	10	11	11	11
-intensity level 2	34	-	-	55	59	64	65	65
-intensity level 3	53	-	-	64	69	75	76	76
-intensity level 4	647	-	-	239	257	278	281	281
-intensity level 5	0	-	-	551	594	643	648	648
RANGE (M AUMs)	41.4	42.2	44.5	37.3	39.0	42.4	43.4	39.4
RECREATION USE (M RVDs)								
Developed Public	1201	3510	5100	1448	1448	1735	1832	2024
Developed Private (total)	1635			1914	2421	2885	2885	2885
Dispersed	1004	2490	3120	1189	1496	1819	2010	2264
Wilderness	540			675	716	767	818	837

Table 15 (continued)
Average Annual Outputs by Decade
Alternative AMB

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
TIMBER								
ASQ (MMBF)	10.5	16.8	19.8	5.1	6.2	6.2	7.5	9.2
Fuelwood (M cords)	10.0	-	-	11.9	8.3	3.8	4.3	4.7
Long Term Sustained Yield (MMBF)	-	-	-	18.9	18.9	18.9	18.9	18.9
Reforestation (acres)	300	614	718	96	168	173	296	421
Timber Stand Improvement (acres)	328	900	918	558	353	0	0	0
WATER								
Improvement (acres)	100	180	200	500	500	500	500	350
Quality (M acre-ft.)	1047	476	481	1052	1062	1072	1082	1088
Increased Quantity (M acre-feet)	-	-	-	1.7	0.5	0.5	0.5	0.5
WILDLIFE AND FISH								
Mule Deer (M animals total)	20.2	+20 percent		20.2	20.7	21.2	21.7	22.2
(M animals on Inyo)	12.0			12.0	12.5	13.0	13.5	14.0
Bald Eagle** (winter roosting areas)	1	-	-	1	1	1	1	1
Peregrine Falcon** (no. of pairs)	0	-	-	2	3	4	4	4
Goshawks (pairs in suitable timber)	15	-	-	15	15	15	15	15
Nelson Mountain Sheep (no. of animals)	130	-	-	140	154	154	154	154
Sierra Nevada Mountain Sheep (no. of animals)	300	-	-	350	400	500	700	1000

Table 15 (continued)
Average Annual Outputs by Decade
Alternative AMB

Resource Elements	Base Year	1980 RPA Goals		Decades (Decade 1: 1986-1995)				
	1982	1990	2030	1	2	3	4	5
WILDLIFE AND FISH (cont'd)								
Lahontan CT Trout* (acres of habitat)	1	-	-	.3	.5	.9	1.3	1.6
Paiute CT Trout* (acres of habitat)	3	-	-	1.3	1.8	1.8	2.1	2.4
Resident Trout (M pounds)	1632	+20 percent		1642	1652	1662	1672	1682
Total Wildlife/Fish User Days (M WFUDs)	391.0	-	-	394.2	399.7	405.6	415.2	424.7
-mule deer	25.2	-	-	25.2	26.2	27.3	28.3	29.4
-resident trout	340.0	-	-	342.1	344.2	346.3	348.4	350.4
-other	25.8	-	-	26.9	29.3	32.0	38.5	44.9
Derived from direct habitat improvement								
-mule deer	0.1	-	-	0.2	0.1	0	<0.1	<0.1
-resident trout	0	-	-	1.2	2.4	3.6	4.8	6.0
-other	0	-	-	0.4	0	0.4	0	0
Derived from induced habitat improvement								
-mule deer	0	-	-	0	0	0	0	0
-resident trout	0.1	-	-	0.9	1.8	2.7	3.6	4.4
-other	0.1	-	-	0.3	0.2	0.1	0.1	0.1
Units of Direct Habitat Improvement								
-mule deer (M acres)	0.5	-	-	1.7	0.8	0	0.3	0.1
-resident trout (ac.)	0	0	0	4.8	4.8	4.8	4.8	4.7
-other (M acres)	0	-	-	3.8	0	3.5	0	0
HUMAN RESOURCES								
Programs (enrollees)	39	14	14	39	39	39	39	39
TOTAL BUDGET (MM$)	9.9	11.1	12.2	12.6	10.3	2.6	13.0	15.1
TOTAL COST (MM$)	10.3	-	-	13.6	11.3	13.6	14.0	16.1

*Threatened, **Endangered

COMPARISON OF ALTERNATIVES

INTRODUCTION

The alternatives can be compared and contrasted in terms of many factors: outputs, costs, environmental effects, and response to issues and concerns. The comparison of alternatives in this section summarizes material addressed in more detail elsewhere in Chapter II and in Chapter IV.

This section includes: (1) a comparative overview of alternatives; (2) figures displaying comparative data for the alternatives; (3) narrative and tabular comparisons of economic factors; and (4) tables comparing alternatives in terms of their key environmental consequences and response to issues and concerns.

COMPARATIVE OVERVIEW OF ALTERNATIVES

The following discussion compares the six alternatives studied in detail in terms of major resources on the Forest. The discussion under each heading addresses issues and concerns, quality and quantity of outputs, and/or environmental consequences.

Range

The primary issues and concerns for domestic livestock grazing are the needs to maintain or increase range outputs and to coordinate the grazing program with competing or conflicting resources and activities. The majority of perceived conflicts between grazing and other resources, such as water quality, soil stability, and riparian area condition, are addressed in the direction common to all alternatives.

The competition between domestic livestock and mule deer is addressed differently by alternative. Cattle have priority over mule deer (in terms of increased forage resulting from range improvements) on key deer winter range in RPA; mule deer have priority in PRF, CUR, and CEE; cattle are removed entirely from key winter range in AMN and AMB. Cattle grazing in key deer fawning areas is deferred until after July 15 in AMN and AMB; fawning areas are also emphasized in PRF and CUR, but specific details are left to resolution in allotment management plans.

The competition between livestock grazing and timber management is also handled differently by alternative: cattle grazing is allowed to decline from current levels in suitable timber under all alternatives except AMB, in which current levels are maintained.

Range outputs are increased in RPA by 34 percent; in CEE by 12 percent. The remaining alternatives propose reductions in range outputs over time with CUR and PRF recommending current outputs for the planning period.

Recreation

The primary issues and concerns in recreation deal with the quantity, quality, and type of outdoor recreation opportunities available to the public

on the Inyo National Forest. The quantity of use, quality of recreational experiences, and type of recreational opportunities differ considerably by alternative. It is essential to note, however, that most of that difference occurs on a limited number of acres:

1. Most differences in the quantity of developed recreation, other than alpine skiing, occur primarily in concentrated recreation areas as a result of increased developed site capacity. Differences in quality of developed recreation result from maintenance and service standards.

2. The greatest differences in quantity of dispersed recreation use occur in concentrated recreation areas in association with the quantity of developed site use. Differences in the type of dispersed use are found primarily where new roads could be built to facilitate timber management and/or geothermal development.

The differences highlighted above tend to be concentrated on lands in the area from Mammoth to Lee Vining (timber, geothermal, alpine skiing, and developed site potential), the major Sierra Nevada drainages from Convict Lake to Horseshoe Meadow (developed site potential,) and the Monache area of the Kern Plateau (timber potential). The following discussion is based on the assumption that, other than a moderate trend toward more dispersed use, recreation on most other Forest lands will not change substantially from the current situation under any alternative.

Developed Recreation: The quantity of developed summer recreation represents a wide range of outputs under the alternatives. CUR and AMN represent the lowest level of use with the maintenance of current levels. AMB represents a moderate increase in use. PRF, RPA, and CEE represent the high end of the scale with an increase of 57 percent over base year by the fifth decade. Increases will occur primarily in the public sector. The identified potential for increased private sector (other than ski area) development is negligible.

The quality of developed recreation experiences will also vary. A standard level of facility maintenance and service contributes to recreational quality; low standard levels detract from such quality. The quality of developed recreation experiences will be impaired by low standard operation only in CUR.

Dispersed Recreation: The quantity of dispersed recreation is assumed to increase in general proportion to public developed site capacity and use because a large part of non-wilderness dispersed summer use on the Forest is generated in concentrated recreation areas by people staying in campgrounds. To a lesser degree, dispersed winter use is generated by people who come to the Forest primarily because of alpine skiing opportunities.

The quality of dispersed recreation in concentrated recreation areas is related to the overall amount of use and the availability of facilities (such as trails, restrooms, and interpretive signs) that distribute use and protect resource values. Increased use will be highest in PRF, RPA, and CEE; this reduction is offset, however, by full development of facilities and standard levels of service. CUR will perpetuate the current low level of recreational quality, despite the minimal increase in use, due to a lack of support

facilities and low levels of service. AMB will represent higher overall quality with a moderate increase both in use and in facilities; AMN projects high quality with slightly increased use and substantially increased facilities.

The type of dispersed recreation can vary from primitive (no facilities, no vehicles, few people), through semi-primitive, to intensively developed (many facilities, many vehicles, many people). Dispersed recreation opportunities will be clustered at the primitive and semi-primitive end of the scale in AMN and AMB. More opportunities related to road construction and facility development are available in PRF, CUR, RPA, and CEE.

Recreation quality for other visitors is represented by freedom from conflict with other Forest activities. Timber management on the Inyo does not generally conflict directly with dispersed recreation use. Conflicts with summer use are minimized because most logging occurs in the winter, and conflicts with winter dispersed use can be minimized by locating nordic ski and snowmobile trails as needed to avoid those areas being harvested.

The major impact of timber on recreation is indirect. When new roads for timber harvest are built into an unroaded area, the type of dispersed use shifts. Where access was previously possible only by foot, horseback, or four-wheel drive vehicle, conventional vehicles can now enter the area. As the type of use changes, the amount typically increases. The two areas most susceptible to new or increased motorized use resulting from timber road access are the unroaded forested lands east of San Joaquin Ridge and the Monache area of the Kern Plateau. Neither area is harvested in AMN and PRF; only the San Joaquin area is harvested in AMB. Both areas are harvested under the other alternatives.

Alpine skiing represents a localized conflict because alpine ski areas represent exclusive use of lands otherwise suitable for dispersed summer and winter recreation.

The quality of dispersed recreation is also affected by fishing and hunting opportunities. Fishing opportunities outside of hatchery-stocked fisheries are related to the productivity of resident trout fisheries, which is affected in turn by the amount of stream habitat and watershed improvement under an alternative.

The greatest resident stream fish productivity is found in CEE, followed by AMB, AMN, PRF, RPA, and CUR. The overall difference between the most productive and the least productive alternatives is, however, relatively small. This relationship reflects the good overall condition of fish habitat on the Forest, the large amount of fish habitat in wilderness, and consequent limitations on opportunities to increase habitat capacity. In no case, however, can the projected demand for fishing be met by increases in resident trout habitat.

Big game hunting opportunities are related to the number of deer on the Forest. Deer populations decline under the impacts of facility development, improved access, and increased livestock on winter range; they increase with habitat improvement and reduced competition with livestock on key deer range. The ranking of alternatives according to hunting opportunities will

list AMN and AMB at the high end, PRF and CUR in the middle, and RPA and CEE at the low end.

Timber

The primary issues and concerns related to timber management include the desirability of establishing the size of the suitable timber base in coordination with other potential land uses, establishing a regulated forest on all suitable acres, and producing fuelwood for public use.

The alternatives differ in the amount of acreage determined suitable for timber management, as compared with the acres considered tentatively suitable for Forest planning purposes. The final calculation of suitable acres (those that will actually be managed for timber production under an alternative) was derived from tentatively suitable acres by the subtraction of timber in recommended wilderness, concentrated recreation areas, alpine ski areas, and areas managed with an amenity emphasis under an alternative. The largest suitable timber acreage is found in RPA; acreage figures decline from RPA to CEE, to CUR, to PRF, to AMB, to AMN at the low end of the scale. The suitable timber in RPA represents 90 percent of tentatively suitable timber; AMN represents 56 percent.

The alternatives also differ in timber outputs, but the difference is not directly proportional to suitable timber acreage under the alternative. The reason for this lack of proportionality is the fact that suitable acreage may be managed under one of several sets of management strategies: high level timber management will produce more board feet per acre than uneven-aged management. Timber outputs in the fifth decade range from 19.8 MMBF for RPA to 6.5 MMBF for AMN, representing a range from 2,000 to 1,000 board feet produced (on the average) per acre of suitable timber.

Fuelwood resulting from logging debris is roughly proportional to overall timber outputs. Additional fuelwood may be made available as part of the programmed harvest if needed to respond to demand.

Wilderness

The primary issues and concerns related to wilderness focus on the need to make well-considered decisions between wilderness and non-wilderness for each Further Planning Area on the Forest.

Alternatives differ in the number of Further Planning Areas and the total acreage recommended for wilderness. RPA represents the low end of the scale, with no wilderness recommendations; AMN represents the high end of the scale, with 510,800 acres in twelve areas recommended for wilderness. The other alternatives, in increasing order of acres recommended, are: PRF, CUR, AMB, and CEE.

The quality of proposed wilderness, in terms of wilderness characteristics, and the quantity of wilderness recreation use are not directly proportional to quantity of acres recommended, however. The Further Planning Areas on the Forest, as a group, tend to rank much lower in overall wilderness characteristics than designated wilderness. Although natural integrity and opportunities for solitude tend to be high, natural appearance and

opportunities for primitive recreation tend to be low. The latter is true primarily because many Further Planning Areas are intruded by primitive roads, accessible by four-wheel drive vehicle, and lacking in the available water sources that will facilitate nonmotorized recreation.

The amount of wilderness recreation use projected for an alternative reflects the availability of primitive recreation opportunities in the areas recommended for wilderness under that alternative. Total acres of recommended wilderness and recreation use are not directly proportional. AMN, for example, which has the largest recommended wilderness acreage, includes considerable acreage in Further Planning Areas with moderate to low wilderness quality and low projected levels of wilderness recreation use. CUR recommends only that part of the White and Inyo Mountains with outstanding ecological features (e.g. desert springs, alpine tundra). PRF, CEE, AMN and AMB include additional acreage without such features.

Wildlife and Fish

The primary issues and concerns related to wildlife and fish habitat address the quantity and quality of habitat, with special emphasis on harvest species; threatened, endangered, sensitive, and special interest species; and those species dependent on riparian areas, older seral stages of timber, and snags.

The majority of direction for wildlife and fish habitat is found in the Forest-wide Standards and Guidelines common to all alternatives. Such direction is intended to meet Minimum Management Requirements (MMRs) for native vertebrate species. In only the following cases does direction exceed the MMRs and, therefore, vary by alternative.

Mule deer: PRF, CUR, and CEE give priority to mule deer over cattle for any increases in forage production on key deer winter range; AMN and AMB remove cattle from key winter range; RPA gives priority to cattle on winter range. AMN and AMB call for delayed livestock grazing in key deer fawning areas; PRF and CUR also emphasize fawning areas, but leave the details to allotment management plans; RPA and CEE place no special emphasis on fawning areas. AMN, AMB, and PRF emphasize the integrity of mule deer migration routes; the other alternatives do not address migration routes.

Peregrine falcon: PRF, CUR, RPA, and CEE provide for the reintroduction of two nesting pairs; AMN and AMB provide for four.

Goshawk: PRF, CUR, AMN, and AMB maintain fifteen (all existing) goshawk territories in suitable timber; RPA and CEE will allow a reduction in the number of such territories, maintaining only nine (the number needed to meet minimum management requirements). PRF, AMN, and AMB provide 100 acres per goshawk territory; the remaining alternatives provide only the minimum management level, 50 acres per territory.

Sierra Nevada mountain sheep: RPA and CEE provide for no additional reintroduced herds; PRF and CUR provide for at least one herd based on additional environmental analyses; AMN and AMB provide for seven additional herds.

Riparian area-dependent species: All alternatives call for negotiating with utility companies to rewater selected reaches of stream and reestablishment of streamside riparian vegetation. Wet meadows represent more than two-thirds of the riparian vegetation on the Forest; of the 26,000 acres of wet meadow on the Forest, 23,500 acres have been identified for watershed restoration. Alternatives PRF, CEE, AMN, and AMB call for full watershed restoration in wet meadows over 50 years; RPA for 9,900 acres; and CUR for 2,000 acres.

Species dependent on snags: PRF, CUR, RPA, and CEE will apply only the *minimum management requirement for snags (maintain at least 40 percent of* natural potential); AMN and AMB call for maintaining 100 percent of natural potential snag-dependent wildlife density.

Species dependent on older seral stages of timber: The alternatives vary in the amount of timber maintained in older seral stages. CUR, RPA, and CEE maintain only the amount needed for goshawk nesting territories (see above). PRF maintains 10 percent of the timber base in older seral stages, AMN 30 percent, and AMB 20 percent.

Fish: There is limited potential to increase fish habitat capability on the Forest. More than 90 percent of resident trout are found in lakes, where habitat condition is generally good and there are no identified opportunities to enhance or increase habitat. The majority of both lake and stream habitat is in wilderness, where habitat is also generally good and any potential for enhancement will be limited by wilderness management.

Of the stream acreage identified as suitable and available for habitat improvement, CEE implements the full program; PRF, RPA, AMN, and AMB represent high levels of improvement; CUR represents a moderately high level. Additional fish habitat improvement is induced from watershed improvement, discussed above under riparian area-dependent species.

Threatened trout habitat is managed only for species recovery under PRF, CUR, RPA, and CEE; AMN and AMB call for increasing threatened trout habitat above recovery levels.

Table 16
Acreage Allocations by Prescription and Alternative (M Acres)

Management Prescription	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
1. Designated Wilderness	565.1	565.1	565.1	565.1	565.1	565.1
2. Proposed Wilderness	172.6	107.6	0	339.8	510.8	222.7
3. Mountain Sheep	35.0	35.0	4.8	4.9	4.9	32.0
4. Mule Deer	118.8	0	7.4	108.1	117.6	118.3
5. Research Natural Area*	14.9 (0.7)	14.9 (0.7)	14.9 (0.7)	6.3 (9.3)	3.0 (12.6)	11.6 (4.0)
6. Mono Basin NF Scenic Area*	45.8	45.0	45.0	40.2 (4.8)	40.2 (4.8)	40.2 (4.8)
7. Ancient Bristlecone Pine Forest*	28.9	27.5	27.5	21.5 (6.0)	21.5 (6.0)	27.5
8. Wild and Scenic River*	2.6 (15.8)	4.3 (19.4)	4.3 (19.4)	4.3 (19.4)	4.3 (19.4)	4.3 (19.4)
9 Uneven-aged Timber Mgmt.	10.5	0	0	0	0	2.9
10. High Level Timber Mgmt.	74.5	109.8	119.8	97.7	97.3	86.7
11. Range	138.5	178.3	228.1	144.4	95.8	101.4
12. Concentrated Recreation Area	52.5	44.6	44.1	44.1	48.2	46.1
13. Alpine Ski Area, Existing and Under Study	9.6	6.2	10.2	21.8	6.2	14.6
14. Potential Alpine Ski Area	14.2	6.6	0	0	0	0
15. Developed Recreation Site	2.2	1.4	2.1	2.1	1.4	1.9
16. Semi-Primitive Recreation	8.6	0	0	0	0	6.8
17. Dispersed Recreation	437.8	364.4	204.4	68.0	387.0	589.4
18. Multiple Resource Area	199.1	419.0	652.0	461.4	26.4	58.2

* Acres with dual designation (existing or proposed wilderness and RNA, Scenic Area, etc.) are displayed in the acreage total for Prescriptions 1 or 2 and indicated in parentheses under the applicable prescription.

Table 17
Comparison of Average Yearly Outputs
for the Planning Period by Alternative

Resource Elements	Base Year	80 RPA		Alternatives PRF	CUR	RPA	CEE	AMN	AMB
FACILITIES									
Administrative Sites									
-Forest Service owned (no.)	6	-	-	8	8	8	8	8	8
-leased (no.)	1	-	-	0	0	0	0	0	0
Dams and Reservoirs									
-Forest Service (no.)	3	-	-	3	3	3	3	3	3
-State/local (no.)	4	-	-	4	4	4	4	4	4
-private (no.)	11	-	-	11	11	11	11	11	11
Roads (miles)									
Construction (tot.)	0	-	-	2.5	3.1	0.6	0.6	1.4	0
-timber	0	-	-	0	0.6	0.6	0.6	0	0
-recreation	0	-	-	2.5	2.5	0	0	1.4	0
Reconstruction (tot.)	20	-	-	15	15	20	21	13	17
-timber	15	-	-	5	15	18	16	11	14
-recreation	5	-	-	10	0	2	5	2	3
Maintenance (tot.)	974	-	-	977	977	977	977	981	974
Trails (miles)									
Construction (tot.)	0	-	-	24.3	9.0	27.0	26.3	19.0	20.5
-existing wilderness	0	-	-	0.7	0.7	0.7	0.7	0.7	0.7
-recommended wilderness	-	-	-	1.8	0.8	0	3.0	3.3	2.8
-concentrated rec. areas	0	-	-	9.0	0	9.0	9.0	4.0	6.0
-open NF	0	-	-	1.0	0	1.0	1.0	1.0	1.0
-OHV	0	-	-	1.8	0	2.5	2.6	0	0
-nordic	0	-	-	10.0	7.5	13.8	10.0	10.0	10.0
Reconstruction (tot.)	10.8	-	-	39.7	37.9	38.4	36.3	34.9	37.5
-existing wilderness	9.0	-	-	12.6	12.6	12.6	12.6	12.6	12.6
-recommended wilderness	-	-	-	1.3	1.3	0	0.6	1.9	1.8
-concentrated rec. areas	1.8	-	-	4.2	4.2	4.2	4.2	4.2	4.2
-OHV	0	-	-	16.2	14.4	16.2	13.5	10.8	13.5
-open NF	0	-	-	2.2	2.2	2.2	2.2	2.2	2.2
-nordic	0	-	-	3.2	3.2	3.2	3.2	3.2	3.2

Table 17 (continued)
Comparison of Average Yearly Outputs
for the Planning Period by Alternative

Resource Elements	Base Year	80 RPA		Alternatives PRF	CUR	RPA	CEE	AMN	AMB
Trails (cont'd)									
Maintenance total	1236	-	-	1489	1361	1506	1517	1489	1498
LANDS AND MINERALS									
Land acquired (ac.)	60	0	0	54	54	54	54	54	54
Leasable minerals (tot. power plants)	0	-	-	1	1	1	1	1	1
Locatable minerals (operating plans)	67	320	408	50	60	67	46	29	50
PROTECTION									
Fuel Treatment (acres)									
-total	18	500	400	243	923	1312	1412	1461	1521
-fire related	0	-	-	0	0	0	0	0	0
-timber related	18	-	-	93	163	143	61	6	19
-range related	0	-	-	50	324	356	316	202	290
-wildlife related	0	-	-	100	436	813	1035	1253	1212
Expected Wildfire (acres)									
-total	747	-	-	918	1011	918	1134	927	918
-intensity level 1	13	-	-	9	10	9	9	9	9
-intensity level 2	34	-	-	55	128	55	124	57	55
-intensity level 3	53	-	-	64	57	64	70	65	64
-intensity level 4	647	-	-	239	209	239	313	241	239
-intensity level 5	0	-	-	551	607	551	618	556	551
RANGE									
Grazing (M AUMs)	41.4	42.2	44.5	41.4	38.1	52.7	48.6	35.6	37.3
RECREATION USE (M RVDs)									
Developed Public	1201	3510	5100	1578	1293	1674	1772	1293	1448
Developed Private	1635	-	-	1914	1914	1914	1914	1914	1914
Dispersed	1004	2490	3120	1191	1238	1191	1190	899	1189
Wilderness	540	-	-	644	639	637	667	680	675
Visual Quality Index	142.07	-	-	142.15	142.13	142.15	142.10	142.34	142.20

Table 17 (continued)
Comparison of Average Yearly Outputs
for the Planning Period by Alternative

Resource Elements	Base Year	80 RPA		Alternatives PRF	CUR	RPA	CEE	AMN	AMB
TIMBER									
ASQ (MMBF)	10.5	16.8	19.8	7.1	11.4	16.9	8.3	2.7	5.1
Fuelwood (M cords)	10.0	-	-	10.6	10.6	16.1	7.2	4.2	11.9
Long Term Sustained Yield (MMBF)	-	-	-	14.5	24.7	29.9	24.7	15.6	18.9
Reforestation (acres)	300	614	718	465	817	714	307	32	96
Timber Stand Improvement (acres)	328	900	918	374	40	113	578	539	558
WATER									
Improvement (acres)	100	180	200	350	40	186	500	500	500
Quality (M acre-ft.)	1047	476	481	1050	1047	1052	1051	1052	1052
Increased Quantity (M acre-feet)	0	-	-	7.0	11.0	15.0	7.0	0	1.7
WILDLIFE AND FISH									
Mule Deer									
(M animals total)	20.2	+20 %		20.2	20.2	18.0	20.0	20.7	20.2
(M animals on Inyo)	12.0			12.0	12.0	11.2	11.9	12.5	12.0
Bald Eagle** (winter roosting areas)	1	-	-	1	1	1	1	1	1
Peregrine Falcon** (no. of pairs)	0	-	-	2	2	2	2	2	2
Goshawks (pairs in suitable timber)	15	-	-	15	15	14	14	15	15
Nelson Mountain Sheep (no. of animals)	130	-	-	140	140	130	130	140	140
Sierra Nevada Mountain Sheep (no. of animals)	300	-	-	350	350	330	330	350	350

Table 17 (continued)
Comparison of Average Yearly Outputs
for the Planning Period by Alternative

Resource Elements	Base Year	80 RPA		Alternatives PRF	CUR	RPA	CEE	AMN	AMB
WILDLIFE AND FISH (cont'd)									
Lahontan CT Trout* (acres of habitat)	1	-	-	.3	.3	.3	.3	.3	.3
Paiute CT Trout* (acres of habitat)	3	-	-	1.3	1.3	1.3	1.3	1.3	1.3
Resident trout (M pounds)	1632	+20%		1640	1635	1640	1643	1641	1642
Wildlife and Fish User Days (M WFUDs)									
	391.0	-	-	393.8	392.9	392.1	394.3	395.0	394.2
-mule deer	25.2	-	-	25.2	25.2	23.5	25.0	26.2	25.2
-resident trout	340.0	-	-	341.7	340.8	341.7	342.4	341.9	342.1
-other	25.8	-	-	26.9	26.9	26.9	26.9	26.9	26.9
Derived from Direct Habitat Improvement									
-mule deer	0.1	-	-	0.2	<0.1	0.1	0.2	0.2	0.2
-resident trout	0	-	-	1.1	0.7	1.3	1.5	1.0	1.2
-other	0	-	-	0.4	0.5	0.4	0.3	0.6	0.4
Derived from Induced Habitat Improvement									
-mule deer	0	-	-	0	0	0	0	0	0
-resident trout	0.1	-	-	0.6	0.1	0.4	0.9	0.9	0.9
-other	0.1	-	-	0.3	0.1	<0.1	0.1	0.3	0.3
Units of Direct Habitat Improvement									
-mule deer (M acres)	0.5	-	-	0.2	0	1.0	1.5	1.8	1.7
-resident trout (ac.)	0	-	-	0.4	3.1	5.3	5.9	4.4	4.8
-other (M acres)	0	-	-	0.3	4.1	3.0	2.8	3.4	3.8
HUMAN RESOURCES									
Programs (enrollees)	39	14	14	39	39	39	39	39	39
TOTAL BUDGET (MM$)	**9.9**	**11.1**	**12.2**	**12.1**	**10.0**	**12.0**	**11.9**	**12.9**	**12.6**
TOTAL COST (MM$)	**10.3**	**-**	**-**	**13.5**	**11.0**	**13.4**	**12.8**	**13.9**	**13.6**

*Threatened, **Endangered

Table 18
Additional Key Comparisons
by Alternative

	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
LANDS AVAILABLE FOR MINERAL ENTRY (M acres)						
-Mineral potential high	108.2	107.5	110.4	84.3	28.1	62.6
-Mineral potential medium	174.5	176.6	204.1	130.3	107.4	174.8
-Mineral potential low	885.8	888.4	965.8	731.6	631.6	825.9
Total	**1168.5**	**1172.5**	**1288.3**	**964.2**	**775.2**	**1063.3**
LANDS WITHDRAWN FROM MINERAL ENTRY (M acres)						
-Mineral potential high	26.6	26.3	23.5	50.6	10.7	72.3
-Mineral potential medium	34.5	32.4	5.0	78.7	101.6	34.2
-Mineral potential low	135.0	132.3	55.0	289.1	381.0	194.9
-Existing wilderness*	565.1	565.1	565.1	565.1	565.1	565.1
Total	**761.2**	**756.2**	**648.6**	**983.5**	**1058.4**	**866.5**

*Mineral potential ratings are not available for existing wilderness.

RECREATION OPPORTUNITIES BY ROS CLASS (excluding the Mono Basin NF Scenic Area)

Area (M acres-decade 5)						
-Primitive	867.1	867.1	836.2	865.7	869.8	867.8
-Semi-Primitive Non-Motorized	404.9	402.7	380.6	418.9	490.4	442.2
-Semi-Primitive Motorized	215.4	238.1	230.7	183.8	152.7	195.9
-Roaded Natural	335.6	319.1	381.0	343.1	325.7	308.5
-Roaded Modified	47.0	43.3	39.8	48.1	36.6	51.5
-Rural	13.1	13.0	14.3	22.0	10.2	16.5
-Urban*	1.6	1.4	2.1	3.1	1.3	2.3
Projected Use (M RVDs-decade 5)						
-Primitive	781.2	781.2	752.4	779.4	783.0	781.2
-Semi-Primitive Non-Motorized	226.8	225.79	213.4	234.6	274.4	247.5
-Semi-Primitive Motorized	257.7	284.2	275.6	219.3	182.6	233.8
-Roaded Natural	2225.0	2115.8	2526.0	2274.9	2159.4	2045.6
-Roaded Modified	4542.1	4184.3	3846.4	4648.3	3537.3	4977.3
-Rural	2432.0	2413.3	2654.6	4084.1	1893.3	3063.3
-Urban	0	0	0	0	0	0

Table 18 (continued)
Additional Key Comparisons
by Alternative

	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
RECREATION (cont'd)						
Capacity (M PAOT-decade 5)						
-Primitive	4.34	4.34	4.18	4.33	4.35	4.34
-Semi-Primitive Non-Motorized	4.05	4.03	3.81	4.19	4.90	4.42
-Semi-Primitive Motorized	3.02	3.33	3.23	2.57	2.14	2.74
-Roaded Natural	57.1	54.3	64.8	58.3	55.4	52.5
-Roaded Modified	71.0	65.4	60.1	72.6	55.3	77.8
-Rural	46.8	46.4	51.1	78.5	36.4	58.9
-Urban	0	0	0	0	0	0
RESEARCH NATURAL AREAS Number/(M acres)	7(15.6)	7(15.6)	7(15.6)	7(15.6)	7(15.6)	7(15.6)
LAND CLASSIFICATION FOR TIMBER (M acres)						
Non-Forested Land (including water)	978.7	978.7	978.7	978.7	978.7	978.7
Forested Land	952.5	951.1	951.1	951.1	951.1	951.1
Withdrawn from timber production*	328.8	326.4	326.4	326.4	326.4	326.4
Not capable of industrial wood production	483.1	483.1	483.1	483.1	483.1	483.1
Unregenerable within five years of harvest	29.9	29.9	29.9	29.9	29.9	29.9
Tentatively Suitable Timber Base	110.7	110.7	110.7	110.7	110.7	110.7
Not suitable for timber under the alternative	35.5	21.6	11.5	13.1	48.9	40.9
Total Unsuitable Forested Acres	877.3	862.0	851.9	853.5	889.3	881.3
Total Suitable Forested Acres	75.2	89.1	99.2	97.6	61.8	69.8

Table 18
Additional Key Comparisons
by Alternative

			Alternatives					
			PRF	CUR	RPA	CEE	AMN	AMB
VISUAL QUALITY OBJECTIVES (M acres, excluding the Mono Basin NF Scenic Area)								
-Preservation			692.6	687.6	580.0	911.2	1078.9	799.4
-Retention			660.9	471.8	332.8	325.0	504.3	684.2
-Partial Retention			428.2	623.7	815.3	416.0	269.7	349.7
-Modification			103.1	98.8	153.8	226.9	29.9	49.3
-Maximum Modification			0	2.8	2.9	5.6	1.9	2.0
WILD & SCENIC RIVERS (miles)			18.0	18.0	18.0	18.0	18.0	18.0
Recommended Wild								
Segment 1			6.0	6.0	6.0	6.0	6.0	6.0
Segment 4			5.0	5.0	5.0	5.0	5.0	5.0
Recommended Scenic								
Segment 3			2.5	2.5	2.5	2.5	2.5	2.5
Recommended Recreation								
Segment 2			4.5	4.5	4.5	4.5	4.5	4.5
WILDERNESS (M acres)			**737.7**	**672.7**	**565.1**	**904.9**	**1075.9**	**787.8**
Further Planning Area	**Area No.**	**Net(M) Acres**						
Coyote SE	5033	55.6	-	-	-	55.6	55.6	11.8
Table Mtn.	5035	4.1	4.1	-	-	-	4.1	-
Buttermilk	5038	0.9	-	-	-	-	0.9	-
Wheeler Ridge	5040	16.2	-	-	-	-	16.2	-
Laurel-McGee	5045	9.1	-	-	-	9.1	9.1	9.1
Horse Meadow	5049	5.6	-	-	-	-	5.6	-
Tioga Lake	5050	0.9	0.9	-	-	0.9	0.9	0.9
Hall Natural	5051	5.2	-	-	-	5.2	5.2	-
Log Cabin-Saddlebag	5052	17.1	-	-	-	17.1	17.1	17.7
Benton Range*	5056	10.5	-	-	-	-	-	-
White Mts.	5058	251.9	113.2	53.2	-	251.9	251.9	53.2
Blanco Mt.	5059	16.3	-	-	-	-	-	-
Birch Creek	5060	32.7	-	-	-	-	-	-
Black Canyon	5061	34.8	-	-	-	-	-	-
Andrews Mt.	5063	13.6	-	-	-	-	13.6	-
Paiute-Mazourka	5064	130.6	54.4	54.4	-	-	130.6	130.6
Sugarloaf	5296	10.7	-	-	-	-	-	-
Excelsior	5989	8.0	-	-	-	-	-	-
Total		**623.8**	**172.6**	**107.6**	**0**	**339.8**	**510.8**	**222.7**
TOTAL NATIONAL FOREST ACRES			**1931.1**					

ECONOMICS AND TRADEOFF ANALYSIS

The major economic benefits and tradeoffs between the alternatives are presented comparatively in the following tables. These comparisons are based on projected economic effects, costs and values of priced and non-priced resources and benefits, and the level of national and Regional issue resolution. Economic indicators such as Present Net Value (PNV) and net cash flow are of concern to the federal taxpayer, as they measure alternatives in terms of their responsiveness to economic efficiency in government.

Table 19, the Summary Comparison of Economic Effects, displays in detail the total cost, cash and non-cash economic benefits, capital investment costs, operation and maintenance costs, and national, regional, and local benefits and costs of each alternative. Total public benefits from the Inyo National Forest increase over the next fifty years primarily in response to the amount of dispersed and developed recreation, and (to a much lesser degree) in response to wildlife, watershed, timber, and range outputs. Increases in total benefits for the alternatives studied in detail range from 20 to 107 percent above the 1982 base level.

The lowest economic benefit levels are found in those alternatives in which developed recreation or ski area expansion are limited by budget or other resource considerations. Non-cash benefits, derived primarily from recreation use, comprise 94 to 97 percent of total Forest benefits in the first decade. Cash returns increase over the fifty-year planning horizon in direct proportion to the size of the developed recreation, timber, and range programs. CUR provides the least impressive gains in cash benefits.

Total costs increase from 7 to 35 percent above the 1982 base year level in the first decade. These cost increases primarily reflect increases in capital investments, which range from a 28 percent reduction to more than 600 percent increase over the 1982 base year level. Recreation facility, trail, and timber road construction vary with the size of the recreation program, the amount of wilderness proposed, and the quantity of timber harvested.

Employment and income opportunities are drawn primarily from developed recreation, alpine skiing, timber harvest, and livestock grazing. Related support businesses provide considerably smaller proportions of the available jobs. Changes in local employment opportunity ranged from zero to an increase of more than 36 percent.

Table 20, Present Net Value Comparison-Marginal Cost of Constraints, presents the economic and resource opportunity costs of the Minimum Management Requirements (MMRs), Timber Policy Requirements (TPRs), and Minimum Implementation Requirements (MIRs). (See Appendix B for a detailed explanation of these requirements.)

The basis of the present net value comparison is the most economically efficient, unconstrained benchmark (FLW). The Minimum Management Requirements and Timber Policy Requirements represent the first set of objectives added to FLW, resulting in the MMR benchmark. These requirements include goshawk nesting territories, riparian area protection, maintenance of soil and water productivity, and minimum diversity of vegetative seral stages. On the Inyo National Forest, only goshawk territories and riparian

area protection were applied as constraints on the resource allocation model. Each of these requirements slightly restricted timber harvest.

The Minimum Implementation Requirements represent the second set of objectives analyzed; they were added to the MMR benchmark, resulting in the CEE alternative. On the Inyo National Forest, maintenance of visual quality along state-designated scenic highways was the only Minimum Implementation Requirement applied to the analysis. The only effect was a slight additional restriction on timber harvest.

The Minimum Management Requirements, Timber Policy Requirements and Minimum Implementation Requirements collectively represent a reduction in Present Net Value (PNV) of only $0.3 million, less than 0.01 percent of the PNV for the FLW benchmark. This reduction in PNV results primarily from increased costs for timber production and a loss of 0.275 MMBF of timber harvest over the first five decades. The goshawk and riparian area requirements had the greatest effect on timber costs. These requirements ensure the maintenance of nine goshawk territories of fifty acres each in suitable timber and the protection of riparian area-dependent resources in suitable timber. The two requirements shared equally in reducing PNV.

The timber policy requirements of harvest dispersion and non-declining yield had negligible effects on PNV due to the low relative value of timber on the Inyo National Forest and the interaction of stand growth, discounting of costs and benefits, and price trends. These factors combined to reduce the harvest in earlier decades with the trend steadily climbing and stabilizing in later decades. Allowing for harvest to decline in the later decades had no appreciable effect on PNV, due mainly to the discounting factor.

The Minimum Implementation Requirement for visual quality protection resulted in a very slight drop of $0.1 million in PNV due to restrictions on timber harvest techniques and limitations on the size of openings.

The marginal costs of constraints added to benchmarks to develop the CEE alternative were insignificant in terms of reduced PNV or reduced resource production capability. The impact of the Minimum Management Requirements, Timber Policy Requirements, and Minimum Implementation Requirements was felt exclusively on timber benefits, which at most provide less than three percent of the total Forest PNV.

Table 21, Present Net Value Comparison of Alternatives, presents the total PNV and the costs and benefits of the major contributing resources for each of the alternatives studied in detail.

Recreation accounts for 81 to 88 percent of the total discounted benefits in the Forest alternatives. The distribution of benefits within the recreation program varied on the basis of facility maintenance levels, wilderness recommendations, and the extent of alpine ski area development. Timber, range, and other resource benefits and costs were far less significant than recreation in determining the relative PNV of the alternatives.

The CUR alternative ranked lowest in PNV, primarily because budget constraints limited opportunities to contribute to PNV.

Table 22, Average Annual Cash Flows and Non-Cash Benefits, presents the total costs, benefits, and net cash flow by alternative for decades one and five. Expenditures are greater than returns to the treasury in all alternatives for both the first and fifth decades.

Cash receipts will be derived mainly from developed recreation and timber production, with livestock grazing and geothermal energy resources representing three to eight percent of the total. Gross receipts for all alternatives will be higher than the 1982 base level of $2.2 million. Receipts will be expected to nearly double between the first and fifth decades in all alternatives except CUR, which increases the least because of budget limitations. Even with substantial increases in returns to the treasury, negative net cash flow increases in all alternatives except CUR, AMN, and AMB, which have the lowest total federal costs. This relationship is due primarily to the need for substantial investment in order to realize major benefits in the recreation and timber programs.

A large part of the total benefits derived from Inyo National Forest lands represents the estimated amount that consumers will be willing to pay for Forest outputs such as recreation (not the amount that they actually pay for those outputs). Consequently, the actual cash received by the U.S. government is not proportional to total benefits generated by Forest management programs.

The ranking of alternatives by net cash flow is inversely proportional to costs in the first decade. Generally, those alternatives that move up in the ranking between the first and the fifth decade are those that recommend large acreages for wilderness and that have reduced timber and developed recreation production. This relationship results from the high initial costs of wilderness designation (trail and trailhead construction) versus the moderate costs and high-level benefits of wilderness management over the long term.

The most economically efficient alternative, CEE, falls near the middle of the first-decade ranking according to net cash flow. The CUR and RPA alternatives rank above CEE, as they emphasize resources producing income to the treasury, primarily developed recreation and timber production. Alternatives AMN and AMB incur large first decade capital-investment costs to accommodate large acreages of proposed wilderness. By the fifth decade, their costs are reduced substantially because neither alternative supports a large timber or developed recreation program. CEE ranks lowest in the fifth decade, primarily because it provides only the most economically efficient timber harvest levels (lower than CUR or RPA) in combination with a substantial recreation program which provides little in terms of actual income to the treasury.

In general, alternatives CUR, AMN, and AMB (with budget limitations, major initial investments for wilderness, and/or with long-term low-profile timber and recreation programs) provide both less negative net cash flow and fewer non-cash benefits than other alternatives. Alternatives RPA, CEE, and PRF (which strive to meet projected public needs through increased developed recreation programs) incur high costs, provide the highest returns to the treasury, offer the highest non-cash benefits, and higher negative cash flows.

That portion of the economic benefits that will not be collected as cash receipts varies considerably across the alternatives. These benefits are based primarily on recreation, wildlife, and range outputs, which provide upwards of 90 percent of the total PNV. For this reason, there is not a large range of net cash flow among the alternatives (except CUR, which is considerably lower because of budgetary restrictions).

Table 23, Indicators of Responsiveness to Major National and Regional Issues displays the relationships among key economic values, community effects, and the differing responses among alternatives to selected issues and concerns. The purpose is to highlight major differences and similarities among alternatives in terms of tradeoffs among key objectives, responses to public issues, management concerns, and resource use and development opportunities. However, a complete understanding of the differences among alternatives requires a thorough reading of Chapters II and IV of this document.

Table 19
Summary Comparison of Economic Effects

	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
	(millions of 1982 dollars per year)					
1. Total Benefits						
Base Year	9.5	9.5	9.5	9.5	9.5	9.5
Decade 1	9.7	9.4	10.0	10.2	9.3	9.6
Decade 2	12.6	10.7	13.0	14.0	11.9	12.1
Decade 3	13.6	11.2	14.5	15.3	12.5	13.1
Decade 4	14.3	11.3	15.3	16.5	13.1	13.8
Decade 5	14.5	11.4	19.6	16.6	13.2	14.3
2. Returns to the U.S. Treasury						
Base Year	2.2	2.2	2.2	2.2	2.2	2.2
Decade 1	3.8	3.9	5.5	4.0	2.7	3.5
Decade 2	5.0	4.2	7.5	5.3	3.4	4.2
Decade 3	5.6	4.5	8.7	7.0	3.6	4.8
Decade 4	6.5	4.4	11.0	8.0	4.4	5.4
Decade 5	7.5	4.4	13.0	8.5	5.4	6.7
3. Non-cash benefits						
Base Year	9.3	9.3	9.3	9.3	9.3	9.3
Decade 1	9.4	9.0	9.5	9.8	9.0	9.3
Decade 2	12.2	10.3	12.3	13.5	11.6	11.6
Decade 3	13.0	10.7	13.6	14.5	12.1	12.7
Decade 4	13.7	10.9	14.2	15.7	12.6	13.3
Decade 5	13.7	11.0	18.4	15.8	12.6	13.6
4. Total Costs						
Base Year	10.3	10.3	10.3	10.3	10.3	10.3
Decade 1	13.5	11.0	13.4	12.8	13.9	13.6
Decade 2	13.7	10.9	14.7	14.3	10.9	11.3
Decade 3	17.0	11.0	15.8	14.4	11.4	13.6
Decade 4	17.1	11.0	18.2	15.2	12.6	14.0
Decade 5	17.7	11.0	21.6	18.0	14.1	16.1

1. Total benefits include both cash returns to the U.S. Treasury and non-cash benefits. Total benefits are the estimated total amount that consumers will be willing to pay for Forest outputs, whether or not this amount is actually collected by the U.S. government.

2. Returns to the U.S. Treasury are the estimated payments by consumers of Forest outputs collected by the federal government.

3. Non-cash benefits are the difference between the total estimated amount that consumers will be willing to pay 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 lower than the total willingness-to-pay value. (See Appendix B for specific values).

4. Total costs include the federal and non-federal costs needed to produce Forest outputs.

Table 19 (continued)
Summary Comparison of Economic Effects

	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
	(millions of 1982 dollars per year)					
5. Non-federal Cost						
Base Year	0.2	0.2	0.2	0.2	0.2	0.2
Decade 1	0.2	0.2	0.2	0.2	0.2	0.2
Decade 2	0.2	0.2	0.2	0.2	0.2	0.2
Decade 3	0.2	0.2	0.2	0.2	0.2	0.2
Decade 4	0.2	0.2	0.2	0.2	0.2	0.2
Decade 5	0.2	0.2	0.2	0.2	0.2	0.2
6. Federal Cost						
Base Year	10.1	10.1	10.1	10.1	10.1	10.1
Decade 1	13.3	10.8	13.2	12.6	13.7	13.4
Decade 2	13.5	10.7	14.5	14.1	10.7	11.1
Decade 3	16.8	10.8	15.6	14.2	11.2	13.4
Decade 4	16.9	10.8	18.0	15.0	12.4	13.8
Decade 5	17.5	10.8	21.4	17.8	13.9	15.9
7. Total Budget						
Base Year	9.9	9.9	9.9	9.9	9.9	9.9
Decade 1	12.5	10.0	12.4	11.9	12.9	12.6
Decade 2	12.7	9.9	13.7	13.4	9.9	10.3
Decade 3	16.0	10.0	15.8	13.5	10.4	12.6
Decade 4	16.1	10.0	17.2	14.3	11.6	13.0
Decade 5	16.7	10.0	21.6	17.1	13.1	15.1
8. Operation and Maintenance Cost						
Base Year	9.2	9.2	9.2	9.2	9.2	9.2
Decade 1	9.9	10.2	8.9	8.3	7.0	8.7
Decade 2	10.4	9.8	9.9	8.9	8.0	9.1
Decade 3	12.9	10.2	9.5	9.5	8.4	11.4
Decade 4	12.6	10.5	12.9	10.9	9.2	10.2
Decade 5	12.0	10.5	16.1	12.8	9.9	11.5

5. Non-federal costs include all costs paid by non-federal cooperators (examples include State Fish and Game habitat improvement expenditures, capital investments made by range permittees, etc.)

6. Federal costs are all costs borne by the federal government, including costs paid from general tax receipts, costs paid from funds set aside from payments (such as K-V), and costs paid by accepting in-kind payments in lieu of cash (such as purchaser road credits). Federal cost also equals total cost less non-federal cooperator cost.

7. Total budget is equal to federal cost less the cost of fighting forest fires (FFF).

8. 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.

Table 19 (continued)
Summary Comparison of Economic Effects

	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
	(millions of 1982 dollars per year)					
9. Capital Investment Cost						
Base Year	1.1	1.1	1.1	1.1	1.1	1.1
Decade 1	3.7	0.8	4.5	4.5	6.9	4.9
Decade 2	3.3	1.1	4.8	5.4	2.9	2.2
Decade 3	4.1	0.8	6.3	4.9	3.0	3.4
Decade 4	4.5	0.5	5.3	5.1	3.4	3.8
Decade 5	5.7	0.5	5.5	5.2	4.2	4.6
10. Recreation Construction						
Base Year	0.8	0.8	0.8	0.8	0.8	0.8
Decade 1	3.2	0.5	2.8	3.5	6.5	4.1
Decade 2	2.3	0.7	2.8	3.6	2.4	1.0
Decade 3	2.6	0.4	3.1	2.8	2.5	2.4
Decade 4	3.1	0.2	2.7	3.1	3.0	2.3
Decade 5	2.7	0.2	2.7	3.0	2.9	3.0
11. Other Capital Investment						
Base Year	0.3	0.3	0.3	0.3	0.3	0.3
Decade 1	0.5	0.3	1.7	1.0	0.4	1.2
Decade 2	1.0	0.4	2.0	1.8	0.5	1.2
Decade 3	1.5	0.4	3.2	2.1	0.5	1.0
Decade 4	1.4	0.3	2.6	2.0	0.4	1.5
Decade 5	3.0	0.3	2.8	2.0	1.3	1.6
12. 25-percent Receipt Shares						
Base Year	0.5	0.5	0.5	0.5	0.5	0.5
Decade 1	1.0	1.0	1.4	1.0	0.7	0.9
Decade 2	1.3	1.0	1.9	1.3	0.9	1.0
Decade 3	1.5	1.1	2.2	1.8	0.9	1.2
Decade 4	1.7	1.1	2.8	2.0	1.1	1.4
Decade 5	1.9	1.1	3.3	2.1	1.4	1.7

9. 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.

10. Recreation construction to meet projected recreation demand.

11. Other capital investment is all investment cost other than recreation construction.

12. Twenty-five percent of returns to the U.S. Treasury are distributed to the Counties in proportion to Inyo National Forest acreage in each County.

Table 19 (continued)
Summary Comparison of Economic Effects

	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
	(millions of 1982 dollars per year)					
13. County Yield Tax Revenues						
Base Year	0.01	0.01	0.01	0.01	0.01	0.01
Decade 1	0.03	0.04	0.05	0.02	0.01	0.02
Decade 2	0.04	0.04	0.10	0.04	0.02	0.03
Decade 3	0.05	0.03	0.10	0.05	0.02	0.03
Decade 4	0.10	0.03	0.16	0.10	0.04	0.05
Decade 5	0.10	0.03	0.22	0.10	0.10	0.10
14. Income, first decade (MM 1982 $/year)	31.8	26.4	33.3	35.8	26.1	26.6
15. Employment, first decade (M person-years)	1.3	1.1	1.4	1.5	1.1	1.1
16. Discounted Benefits (MM 1982 $)	1847.0	1151.8	2017.8	2166.6	1550.7	1740.4
17. Discounted Costs (MM 1982 $)	280.9	197.6	312.2	287.6	233.4	261.5
18. Present Net Value (MM 1982$)	1566.1	954.2	1705.6	1879.0	1317.3	1478.9
19. Benefit/cost ratio	6.6	6.0	6.5	7.5	6.6	6.7

13. Under California law, a yield tax currently equal to three percent of timber harvest value is levied on timber operators.

14. Total personal income, including wages, salaries, proprietors' income, and rents was estimated for the Forest's zone of influence. See Appendix B for a description of the methodology used to make estimates.

15. Employment generated by the Forest in the zone of influence was estimated.

16. Discounted benefits over the planning period. Background benefits are not included.

17. Discounted costs over the planning period. Background costs are not included.

18. Discounted benefits less total discounted costs. Background Present Net Value is not included.

19. Discounted benefits divided by total discounted costs.

TABLE 20

Present Net Value Comparison

Marginal Costs of Constraints

(Millions of 1982 Dollars)

I.D Code Name	PNV	Change In PNV 1/	Dis-counted Cost	Change In Disc. Cost 1/	Dis-counted Benefits	Change In Disc. Benefits 1/	Discounted Benefits By Resource					Discounted Costs By Resource				
							Dev. Rec.	Disp. Rec.	Tim-ber	Range	Other 2/	Dev. Rec.	Disp. Rec.	Tim-ber	Roads	Other 3/
FLW (PNV w/o MMRs)	1879 4	N/A	288 8	N/A	2168 2	N/A	1271 0	633 7	49 8	13 0	200 7	151.0	76 0	31 1	3 2	27 5
MMR (PNV w/MMRs) 4/	1879 1	-0 3	288 9	0 1	2168 0	-0 2	1271 0	633 7	49 8	13 0	200 5	151.0	76 0	31 6	3 1	27 2
CEE (Con-strained Economic Efficiency w/MIRs) 5/	1879 0	-0 1	287 6	-1 3	2166 6	-1 4	1271 0	633 7	48 5	13 0	200 4	151 0	76 0	30 4	3 0	27 2
MLV (Minimum Level Management) 6/	1605.1	N/A	81 1	N/A	1686 2	N/A	0	65 4	0	1 0	1619 8	0	3	0	0	79 8

1/ All changes are measured incrememtally from the FLW benchamrk (maximum PNV wihtout MMRs)

2/ Other discounted benefits include water, fire, geothermal, and fuelwood

3/ Other discounted costs include fire, sediment, fuelwood, range and wildlife

4/ Viable population and riparian constraints account for the difference between FLW and MMR

5/ Visual corridor MIRs account for the difference between MMR and CEE

6/ The minimum level benchmark shows naturally occurring background benefits and fixed costs associated with maintaining the National Forest in Federal ownership In order to display incremental tradeoffs in this table, these background benefits and fixed costs have been subtracted from the other benchmarks and alternatives

TABLE 21

Present Net Value Comparison

Marginal Costs of Constraints

(Millions of 1982 Dollars)

I D Code Name	PNV	Change In PNV 1/	Dis-counted Cost	Change In Disc. Cost 1/	Dis-counted Benefits	Change In Disc. Benefits 1/	Discounted Benefits By Resource					Discounted Costs By Resource				
							Dev. Rec.	Disp. Rec.	Tim-ber	Range	Other 2/	Dev. Rec.	Disp. Rec.	Tim-ber	Roads	Other 3/
The follow ng alternatives are listed in order of declining PNV																
CEE	1879 0	N/A	287 6	N/A	2166.6	N/A	1271 0	633 7	48 5	13 0	200 4	151 0	76 0	30 4	3 0	27.2
RPA	1705 6	-173 4	312 2	24 6	2017 8	148 8	1098 9	621.8	76 5	14 8	205 8	134 5	73 0	62 0	3 8	38 9
PRP	1566 1	-312 9	280 9	-6 7	1847 0	319.6	983 8	610 1	44 4	10 1	198 6	123 9	82 2	40 9	2 7	31.2
AMB	1478 9	-400 1	261 5	-26 1	1740 4	-426 2	910 7	579.6	40 7	10 2	199 2	104 0	96 7	24 3	2 5	34.0
AMN	1317 3	-561 7	233 4	-54 2	1550 7	-615 9	806 0	508 8	31 9	9 3	194 7	95 0	84 4	21 6	1 9	30.5
CDR	954 2	-924 8	197 6	-90 0	1151 8	-1014 8	603 8	311 0	28.3	10 4	198 3	69 4	67 2	28 7	2 3	30.7
MLV 4/	1605 1	N/A	81 1	N/A	1686 2	N/A	0	65 4	0	1 0	1619 8	0	3	0	0	79 8

1/ All changes in PNV are measured from the CEE (constrained economic efficiency) alternative

2/ Other discounted benefits include water, geothermal, fire, fuelwood, and wildlife

3/ Other discounted costs include fire, fuelwood, sediment, range, and wildlife

4/ The minimum level benchmark (HLV) shows the naturally occurring background benefits and fixed costs associated with maintaining the Inyo National Forest in Federal ownership In order to display incremental tradeoffs, the background benefits and fixed costs have been subtracted from the PNV of other alternatives in this table

TABLE 22

Average Annual Cash Flows and Non-Cash Benefits

(millions of undiscounted dollars per year)

	Decade 1				Decade 5			
	Net Cash Flow	Total Federal Cost	Returns to Treasury	Non-Cash 1/ Benefits	Net Cash Flow	Total Federal Cost	Returns to Treasury	Non-Cash 1/ Benefits
Alternative								
CUR	-6 9	10 8	3 9	90 1	-6 4	10 8	4.4	109 9
RPA	-7 8	13.3	5 5	94.9	-9.3	22 3	13.0	183 5
CEE	-8 6	12.6	4 0	97 6	-9 5	18 0	8.5	157 9
PRF	-9 4	13 3	3 8	93 5	-9 7	17 2	7.5	138 0
AMB	-9 9	13.4	3 5	92 7	-8 4	15 1	6 7	135 9
AMN	-11 0	13 7	2 7	89 8	-9 2	14 6	5 4	126 4

1/ See Appendix B for detailed listing cash and non-cash benefits

TABLE 23

Indicators of Responsiveness to Major National and Regional Issues

	Decades 1/5		Timber Issues		Local County Issues (Decade 1)			Wilderness Issue	Recreation Issues			Range Issue
	Net Cash	Non-Cash	Decades 1/5		Receipts to	Jobs	Local	Recommended		Decades 1/5		Decades 1/5
	Flow	Benefits	Harvest	Fuelwood	Counties	Available	Income	Wilderness	Ski Use	Dev Rec.	Disp Rec.	Livestock
PNV 1/	$Million/Yr.		MMBF/Yr.	M Cords/Yr	$Million/Yr.	Person Yrs	$Million/Yr.	M Acres	MM RVDs	MM RVDs 2/	MM RVDs	M AUMs
The following alternatives are listed in order of declining PNV												
CEE 1879 0	-8 6/-9.5	97 6/157 9	8 3/10 1	7 2/5 0	1 0	1 5	35 8	339 8	1 3/3 4	3 7/6 3	1 9/3 3	48 6/46 5
RPA 1705 6	-7 8/-9 3	94 9/183 5	16 9/19 8	16 1/7 2	1 4	1 4	33 3	0	1 3/2 8	3 6/5 7	1 8/3 2	52 7/55 6
PRF 1571 9	-9 3/-10 3	94 0/137 2	7 1/7 1	7 0/2 8	1 0	1 3	31 8	172 6	1 3/2 2	3 5/5 1	1 8/3 2	41 4/41 4
AMB 1478 9	-9 9/-8 4	92 7/135 9	5 1/9 2	11 9/4 7	0 9	1 1	26 6	222 7	1 3/2 2	3 4/4.9	1 9/3 1	37 3/39 4
AMN 1317 3	-11 0/-9 2	89 8/126 4	2 9/6 3	9 2/3 0	0 7	1 1	26 1	510 8	1 3/1 7	3 2/3 6	1 8/2 6	35 6/35 1
CUR 954 2	-6 9/-5 6	90 1/109 9	11 513 0	13 2/6 2	1 0	1 1	26 4	107 6	1 3/2 2	3 2/4 1	1 8/2 3	38 1/39 1

1/ *All PNV values shown in this table are incremental above the PNV that represents minimum level fixed costs and values*

2/ Developed recreation RVDs include apline skiing

Table 24
Summary Listing of Reasons for Changes in the Present Net Value of Alternatives Studied in Detail as Compared with the Constrained Economic Efficiency Alternative

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CEE - Maximize Cost-Efficiency

PNV = 1,879.0 million
Fifth Period Net Cash Flow = -$9.5 million/yr.

This is the most economically efficient alternative, as it produces the highest PNV of any alternative. The high PNV is obtained through a large recreation program, providing developments in response to projected recreation demand. All recreation facilities are maintained at standard levels, with concentrated recreation areas and potential alpine ski areas fully developed over the next fifty years.

Timber, range, and wildlife outputs are provided at cost-efficient levels. Range and wildlife outputs will increase slightly over base-year levels. Watershed improvement will increase and improve riparian area-dependent resources.

Regional publics, primarily recreation users from Southern California, will find increased opportunity for both summer and winter recreation. However, with the emphasis on PNV, the quality of their experience will be compromised, primarily because timber harvest will take place in concentrated recreation use areas.

Local publics, primarily those viewing the Forest as a source of employment and income, will find increased opportunity due to expanded ski areas and developed summer recreation programs. Land use and community stability and cohesiveness will be strained with the projected population increases needed to support proposed ski area development. The intensive land-use emphasis in ski areas and other developed recreation sites will be countered by the large acreage in wilderness for those publics who see preservation as an appropriate management theme.

RPA - 1980 RPA Program

PNV = $1,705.6 million
Fifth Period Net Cash Flow = -$9.3 million/yr.

Management to meet 1980 RPA resource goals and targets represent a variety of opportunities for Forest users. The PNV of this alternative will, however, be reduced for many reasons.

Timber harvest will increase considerably from the 1982 base year. The higher timber harvest costs and displacement of other resource opportunities will contribute significantly to the loss of PNV. Loss of dispersed recreation will occur because no additional wilderness areas are proposed. Developed recreation opportunities will be limited because timber will be

harvested in some concentrated recreation areas and on potential alpine ski areas.

This level of production provides increased opportunities for local employment and income. In addition, the alternative provides the largest returns to the Treasury. Regional publics (primarily recreation users) will experience reduced recreation quality due to the intensive timber harvest. The large acreage available for regeneration harvest will be quite evident in areas within and adjacent to important recreation areas. The land-use emphasis will be contrary to the view of those publics who see preservation and wilderness as important management themes.

PRF - Preferred

PNV = $1,566.1 million
Fifth Period Net Cash Flow = -$9.7 million/yr.

This alternative is most similar to CEE, but three important factors contribute to reduced PNV. Alpine ski area development will be limited to provide only the amount of ski area development commensurate with identified community ability to support more skiing. While this scenario will increase local opportunities for jobs and income, limitations on skiing are the largest reason for the PNV drop from CEE. PNV will also decline due to restrictions on the size of the managed timber base and increased costs of production. Goshawk territories and vegetative diversity (old growth) requirements will be higher than CEE; potential ski areas will receive only modified timber management; and timber in the Monache area and the red fir belt of the San Joaquin Ridge will not be harvested. The implementation of uneven-aged management timber harvesting practices will be costly. The third factor will be a limitation on range AUMs to reduce conflicts with deer on key winter range.

This alternative will benefit all groups. Local interests will be met through a moderate increase in jobs and income opportunities. Regional publics will find increased recreational opportunities with a high level of visual quality. Timber harvest will affect only 68 percent of the total suitable timber lands, reducing conflict with a high-quality recreational experience over much of the Forest.

AMB - Emphasize Wildlife and Recreation

PNV = $1,478.9 million
Fifth Period Net Cash Flow = -$8.4 million

This alternative places primary emphasis on the quality and quantity of wildlife habitat, with a secondary emphasis on expansion of the developed recreation program. The reasons for the reduced PNV are discussed below.

The acreage managed for vegetative diversity (old growth) and goshawk nesting territories is increased about 44-fold over the Minimum Management Requirement level, and no timber harvest is allowed on those acres in order to provide maximum protection level for wildlife. Ski area development and

timber harvest in the San Joaquin area will be limited in order to protect key deer migration corridors. Timber will not be harvested in the Monache area so that impacts on wildlife and visual quality will be minimized. Domestic livestock grazing will be eliminated on deer winter range and delayed in key fawning habitat. Local publics will lose some opportunities for growth in employment and income due to these restrictions.

The reduced timber and range programs, coupled with a moderate recreation program, will reduce costs and maintain adequate benefits to allow this alternative to have the second lowest fifth-period net cash-flow deficit.

Those regional publics interested in wilderness and/or skiing will benefit from this alternative; local publics will experience increased jobs and income levels in response to increased skiing. Overall recreation quality will increase in this alternative. In later decades, while regional publics could find more congestion in developed recreation sites, ample opportunities for dispersed recreational uses will still be available.

AMN - Maximize all Amenities

PNV = $1,317.3 million
Fifth period Net Cash Flow = -$9.2 million

This alternative emphasizes production of non-cash and non-market benefits. The loss in PNV is significant, nearly 30 percent below CEE. The following factors explain much of the drop in PNV.

Vegetative diversity (old growth) and goshawk nesting territories will be 66 times as large as in the Minimum Management Requirements. No timber harvest will be allowed on these areas; the Monache and San Joaquin areas will not be harvested. Ski development will be restricted to increases on existing ski areas. Very little new recreation facility construction will occur, while dispersed recreational opportunities will increase primarily from a greatly expanded wilderness base. Timber management uses uneven-aged management techniques only and will meet the Retention Visual Quality Objective in the foreground zone of all Sensitivity Level 1 travel routes and Partial retention on all other lands. Domestic livestock grazing rill be eliminated from key mule deer winter range, and grazing on key fawning areas will be delayed.

Few groups will gain from this alternative. Local publics will find little change in jobs or income, primarily because increases in ski areas and developed sites are limited. Regional publics will find restricted developed opportunities and vehicle access; recreation demand will not generally be met. Publics with an interest in natural resource preservation will benefit from the large wilderness acreage and low overall level of environmental disturbance. National economic interests will not be met, as seen by the large PNV reduction and low returns to the Treasury. This alternative has the largest first decade average negative net cash flow.

CUR - Current 1982 Program - No Action

PNV = $954.2 million
Fifth Period Net Cash Flow = -$6.4 million

The CUR alternative portrays long-range management as limited by 1982 funding. This alternative projects the lowest PNV of all alternatives studied in detail. This PNV drop is directly associated with the budget restriction. The shortage of funding primarily affects the recreation, range, and wildlife programs.

Recreation programs will be managed at low-standard levels, reducing the quality of the recreation experience, the public benefits provided, and the PNV. The range, fish, and wildlife programs will be unable to expand or intensify under current funding.

Timber harvest will be maintained above economically efficient levels through the planning horizon, with loss of potential downhill ski areas. Costs associated with maintaining the current harvest level further reduce PNV.

No groups will gain by this alternative. Regional publics will find a low quality of recreation and increased use and congestion of concentrated recreation areas. Local publics will find the same general opportunities for jobs and income as they presently do; the only increases will be associated with ski area growth. These factors add up to a large reduction in PNV (43 percent below CEE), the lowest return to the Treasury, and the lowest total budget of any alternative.

Table 25

Comparison of Key Environmental Consequences

RESOURCE	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
ECONOMIC ENVIRONMENT	The economic environment varies by alternative in terms of the Forest budget, area employment, and Receipts Act Payments Average annual figures for budget and Receipts Act payments for the fifth decade are displayed below, employment figures are projected for the first decade					
	Forest Budget 12 5 million	Forest Budget 10.0 million	Forest Budget 20 6 million	Forest budget 17.1 million	Forest budget 13.1 million	Forest budget 15.1 million
	Receipts Act pmts $1 8 MM	Receipts Act pmts $1.1 MM	Receipts Act pmts $3 3 MM	Receipts Act pmts. $2.1 MM	Receipts Act pmts. $1.4 MM	Receipts Act pmts. $1.7 MM
	Employment 1,300 person-years	Employment 1,100 person-years	Employment 1,400 person-years	Employment 1,500 person years	Employment 1,100 person-years	Employment 1,100 person-years
SOCIAL ENVIRONMENT	Generally benefits all affected social groups	Benefits groups linked with economic outputs, reduces the facility-related benefits to recreationists	Benefits groups linked with economic outputs; reduces amenity benefits to recreationists	Benefits all recreationists	Benefits preservationists and wilderness advocates	Benefits most of the affected groups in the short term, negatively affects groups linked with economic outputs in the long run
CULTURAL RESOURCES	A rating system has been designed to indicate the relative potential threat to cultural resources posed by different combinations of land-disturbing management activities and land allocation decisions Cumulative relative threat factors, representing the net effect of direct disturbance, indirect disturbance, and beneficial impacts are displayed below					
	Relative threat factor moderate	Relative threat factor low	Relative threat factor high	Relative threat factor moderate	Relative threat factor low	Relative threat factor low

Table 25 (continued)
Comparison of Key Environmental Consequences

RESOURCE	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
FISH	Fish habitat capability changes by alternative in response to the relative amounts of stream habitat improvement and watershed improvement The total acres of stream fish habitat improved (both by direct habitat improvement and induced by watershed improvement) and percent change in Forest-wide stream habitat capability, relative to 1982, by the end of the fifth decade are shown below. Lake habitat capability is common to all alternatives.					
	Stream acres Improved 470	Stream acres Improved 205	Stream acres Improved 417	Stream acres Improved 621	Stream acres Improved 561	Stream acres Improved 583
	Hab capability change from 1982 +32%	Hab capability change from 1982 +15	Hab capability change from 1982 +31%	Hab capability change from 1982 +44%	Hab capability change from 1982 +36%	Hab. capability change from 1982 +39%
FURTHER PLANNING AREAS	The consequences of alternatives on further planning areas differ in terms of the management prescriptions (Rx) applied to those areas Management prescriptions have been grouped for this analysis into. wilderness Rx, amenity-emphasis Rx, commodity-emphasis Rx, and concentrated recreation use Rx No further planning acreage on the Forest was allocated to concentrated recreation use Rxs under any alternative					
	Percent of total further planning acres by Rx type	Percent of total further planning acres by Rx type	Percent of total further planning acres by Rx type	Percent of total further planning acres by Rx type	Percent of total further planning acres by Rx type	Percent of total further planning acres by Rx type
	28% wilderness	17% wilderness	0 wilderness	54% wilderness	82% wilderness	36% wilderness
	52% amenity	37% amenity	15% amenity	5% amenity	8% amenity	61% amenity
	20% commodity	46% commodity	85% commodity	41% commodity	0 commodity	3% commodity
MINERALS	The consequences of alternatives on opportunities for mineral exploration and development are determined by the acres of Forest land with high or moderate mineral potential available for mineral activities The majority of lands withdrawn from mineral entry under the alternatives are in recommended wilderness					

Table 25 (continued)
Comparison of Key Environmental Consequences

RESOURCE	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
	Acres of hi/mod mineral potential available for mineral activity 282,800	Acres of hi/mod mineral potential available for mineral activity· 284,200	Acres of hi/mod mineral potential available for mineral activity 314,400	Acres of hi/mod. mineral potential available for mineral activity 214,600	Acres of hi/mod. mineral potential available for mineral activity 135,500	Acres of hi/mod. mineral potential available for mineral activity: 237,400
	Mineral opportunity high	Mineral opportunity high	Mineral opportunity highest	Mineral opportunity moderate	Mineral opportunity low	Mineral opportunity moderate
PROTECTION	The consequences of the alternatives on fire management are expressed in terms of wildfire acres burned That acreage is a function of the selected fire organization, suppression strategies used, and the risk of fire starts represented by the amount of recreation on the Forest The total estimated acreage burned by wildfire by the end of the fifth decade is displayed below					
	Total wildfire acres 53,190	Total wildfire acres: 52,870	Total wildfire acres 53,190	Total wildfire acres 64,520	Total wildfire acres: 48,150	Total wildfire acres· 51,390
RANGE	The consequences of alternatives on the domestic livestock grazing program are measure in terms of fifth decade grazing outputs, percent change relative to 1982, and range condition and trend					
	41 4 M AUMs total outputs	39 1 M AUMs total outputs	55 6 M AUMs total outputs	46 5 M AUMs total outputs	35 1 M AUMs total outputs	39 4 M AUMs total outputs
	No increase from 1982	6% reduction from 1982	34% increase from 1982	12% reduction from 1982	15% reduction from 1982	5% reduction from 1982
	Range condition improved on 69 1 M acres stable to declining elsewhere	Range condition in gradual decline	Range condition improved on 95 6 M acres stable to declining elsewhere	Range condition improved on 98 5 M acres, stable to declining elsewhere	Range condition improved on 66 6 M acres stable to declining elsewhere	Range condition improved on 73 8 M acres; stable to declining elsewhere

Table 25 (continued)
Comparison of Key Environmental Consequences

RESOURCE	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
RECREATION	The consequences of alternatives on recreation are measured in terms of the amount of use, the quality of the recreational experience, and the relative emphasis on different types of recreation. The following is an overview of recreational quality and relative emphasis					
	Developed site quality high	Developed site quality low	Developed site quality high	Developed site quality high	Developed site quality high	Developed site quality high
	Dispersed recreation quality moderate	Dispersed recreation quality low	Dispersed recreaction quality moderate	Dispersed recreation quality moderate	Dispersed recreation quality high	Dispersed recreation quality high moderate
	Emphasis on developed sites high, on alpine skiing moderate, on wilderness moderate, on dispersed recreation moderate	Emphasis on developed sites low, on alpine skiing moderate, on wilderness moderate, on dispersed recreation high	Emphasis on developed sites high, on alpine skiing moderate, on wilderness low, on dispersed recreation high	Emphasis on developed sites high, on alpine skiing high, on wilderness high moderate, on dispersed recreation moderate	Emphasis on developed sites low, on alpine skiing low, on wilderness high, on dispersed recreation low	Emphasis on developed sites mod , on alpine skiing moderate; on wilderness high moderate, on dispersed recreation moderate
TIMBER	The consequences of alternatives on the timber management program vary in terms of total acres managed for timber production and acres actually harvested within a given time period (including both regeneration harvest and intermediate harvest) The following harvest figures are totals for the fifth decade					
	Total timber production 75,233 acres	Total timber production 89,100 acres	Total timber production 99,200 acres	Total timber Production 97,600 acres	Total timber production 61,800 acres	Total timber production 69,900 acres
	Clearcut harvest 3,617 acres	Regeneration harvest 8,570 acres	Regeneration harvest 14,100 acres	Regeneration harvest 5,580 acres	Uneven-aged mgmt harvest 3,320 acres	Regeneration harvest 4,210 acres

Table 25 (continued)
Comparison of Key Environmental Consequences

RESOURCE	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
	Intermediate harvest 20,052 acres	Intermediate harvest 29,100 acres	Intermediate harvest 18,600 acres	Intermediate harvest 19,500 acres	Intermediate harvest 17,600 acres	Intermediate harvest 21,600 acres
	Uneven-aged mgmt harvest 8,678 acres					
VISUAL RESOURCES	The consequences of alternatives on visual resources are measured in terms of change in visual condition, the following figures indicate what percent of the total Forest lands would have improvements and reductions in visual condition by the fifth decade, net change in visual condition is also displayed					
	Improved visual condition 3 3%	Improved visual condition 2 4%	Improved visual condition 0 3%	Improved visual condition 2 0%	Improved visual condition 6 9%	Improved visual condition 4 7%
	Reduced visual condition 0 9%	Reduced visual condition 1 2%	Reduced visual condition 2 1%	Reduced visual condition 1 8%	Reduced visual condition 0.6%	Reduced visual condition 0 8%
	Net change in condition +2.2%	Net change in condition +1.2%	Net change in condition -1 8%	Net change in condition +0 2%	Net change in condition +6 3%	Net change in condition +3 9%
WATERSHED	The consequences of alternatives on soil stability and water quality vary by the amount of land disturbed for other resource management and by the amount of watershed restoration scheduled The relative potential for adverse effects on soil and water are shown by alternative below					
	low	moderate	high	moderate	low	low

Table 25 (continued)
Comparison of Key Environmental Consequences

RESOURCE	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
WILDERNESS	The consequences of alternatives on wilderness are measured primarily in terms of acres of new wilderness.					
	172,600 acres new wilderness	107 600 acres new wilderness	0 acres new wilderness	339,800 acres new wilderness	510,800 acres new wilderness	222,700 acres new wilderness
	38 percent of Forest in wilderness	35 percent of Forest in wilderness	30 percent of Forest in wilderness	47 percent of Forest in wilderness	56 percent of Forest in wilderness	41 percent of Forest in wilderness
WILDLIFE	The consequences of alternatives on wildlife are assessed in terms of habitat capability Changes in the following habitat capability factors are displayed below. mule deer habitat, older seral stages of coniferous forest (species such as goshawk), early and mid-successional brush (species such as sage grouse), snags and other habitat for cavity-nesting birds (species such as hairy woodpeckers), and habitat for riparian area-dependent species in wet meadows (such as yellow warblers) Changes are expressed in terms of percent increase or decrease relative to 1982					
	Mule deer habitat -2%	Mule deer habitat -4%	Mule deer habitat -47%	Mule deer habitat -14%	Mule deer habitat +20%	Mule deer habitat +18%
	Existing old growth in tentatively suitable timber base -27%	Existing old growth in tentatively suitable timber base -91%	Existing old growth in tentatively suitable timber base -92%	Existing old growth in tentatively suitable timber base -86%	Existing old growth in tentatively suitable timber base -38%	Existing old growth in tentatively suitable timaber base -59%

Table 25 (continued)
Comparison of Key Environmental Consequences

RESOURCE	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
	Early-mid succ. brush -69%	Early-mid succ. brush -42%	Early-mid succ. brush -31%	Early-mid succ. brush -24%	Early-mid succ. brush -36%	Early-mid succ. brush -36%
	Snags 0	Snags 0	Snags 0	Snags 0	Snags +30%	Snags +30%
	Wet meadows 0	Wet meadows -58%	Wet meadows -35%	Wet meadows 0	Wet meadows 0	Wet meadows 0

TABLE 26

Comparison of Response to Issues and Concerns

RESOURCE	Alternatives					
Issue/Concern	PRF	CUR	RPA	CEE	AMN	AMB
ECONOMIC ENVIRONMENT						
How can the Forest produce services to maximize economic efficiency?	Present net value (PNV), or the sum of resource benefits minus management costs, is a measure of economic goods and					
	PNV=3170 8	PNV=2559.3	PNV=3310 7	PNV=3484 1	PNV=2922 4	PNV=3084 0
SOCIAL ENVIRONMENT						
How does the management of the Inyo National Forest influence the local social environment and lifestyle?	Generally benefits all affected social groups	Benefits groups linked with economic outputs; reduces facilities for recreationists	Benefits groups linked with economic outputs, reduces amenities for recreationists	Benefits all recreationists	Benefits preservationists and wilderness advocates	Benefits most of the affected groups in the short term, negatively affects economic outputs in the long run
AIR QUALITY						
What can the Forest do to influence air quality?	The Forest will coordinate its activities with the Great Basin Unified Air Pollution Control District and will ensure that all Forest Activities meet or exceed State and Federal standards Class 1 areas will receive the highest level of protection AQRVs, AQRV indicators, and smoke management plans will be developed					
CULTURAL RESOURCES						
How should the Forest manage cultural resources and provide for the use of Forest land by American Indians for traditional practices	Inventory and evaluate 45 M acres per year	Inventory and evaluate 12 M acres per year	Inventory and evaluate 180 M acres per year	Inventory and evaluate 12 M acres per year	Inventory and evaluate 45 M acres per year	Inventory and evaluate 45 M acres per year
	Emphasize balanced program of protection and interpretation	Emphasize project-related survey work	Use both project-related and formal survey work to meet RPA goal	Emphasize project-related survey work	Emphasize formal survey program and interpretation	Emphasize formal survey program and interpretation
	Coordinate with American Indian groups to ensure reasonable access for traditional practices					

TABLE 26 (continued)
Comparison of Response to Issues and Concerns

RESOURCE	Alternatives					
Issue/Concern	PRF	CUR	RPA	CEE	AMN	AMB
DIVERSITY						
What is a desirable level of vegetative diversity for the Inyo, and what should the Forest do to maintain or achieve that level?	The optimal level of diversity is one in which the distribution of vegetative types and seral stages best approximates a natural distribution A desirable diversity level would maintain optimal diversity as a goal while taking multiple-resource management and logistical concerns into account. Diversity levels vary by alternative in response to various alternative themes The diversity elements most likely to be affected by resource management practices are older seral stages of coniferous forest and early seral stages of shrub-type vegetation					
	10 percent of tentatively suitable timber managed for older seral stages (moderate)	0 percent of tentatively suitable timber managed for older seral stages (low)	0 percent of tentatively suitable timber managed for older seral stages (low)	0 percent of tentatively suitable timber managed for older seral stages (low)	30 percent of tentatively suitable timber manged for older seral stages (very high)	20 percent of tentatively suitable timber managed for older seral stages (high)
	33 0 M acres existing old growth in tentatively suitable timber base by 5th decade	5.0 M acres existing old growth in tentatively suitable timber base by 5th decade	4 2 M acres existing old growth in tentatively suitable timber base by 5th decade	7 6 M acres existing old growth in tentatively suitable timber base by 5th decade	33 2 M acres existing old growth in tentatively suitable timber base by 5th decade	22 1 M acres existing old growth in tentatively suitable timber base by 5th decade
	11 5 M acres total shrub treatment (high)	86 M acres total shrub treatment (low)	119 M acres total shrub treatment (high)	117 M acres total shrub treatment (high)	111 M acres total shrub treatment (moderate)	109 M acres total shrub treatment (moderate)
	75% in oldest seral stage by 5th decade	80% in oldest seral stage by 5th decade	74% in oldest seral stage by 5th decade	73% in oldest seral stage by 5th decade	76% in oldest seral stage by 5th decade	76% in oldest seral stage by 5th decade

TABLE 26 (continued)

Comparison of Response to Issues and Concerns

RESOURCE	Alternatives					
Issue/Concern	PRF	CUR	RPA	CEE	AMN	AMB
ENERGY						
How does energy development fit in with the overall resource management program on the Forest?	Energy development on the Inyo National Forest is encouraged commensurate with the other resource values and management direction that apply to the lands proposed for development Specific energy development proposals will be evaluated on a case-by case basis					
FACILITIES						
What level of facility construction and maintenance is needed to support Forest management objectives?	The existing number of administrative sites, plus a visitor center for the Mono Basin National Forest Scenic Area, is considered adequate for Forest management under all alternatives The overall miles of road and trail, however, vary by alternative in response to the objectives of the alternative The need to maintain facilities to assigned maintenance levels is acknowledged under all alternatives, the ability of the Forest to meet those levels is limited only in Alternative CUR, which has specified budget limitations Direction to develop a materials management plan, to inventory uninventoried roads, and to consider mass transit options is common to all alternatives.					
	Total road construction in 5 decades 87 miles	Total road construction in 5 decades 46 miles	Total road construction in 5 decades 103 miles	Total road construction in 5 decades 65 miles	Total road construction in 5 decades 14 miles	Total road construction in 5 decades 38 miles
	Total trail construction in 5 decades 535 miles	Total trail construction in 5 decades 178 miles	Total trail construction in 5 decades 538 miles	Total trail construction in 5 decades: 725 miles	Total trail construction in 5 decades. 429 miles	Total trail construction in 5 decades 509 miles
FISH						
How should fish habitat on the Inyo National Forest be managed?	Fish habitat capability changes by alternative in response to the relative amount of direct fish habitat improvement and the habitat improvement induced by watershed improvement work Pounds of fish is a measure of resident fish (other then threatened trout) habitat capability on the Forest Threatened trouts on the Forest are the Lahontan cutthroat and Paiute cutthroat trout Habitat for threatened trouts is measured in total acres of stream habitat.					

TABLE 26 (continued)

Comparison of Response to Issues and Concerns

RESOURCE	Alternatives					
Issue/Concern	PRP	CUR	RPA	CEE	AMN	AMB
FISH (con't)	1674 M pounds of fish	1651 M pounds of fish	1673 M pounds of fish	1689 M pounds of fish	1679 M pounds of fish	1632 M pounds of fish
	23 acres for threatened trout	23 acres for threatened trout	23 acres for threatened trout	23 acres for threatened trout	40 acres for threatened trout	40 acres for threatened trout
FURTHER PLANNING AREAS						
How should roadless areas in further planning status be managed?	173 M acres in 4 areas recommended for wilderness	108 M acres in 2 areas recommended for wilderness	0 acres/areas recommended for for wilderness	340 M acres in 6 areas recommended for wilderness	511 M acres in 12 areas recommended for wilderness	223 M acres in 6 areas recommended for wilderness
GEOLOGY						
What is the role of geologic resources and services in the overall Forest management program?	The risk to proposed projects posed by geologic processes such as earthquakes, soil movements, and volcanic events will be taken into account when facilities are constructed and projects are planned A list of outstanding geologic features has been identified; these features will be evaluated for possible special interest are or research natural area designation The need to tap groundwater for Forest or municipal use will be addressed on a case-by-case basis.					
LANDS						
What land use and landownerhsip adjustment policies and procedures are needed?	Land use and landownership adjustment policies and priorities are the same for all alternatives, the emphasis, however, varies somewhat The emphasis on responding to community needs for additional land and special uses is directly related to the projected ski area capacity The land acquisition emphasis also varies					
	Moderate demand by communities for Forest land	Moderate demand by communities for Forest land	Moderate demand by communities for Forest land	Moderate demand by communities for Forest land	Moderate demand by communities for Forest land	Moderate demand by communities for Forest land
	Acquire land for summer recreation	No special acquisition emphasis	Acquire land for summer recreation	Acquire land for summer recreation	Acquire land for key wildlife habitat	Acquire land for key wildlife habitat

TABLE 26 (continued)

Comparison of Response to Issues and Concerns

RESOURCE	Alternatives					
Issue/Concern	PRF	CUR	RPA	CEE	AMN	AMB
MINERALS						
How can the Forest best encourage mineral (including geothermal) *exploration and development in* coordination with surface resource values and land uses?	The Forest can encourage mineral exploration and development by making those lands with moderate to high mineral potential ratings available for mineral entry Wilderness, research natural areas, and some types of *special* interest areas are withdrawn from mineral entry					
	282 8 M acres of *moderate or high* potential available for entry	284 2 M acres of *moderate* or high potential available for entry	314 4 M acres of moderate or high potential available for entry	214 6 M acres of moderate or high potential available for entry	135 5 M acres of moderate or high potential available for entry	237 4 M acres of moderate or high potential available for entry
	Mineral opportunity high	Mineral opportunity high	Mineral opportunity highest	Mineral opportunity moderate	Mineral opportunity low	Mineral opportunity moderate
PEST MANAGEMENT						
What is the appropriate pest management strategy for the Inyo?	The Inyo National Forest will apply the integrated pest management (IPM), approach to all appropriate activities, a full range of pest management alternatives will be considered on a project-level basis The selection of a treatment method will be based on a site-specific analysis of relative effectiveness, environmental effects, and costs					
PROTECTION						
What is the appropriate fire management strategy for the Inyo?	Prevention 17% suppression 83% Staffing per Workforce Plan	Prevention 24% suppression 76% 1982 staffing	Prevention 17% suppression 33% 1982 staffing	Prevention 17% *suppression* 83% 1982 staffing	Prevention 17% *suppression* 83% 1982 staffing	Prevention 17% suppression 83% 1982 staffing
	53 M ac wildfire	53 M ac wildfire	53 M ac wildfire	65 M ac wildfire	43 M ac wildfire	51 M ac wildfire

TABLE 26 (continued)

Comparison of Response to Issues and Concerns

RESOURCE	Alternatives					
Issue/Concern	PRF	CUR	RPA	CEE	AMN	AMB
RANGE						
How should the Inyo balance the needs of the range program (domestic livestock and wild horses and burros) with the need to protect and/or produce other resources.	Directions for the integration of range management with other resources is found in the Forest-wide Standards and guidelines and the management prescriptions applied to all alternatives. Wild horses and burros are managed under territory management plans in all alternatives. Fifth-decade grazing outputs and trade-offs between livestock and other resources differ by alternative					
	41.4 M AUMS	39.1 M AUMS	55.6 M AUMS	46 5 M AUMS	35.1 M AUMS	39 4 M AUMS
	Cattle decline in suitable timber	Cattle decline in suitable timber	Cattle decline in suitable timber	Cattle decline suitable timber	Cattle decline in suitable timber	Cattle unchanged in suitable timber
	Mule deer priority on key winter range	Mule deer priority on key winter range	Cattle priority on key deer winter range	Mule deer priority on key winter range	Cattle removed from key deer winter range	Cattle removed from key deer winter range
RECREATION						
What is the best recreation opportunity program for the Inyo NF (considering supply, demand, other resource management and development opportunities, and environmental protection needs)?	Directions that ensure environmental protection applies equally to all alternatives The alternatives do differ in terms of the degree to which the demand for recreation in each subcategory is met by the fifth decade, maximum ski area capacity, and wwhich ski areas are developed					
	Dispersed use: 76% of demand	Dispersed use 43% of demand	Dispersed use 76% of demand	Dispersed use. 77% of demand	Dispersed use 54% of demand	Dispersed use 70% of demand
	Developed summer. 81% of demand	Developed summer· 50% of demand	Developed summer 81% of demand	Developed summer 81% of demand	Developed Summer 53% of demand	Developed Summer 74% of demand
	Alpine Skiing 40% of demand	Alpine Skiing 52% of demand	Alpine Skiing 67% of demand	Alpine Skiing 80% of demand	Alpine Skiing 40% of demand	Alpine Skiing 53% of demand

TABLE 26 (continued)
Comparison of Response to Issues and Concerns

RESOURCE	Alternatives					
Issue/Concern	PRF	CUR	RPA	CEE	AMN	AMB
RECREATION (con't)						
	31,000 SAOT	39,000 SAOT	46,000 SAOT	61,000 SAOT	31,000 SAOT	43,000 SAOT
	Mammoth & June	Mammoth & June, Sherwin, Summit, &/or Knolls	Mammoth, June, Sherwin & Summit	Mammoth, June, Sherwin, Summit San Joaquin, White Wing & Knolls	Mammoth & June	Mammoth, June, Summit, Knolls, & White Wing
RESEARCH NATURAL AREAS What contibutions should the Inyo make to the national and Regional Systems of research natural areas (RNAs)?	The Forest has five established research natural areas and is recommending two addtitional RNAs for establisment under all alternatives. These seven RNAs meet all botanical RNA Targets assigned to the Inyo National Forest Potential geologic RNAs will be considered once Regional Targets for geologic elements are established.					
RIPARIAN AREAS What is the significance of riparian areas on the Forest, and how should riparian area dependent resources be maintained enhanced, and/or restored?	The direction under all alternatives recognizes the significance of riparian areas on the Forest by prohibiting new activities in riparian areas that would have unacceptable long-term effects on water quality, fish (or other aquatic fauna) or water-dependent plant life. In addition, those alternatives with more work and fish habitat improvement would represent enhancement for riparian areas					
	243 ac fish habitat improvement	178 ac fish habitat improvement	286 ac fish habitat improvement	317 ac fish habitat improvement	257 ac fish habitat improvement	279 ac fish habitat improvement
	23 5 M ac watershed improvement	2 0 M ac watershed improvement	9 9 M ac watershed improvement	23 5 M ac watershed improvement	23.5 M ac watershed improvement	23 5 ac watershed improvement
	Riparian enhancement moderate	Riparian enhancement low	Riparian enhancement low	Riparian enhancement high	Riparian enhancement high	Riparian enhancement high

TABLE 26 (continued)

Comparison of Response to Issues and Concerns

RESOURCE	Alternatives					
Issue/Concern	PRF	CUR	RPA	CEE	AMN	AMB
SENSITIVE PLANTS						
How should the Forest manage habitat for sensitive plant species?	Direction common to all alternatives calls for managing sensitive plant habitat to maintain population viability.					
SPECIAL INTEREST AREAS						
Should the Forest consider establishing any additional special interest areas?	No additional special interest areas are recommended in the Forest plan. However, a list of potential geologic special interest areas has been identified, those areas will be evaluated, and recommendations for establishment will be made by 1990					
TIMBER						
What is the best balance between timber (including fuelwood) production, other resource management and development opportunities, and environmental protection needs?	Timber management practices are integrated with other resources and environmental protection needs under all alternatives, the number of acres managed primarily for timber production varies Although the amount of fuelwood available from logging residue varies, the Forest will consider responding to the demand for fuelwood by making part of the programmed harvest available for sale as fuelwood if the amount from logging residue is insufficient.					
	Acres managed 75,233	Acres managed 89,100	Acres managed· 99,200	Acres managed: 97,600	Acres managed 61,800	Acres managed 69,800
VISUAL RESOURCES						
What role does visual quality play in the overall resource management and how can that quality be protected and enhanced?	The highest levels of visual protection are presented by the visual quality objectives of preservation (which applies only to wilderness and research natural areas) and retention (maximum protection outside such designations) program					
	M acres Preservation 693 Retention 661	M acres Preservation 688 Retention 472	M acres Preservation 580 Retention 333	M acres Preservation911 Retention 325	M acres Preservation 1079 Retention 504	M acres Preservation 799 Retention 684

TABLE 26 (continued)

Comparison of Response to Issues and Concerns

RESOURCE	Alternatives					
Issue/Concern	PRF	CUR	RPA	CEE	AMN	AMB
VISUAL RESOURCES (con't)						
	Percent of Forest in P or R 70%	Percent of Forest in P or R 60%	Percent of Forest in P or R 47%	Percent of Forest in P or R 64%	Percent of Forest in P or R 82%	Percent of Forest in P or R 77%
WATERSHED						
How should the Forest respond to the needs for water quality, increased water yields, water rights for Forest resource management, and healthy watershed condition?	Direction to protect water quality, acquire water rights, work with communities to imporve water availability, and maintain good watershed condition apply equally to all alternatives The total watershed restoration work completed over 50 years varies					
	17,100 acres of restoration	2,000 acres of restoration	9,860 acres of restoration	23,500 acres of restoration	23,500 acres of restoration	23,500 acres of restoration
WILD AND SCENIC RIVERS						
What recommendations should the Forest make for management of the candidate wild and scenic river?	The candidate wild and scenic river on the Forest is recommended for designation as wild, scenic, or recreation These recommendations are common to all alternatives					
WILDERNESS						
Is there a need for change in the management of designated wilderness on the Forest?	Existing wilderness management plans are incorporated with direction to review and update as needed under all alternatives, the need to develop management plans for recommended wilderness is also addressed					
WILDLIFE						
How, where, and to what degree should wildlife habitat be maintained and enhanced, and how should wildlife needs be coordinated with other resources management and development opportunities on the Forest?	Direction to meet minimum management requirements for wildlife apply equally to all alternatives. The alternatives differ, for some species, in the degree to which a species is managed to exceed those requirements. Coordination with other resources is handled primarily in the Standards and Guidelines that apply to all alternatives					
	Deer priority on key winter range	Deer priority on key winter range	Cattle priority on key deer winter range	Deer priority on key winter range	Cattle removed from key deer winter range	Cattle removed from key deer winter range

TABLE 26 (continued)
Comparison of Response to Issues and Concerns

RESOURCE	Alternatives					
Issue/Concern	PRF	CUR	RPA	CEE	AMN	AMB
WILDLIFE (con't)						
	Manage grazing to protect key fawning areas	Manage grazing to protect key fawning areas	No special management of fawning areas	No special management of fawning areas	Delay grazing on key fawning areas -July 15 or later	Delay grazing on key fawning areas -July 15 or later
	Protect migration routes	Does not address migration routes	Does not address migration routes	Doesn't address migration	Protect migration routes	Protect migration routes
	Peregrine falcon 2 nesting pairs	Peregrine falcon 2 nesting pairs	Peregrine falcon 2 nesting pairs	Peregrine falcon 2 nesting pairs	Peregrine falcon 4 nesting pairs	Peregrine falcon: 4 nesting pairs
	15 goshawk territories in suitable timber	15 goshawk territories in suitable timber	9 goshawk territories in suitable timber	9 goshawk territories in suitable timber	15 goshawk territories in suitable timber	15 goshawk territories in suitable timber
	1 Sierra Nevada mountain sheep reintroduction	1 Sierra Nevada mountain sheep reintroduction	0 Sierra Nevada mountain sheep reintroduction	0 Sierra Nevada mountain sheep reintroduction	7 Sierra Nevada mountain sheep reintroduction	7 Sierra Nevada mountain sheep reintroduction
	1 Nelson mountain sheep reintro-duction	1 Nelson mountain sheep reintro-duction	0 Nelson mountain sheep reintro-duction	0 Nelson mountain sheep reintro-duction	1 Nelson mountain sheep reintro-duction	1 Nelson mountain sheep reintro-duction

TABLE 26 (continued)
Comparison of Response to Issues and Concerns

RESOURCE	Alternatives					
Issue/Concern	PRF	CUR	RPA	CEE	AMN	AMB
WILDLIFE (con't)						
	See "Diversity" for old growth	See "Diversity" for old growth	See "Diversity" for old growth	See "Diversity" for old growth	See "Diversity" for old growth	See "Diversity" for old growth
	Maintain/create snags to meet 40% of potential	Maintain/create snags to meet 40% of potential	Maintain/create snags to meet 40% of potential	Maintain/create snags to meet 40% of potential	Maintain/create snags to meet 100% of potential	Maintain/create snags to meet 100% of potential
	74 M acres total shrub treatment for wildlife	65 M acres total shrub treatment for wildlife	48 M acres total shrub treatment for wildlife	85 M acres total shrub treatment for wildlife	78 M acres total shrub treatment for wildlife	102 M acres total shrub treatment for wildlife

III

AFFECTED ENVIRONMENT

CHAPTER III. AFFECTED ENVIRONMENT

INTRODUCTION

This chapter describes the current environmental and resource management characteristics of the Inyo National Forest. The description emphasizes those factors most likely to be affected by various alternatives. The chapter begins with a general description of physical, biological, economic and social factors followed by more specific information for each resource.

The content of this chapter is taken primarily from the Inyo National Forest Analysis of the Management Situation (AMS). The AMS analyzes the Forest's ability to supply goods and services in response to society's demands. From this information needed changes in management can be identified. The complete set of AMS documents is available at the Inyo National Forest Supervisor's office in Bishop.

Additional information has been added to this chapter from the public's comments in response to the Draft EIS.

GENERAL DESCRIPTION OF THE FOREST

The Inyo National Forest consists of four Ranger Districts with offices in Lee Vining, Mammoth Lakes, Bishop, and Lone Pine. The Forest Supervisor's office is in Bishop.

The Forest encompasses large parts of the Sierra Nevada, Glass, White, and Inyo Mountains. Most Forest lands drain into the Mono Basin or Owens River; smaller portions drain westward into the San Joaquin or Kern Rivers, or eastward into the Great Basin. The Forest is long and narrow, extending 165 miles from north to south, and varying in width from 4 to 60 miles. It straddles the boundary between the southern Sierra Nevada and southern Basin and Range Physiographic and Geologic provinces.

The natural environment of the Inyo is noteworthy for its contrasts. Elevations range from 3,680 feet near Owens Dry Lake to the peak of Mt. Whitney at 14,495 feet. Plant and animal habitats include such contrasting elements as desert and wet meadow, forest and alpine tundra. Rugged, barren escarpments stand above forested hills, sagebrush flats, and grassy plateaus.

The Sierra Nevada is primarily composed of igneous intrusive rock 70 to 180 million years old, with the occasional remains of older sediments up to 400 million years old. The White and Inyo Mountains in the Basin and Range province are composed primarily of metamorphic sediments, some older than 600 million years. Volcanic rocks (some as young as 500 years) and sand and gravel fill the Mono Basin, Long Valley Caldera, and Owens Valley.

The climate on the Forest is as diverse as its topography. The higher elevations in the Sierra Nevada receive high levels of precipitation. Mammoth Pass, for example, receives an average of 45 inches a year, most of

which falls as snow between November and March. The eastern portions and lower elevations of the Forest are quite arid. The community of Bishop, located at 4,000 feet and about midway between the eastern and western Forest boundaries, records an average of six inches of annual rainfall, most of which occurs during the winter months.

Many outstanding natural features are included within the Forest boundary:

- Mt. Whitney is the highest peak in the 48 contiguous states.

- The Ancient Bristlecone Pine Forest includes both the Methuselah tree (the world's oldest known living tree) and the Patriarch (the largest known Bristlecone pine).

- Mono Lake is a large inland sea that supports a unique biological community including brine shrimp, brine flies, nesting California gulls, and several million migratory birds.

- The Mono Craters are "textbook examples" of volcanic geology visited annually by students and scientists from around the nation.

- The Mono Craters and Mono Lake are only two of the scenic features in the Mono Basin National Forest Scenic Area designated by Congress in 1984.

- The Devils Postpile National Monument, administered by the National Park Service, is an outstanding volcanic feature.

- The Owens Valley is one of the deepest valleys in the world. The floor of the valley is about 4,000 feet in elevation; the mountain ranges on either side reach 14,000 feet in elevation.

- The Palisades Glacier is the southernmost glacier in the northern hemisphere.

- The Jeffrey pine forest is the largest contiguous stand of pure Jeffrey pine in the world.

- White Mountain Peak (14,246 feet) is the highest peak in the Great Basin.

- There is a portion of the native range of golden trout (the California State Fish) in the Golden Trout Wilderness.

- The White Mountain Research Station is the highest site in the U.S. that is occupied year-round.

The scenic appeal and recreational attractions provided by the natural environment and the proximity of the Forest to urban Southern California result in high levels of recreation use. The Inyo National Forest ranks fifth in recreation visitation among National Forests in the nation and second in California. Mammoth Mountain Ski Area receives more skier-days of use per year than any other ski area in the United States. The John Muir Wilderness is the most heavily used wilderness in the nation. The Inyo ranks first in coldwater fishing and second in overall angling recreation among the National Forests of California. Developed-site campground use leads the

nation. Summer dispersed camping, mule deer hunting, four-wheel drive recreation, and nordic skiing are also popular.

THE ECONOMIC ENVIRONMENT

SPHERE OF INFLUENCE

The lands administered by the Inyo National Forest are located in seven counties and span the states of California and Nevada.

Table 27
Inyo National Forest Land
by County and State

County or State	Acres	Percent of Forest
Mono	811,049	42.0
Inyo	794,352	41.1
Tulare	186,165	9.7
Madera	50,406	2.6
Fresno	25,256	1.3
California total	1,867,228	96.7
Esmeralda	49,884	2.6
Mineral	14,003	0.7
Nevada total	63,887	3.3
TOTAL NFS LANDS	**1,931,115**	**100.0**

Nearly 85 percent of the Forest lies within Inyo and Mono Counties, both of which lie east of the Sierra Nevada, and more than 95 percent of the Forest lies within the state of California. Ninety percent of Inyo County, the second largest county in the State, and more than 75 percent of Mono County are administered by the federal government. Currently, all timber harvesting and more than 90 percent of recreational activity on the Inyo National Forest take place in these two counties. The Forest recreation program is closely linked with the economic base of the counties because it supports a large portion of the tourism the area enjoys and depends upon for employment and income.

In contrast, Madera and Fresno Counties, which lie mostly on the west side of the Sierra Nevada, are more urban (with a combined 1980 population of 823,880) and oriented toward the San Joaquin Valley. Mineral and Esmeralda Counties in Nevada have only limited acreages on the Forest. The economic

contribution of Inyo National Forest activities to these two counties is overshadowed by the those of the Bureau of Land Management, the Toiyabe National Forest, the military, and the agriculture and gaming industries of southern Nevada. The Forest has a relatively limited overall economic impact on Tulare, Madera, Fresno, Mineral, and Esmeralda Counties. This economic situation is not expected to change in the foreseeable future.

Residents of Southern California, coming primarily from the Counties of San Diego, Los Angeles, Orange, Ventura, Riverside, and San Bernardino, make heavy use of Forest recreational facilities and resources, such as alpine ski areas, campgrounds, and wildernesses. The demand for recreational opportunities by Southern Californians strongly affects the entire Forest, as well as the communities near the Forest. The impact of the Inyo National Forest on Southern California is, however, insignificant due to the area's large size, huge population, and diverse economy.

The economic analysis and the following social analysis deal with Inyo and Mono Counties as the economic and social environment most likely to be affected by Forest activities. Within these counties, the dominant industries are tourism, general services, retail trade, and government. Forest-related activities and employment account for a major portion of private sector employment in the two counties.

POPULATION

Population growth in Inyo and Mono Counties has been substantial during the past two decades. Mono County, for example, grew by more than 113 percent between 1970 and 1980 ranking the county second among the fastest growing counties in the state. This rapid population growth can be attributed primarily to the recreational importance of the Mammoth Lakes area. Between 1960 and 1980, the Mammoth Lakes community grew from a population of 390 (17 percent of the county population) to 4,117 (48 percent of the county population).

During the same period, Inyo County grew 15 percent, a rate lower than the state average of 18 percent. Most of this growth took place in and around the community of Bishop, which serves as a service center for the entire two-county area. The major employers in the county are local, state, and federal governments.

Table 28
Projected Population 1980-2020

	1980	1990	2000	2020
Mono County (projected)	8,600	11,600	14,200	19,200
Inyo County (projected)	17,900	22,200	25,800	32,700
Mono County (avg. annual)	300	260	255	
Inyo County (avg. annual)	430	360	345	

EMPLOYMENT

The economy of the Inyo-Mono County area reflects the importance of recreation, tourism and the public sector. The three employment categories of services, retail sales, and government together accounted for nearly three quarters of the total wages and salary for workers in 1980. The employment base has grown by nearly 75 percent in the past decade. From 1972 to 1979, the average annual employment growth rate was 5.6 percent for the area (versus 4.2 percent for the state). The services and retail sales categories have enjoyed healthy employment gains, while government employment levels have tapered off and recently recorded some declines.

The high unemployment rates commonly found in tourist-oriented economies are found in the Inyo-Mono area. Rapid population growth, a broadening of the work force, the seasonal nature of the tourist industry, and the lack of diversification in the economy have resulted in unemployment rates that are generally higher than the state average.

ROLE OF THE INYO NATIONAL FOREST

The Forest makes a direct contribution to the area economy through expenditures in the private sector, the generation of jobs, recreational opportunities, and direct payments into county revenues. Forest expenditures for payroll and procurements in Fiscal Year 1982 were $8.55 million.

Payments into county revenues come from two sources: Payment in Lieu of Taxes and Receipts Act payments. Payment in Lieu of Taxes payments compensate counties for the loss of property tax revenues represented by nontaxable federal land within the county. In 1980, this payment to counties by the Inyo National Forest was $165,180.

Receipts Act payments are based on fees collected for use of Forest lands and resources. Twenty-five percent of dollars received by the federal treasury from such activities as timber sales, special-use permits, and campground fees are distributed through the Forest Service to the counties to assist with school and road costs. Total Inyo National Forest Receipts Act payments for Fiscal Year 1980 amounted to $385,003.

The Forest also provides indirect economic benefits to the public by supplying certain goods and services at prices below established or estimated market values. Examples include outdoor recreation use and the availability of Forest lands for commercial enterprises such as livestock production, apiaries, mineral and energy exploration and development, and water production.

Table 29
Distribution of Employment by Category
Inyo and Mono Counties, 1970-1980

Category	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
All Industries (total person-years)	6,800	7,300	7,750	8,175	8,550	8,925	8,850	9,250	10,525	11,225	11,900
					(Percent of Total)						
Agriculture, Forest, Fish	2 6	2.4	1 0	0 9	0.6	0 6	0 8	0 8	1 1	0 9	1 0
Nonagriculture	97 4	97.6	99.0	99 1	99 4	99 4	99 2	99 2	98 9	99 1	99 0
					(Percent of Nonagriculture)						
Mining and Manufacturing	9 9	9 9	9 7	9 2	9 4	9.0	7 9	7 0	7 8	7 6	7 6
Construction	3 3	4 5	6 1	5 8	4 1	3 4	3.9	3 8	6 5	6.2	6 3
Transportation and Public Utilities	7 4	8 9	5 5	5 2	5 3	5.0	5 1	5 4	6 2	5 1	4 8
Wholesale Trade	1 5	1 4	1.6	1 5	1 5	1 7	2 0	1 6	1 8	1 9	2 3
Retail Trade	22 7	21 6	22.6	23 2	22 2	23.2	23 4	24 3	28 1	25.2	25 0
Finance, Insurance and Real Estate	1 8	2 4	2 3	2.1	2 6	2.8	3 1	3 2	3 9	3 3	3 4
Services	17 3	15.8	19 0	19 9	20.5	20.7	18 9	17 8	22 7	20 5	22 9
Federal government	3 7	3 8	4 5	4 6	4.7	4 5	5 1	4.6	4 9	4 4	4 4
State and local government	30.9	30 4	27.7	26 9	28 6	29 1	29 6	31 3	30 8	25 0	22 5

Source· State of California, Employment Development Department, Labor Market Newsletter, May 1982

Table 30
Total Employment, 1970-1980

Year	Total Labor Force[1]	Increase Over Prior Year Number	Increase Over Prior Year Percent	Total Employment	Increase Over Prior Year Number	Increase Over Prior Year Percent	Unemployment Rate (Percent)	State of Calif. (Percent)[2]
1970	8,100	--	--	7,650	--	--	5.4	7.3
1971	9,300	1,200	14.8	8,600	950	12.4	7.5	8.8
1972	10,050	750	8.1	9,300	700	8.1	7.5	7.6
1973	10,100	50	0.5	9,200	-100	-1.1	8.9	7.0
1974	10,700	600	5.6	9,700	500	5.4	9.3	7.3
1975	11,600	900	7.8	10,150	450	4.6	12.5	9.9
1976	11,425	925	8.0	10,125	-25	-0.2	11.4	9.2
1977	11,975	550	4.8	10,750	625	6.2	10.3	8.2
1978	13,300	1,675	14.0	12,500	1,750	16.3	6.0	7.1
1979	14,050	750	5.6	13,175	675	5.4	6.2	6.2
1980	14,700	650	4.6	13,775	600	4.5	6.3	6.8

Source: State of California Employment Development Department, May 1982.

[1] Average for the year.
[2] Department of Finance, California Statistical Abstract 1981.

Table 31
Annual Forest Collections by Resource Class

Fiscal Year	Timber	Grazing	Land Use	Recreation	Power	Minerals	Admission/ User Fees	Total	Percent Timber	Percent Recre-ation*
1975	157,857.01	31,082 52	27,579 26	473,690 84	3,943.84	1,049.00	135,251.29	830,452.92	19.0	73.3
1976	60,379 18	5,584 06	1,463.78	2,534.51	-	1,949.75	185,117.82	257,029.10	23.5	73 0
1977	41,669 22	40,373 44	36,152.39	500,394 00	4,599.52	1,025 00	273,298.45	897,512.02	4 6	86 2
1978	59,514 72	43,448.18	38,058 06	622,117 20	4,486.52	968.00	326,679.62	1,095,272.30	5 4	86 6
1979	1,026,413 14	75,398 25	46,459 23	757,843 65	4,815 52	1,744.15	481,351.87	2,344,025.81	43 8	50.7
1980	1,030,656 26	76,839 35	167,187 53	817,134 04	5,536.28	854 30	449,540.45	2,547,948.41	40 5	49.7
1981	183,444.91	67,693 25	107,539 28	886,964 05	6,381.28	1,676 00	543,100.71	1,796,809.48	10.2	79 6
1982	122,904.65	55,598 08	153,560 73	1,294,682 76	2,017.28	902 25	564,583 38	2,198,249.13	5 6	84.6

Source USDA, Forest Service, Annual Collection Statement, National Forest Fund, 1975-1982

* Percent recreation reflects the sum of the recreation column and the admission/user fees column.

FUTURE TRENDS

Economic growth in the area is expected to continue much as it did in the in the 1970s, increasing overall, but with dips and spurts. As economic growth continues, the resident population and the pressure for more services will increase. Larger communities, such as June Lake and Lone Pine, will be stimulated to consider incorporation. Furthermore, it is expected that an increased local population could stabilize the fluctuating tourist economy of the 1970s. However, unless the different communities actively seek economic diversity by attracting nonrecreation industries to the area, little change is foreseen.

The economic foundation of the area will remain closely tied to increased recreation use and tourism. An increased demand for all Forest resources and services, especially those related to recreation, can be expected. The greatest impacts on Forest management are likely to to found in the area of landownership adjustments and land uses, scenic quality, and the Forest role in the providing a variety of recreational opportunities. The demand for energy development and water yield are also likely to increase with increases in population, both locally and elsewhere in California.

ECONOMICS IN FOREST PLANNING

National Forest land is public land, and its value accrues to the public. The value of Forest land and resources is of two kinds: products with economic value and those that do not lend themselves to economic quantification, such as conservation and enjoyment of our natural heritage. The need to manage Forest lands and resources in a way that will provide the greatest net public benefit, taking into consideration both kinds of values, is both a public issue and a management concern.

Economic efficiency analysis determines the effect of different management strategies on the economic values of Forest resources, using the measure of Present Net Value (PNV). The largest benefit components of PNV are the economic values associated with recreation use (including wildlife and fish-related recreation), water, energy, timber, fuelwood, and grazing. The cost components of PNV include such economic factors as Forest management expenditures, resource losses, and the opportunity cost of producing amenity benefits (such as the value of potential timber and recreation outputs lost to maintain scenic quality). PNV plus non-priced benefits represent net public benefit.

THE SOCIAL ENVIRONMENT

SPHERE OF INFLUENCE

Over the past twenty years, population growth for Inyo and Mono Counties averaged about 630 people per year with net in-migration making up more than 30 percent of total population gains.

Population growth has been closely associated with increases in recreational opportunities and, in particular, increased alpine skiing. This growth rate is expected to subside gradually, leveling out around the year 2020. The median age for the two-county area is 34.5 years, well above the 30.8 year median age for the state. This fact is due in part to the recreational opportunities that attract retiring senior citizens. Personal income in the two counties averages $14,300. The area is more than 90 percent White, 7.3 percent American Indian, and 5.6 percent Hispanic; Black, Asian, and other races together make up less than 2 percent of the population.

Population characteristics, patterns of change, geographic characteristics, and relationship with the Forest are considerably different for Fresno, Tulare, and Madera Counties. These three counties together contain less than 14 percent of Forest lands, they are more densely populated, and they are located primarily on the west side of the Sierra Nevada. The median age for this three-county region is 29 years, and the per-capita average income is well over $15,000. More than 29 percent of the region is Hispanic, and other ethnic groups are well represented. This ethnic pattern is due in part to the agricultural emphasis of the San Joaquin Valley. Agriculture and the west-side timber industry overshadow any social benefits the Inyo National Forest may provide.

The social benefits to Nevada counties derived from the Inyo National Forest are far outweighed by those of the Toiyabe National Forest; the Bureau of Land Management; the U.S. military; and agricultural, mining, and gaming industries in southern Nevada.

Inyo and Mono Counties serve as the primary zone of social influence for the Inyo National Forest. Both counties lie east of the Sierra Nevada crest and together contain 85 percent of Inyo National Forest lands. The lifestyles, quality of life, and social values of the individuals in this area are dependent to varying degrees upon Forest resources and facilities.

Paramount to the quality of life in the Eastern Sierra is the sense of open spaces, rugged terrain, dramatic vistas, scenic quality, clean air and water, and abundant recreational opportunities which the Forest provides. These natural resource attributes are coupled with the social attributes of low population density, slow growth, simple lifestyles, small communities, limited services, and a prevailing feeling of self-reliance and individualism.

As the primary zone of influence, the two-county area is expected to receive direct, identifiable, and measurable benefits and potential impacts from Inyo National Forest management and policies. Inyo and Mono Counties have important ties to the Forest through landownership adjustments, energy production, grazing, fuelwood supplies, fire protection, timber production, and recreational opportunities. The recreation program has particular importance here, as it is has a major influence upon the local lifestyle, community stability, and population growth.

Table 32
Impact Criteria and Data Used to Select
Inyo and Mono Counties as the Primary Zone of Influence

Impact Criteria	California Data					
	State	Inyo	Mono	Tulare	Madera	Fresno
County size (sq. mi.)[1]	158,693	10,097	3,103	4,844	2,147	5,448
Percent of County in National Forest[4]	20.0%	12.1%	58.3%	28.7%	30.2%	36.5%
Percent of County in Inyo N.F.[4]	1.8%	12.1%	39.1%	6.1%	3.8%	*
Percent of Inyo N.F. in County[5]	96.7%	41.1%	42.0%	9.7%	2.6%	1.3%
Population, 1980 (M people)	23,669	17.9	8.6	245.7	63.1	514.6
Persons per square mile[1]	149.1	1.8	2.8	50.7	29.4	94.5
Projected Population for 2000[2] (M people)	28,508	25.8	14.2	338.7	78.3	696.1
Median age	30.8	34.6	34.5	28.3	29.5	28.5
Age distribution, 1980:						
<18 Years of age (%)	27.0%	24.8%	20.8%	32.8%	32.6%	30.7%
18-64 years of age (%)	62.8%	62.0%	73.4%	57.2%	55.8%	60.1%
65 and older (%)	10.2%	13.2%	5.8%	10.0%	11.6%	9.2%
Median per-cap personal income, 1979[3] (dollars)	16,961	14,448	14,000	14,600	15,308	15,645
Racial distribution (%):[5]						
White	77.0%	88.9%	93.2%	73.3%	79.4%	73.7%
Hispanic origin	19.2%	6.1%	4.7%	29.8%	26.8%	29.3%
American Indian	1.0%	9.0%	3.9%	1.0%	1.7%	0.9%
Black	7.7%	*	*	1.4%	3.4%	4.9%
Asian and Pacific Islands	5.5%	*	0.5%	2.1%	0.9%	2.9%
Others	8.8%	1.5%	2.2%	22.2%	18.3%	17.6%

*Less than one-fifth of one percent.

(1) Annual Report of Financial Transactions Concerning Counties of California Fiscal Year 1980-81, State Controller Kenneth Cory.
(2) Population Projections for California counties 1975-2020 with Age/Sex Detail to 2000, Series E-150, California Department of Finance, December 1977.
(3) California Statistical Abstract, 1981, California Department of Finance.
(4) Land Areas of the National Forest System, USDA, Forest Service, September 30, 1980.
(5) Residents of California Classified as "Black," University of California Cooperative Extension, Rural and Community Development, September 1983.

Southern California is a secondary zone of social influence. The residents of San Diego, Los Angeles, Orange, Ventura, Riverside, and San Bernardino Counties make heavy use of the Forest for recreational purposes. The demand of Southern Californians for recreation strongly affects the Forest and social factors in many of the communities in Inyo and Mono Counties. The social impact of Forest activities on Southern California, however, while perhaps important to certain individuals or groups of individuals, is lost in the large size, huge population, and diverse social structure of that area.

SOCIAL GROUPS

Management direction and resource outputs of the Inyo National Forest affect several local social groups, each of which places different demands and values on Forest resources. Six major social groups within the primary zone of influence were identified through literature review, personal interviews, and research of available data sources. These groups are: long-time residents, regional recreationists, seasonal employees, special use permittees, American Indians, and retirees.

Social groups are categories of people based on shared activities, interests and concerns; they are not mutually exclusive, as an individual may belong to more than one group. However, the consequences of Forest management and policies are similar for individuals within a group and somewhat dissimilar between groups. Although not expected to describe all individuals within a given group, the following group characteristics are assumed to apply in general terms for the purpose of evaluating the social impacts of Forest decisions in the Forest planning process.

Long-time Residents

Long-time residents are a diverse group of people identified primarily as those living in the area for ten years or longer. This large group is found working in every sector of the local economy including mining, retail sales, ranching, logging, recreation, and services.

The long-time resident tends to be strongly self-reliant, believes in the importance of hard work, holds to traditional values, and wants to live in a rural area. Because the Forest holds abundant opportunities for mining and prospecting, offers much grazing land, and provides more than five million visitor days of recreation annually, Forest policies potentially affect many of the long-time residents in the primary zone of influence.

Regional Recreationists

Regional recreationists are attracted to the area to enjoy a recreation-oriented lifestyle. This group includes second-home owners and recreationists who enjoy the area for summer vacations and weekend winter skiing. The latter group is particularly important to the economy of the area.

Recreational Visitors

Recreational visitors place great demands on the area and have high expectations for their recreational pursuits. These individuals fuel a major portion of the winter tourist economy and a substantial portion of the summer economy as well. While this social group is composed of many subgroups, its members have some common values. They want to enjoy themselves, and they value the broad range of recreational opportunities and the scenic attractions of the area.

Second-home owners doubled in number between 1970 and 1980. Increased speculation and real estate investments drove housing and rental costs up substantially during that time period. There has been a recent slowing in second-home investments. However, as interest rates decline, as additional ski areas are developed, and as the concern over potential volcanic activity subsides, expansion will probably resume.

Seasonal Employees

Seasonal employees who reside in the area are typically young individuals with a primary goal of pursuing an outdoor lifestyle. Earning a living is often a secondary goal. If they are not able to obtain full-time employment, these people are dependent upon the large seasonal employment market in the area.

There are currently 972 total special use permits on the Inyo National Forest, governing land uses on 34,960 acres of Forest land. special use permits are issued for a variety of purposes, including agricultural, industrial, recreational, research, transportation, and water uses. special use permittees are especially important to communities such as Mammoth and June Lake, both of which have alpine ski areas on Forest land under special use permit. In 1980, the 546 recreation special use permits alone brought over $1.29 million to the federal treasury, 25 percent of which was returned to local county governments. The Forest ranks first in the nation in revenues received from recreation special use permits.

American Indians

Nearly 2,000 Paiute-Shoshone Indians live on the following reservations in Inyo County: Benton Paiute Reservation, Bridgeport Rancheria, Big Pine Reservation, Bishop Reservation, Ft. Independence Reservation, and Lone Pine Reservation. Other Indians live off the reservations in local communities. These individuals face the cultural and racial biases often encountered by minority groups. The housing, educational, cultural, health, and social needs of those Indians on reservations are mostly met on the reservation. The main socio-economic need not adequately provided for is employment.

The Indian way of life, beliefs, and values are interwoven with nature, the environment, and the mountains of the area. Many Indian religious sites, spiritual areas, and traditional food gathering areas are located on National Forest land. This group also relies to varying degrees on the Forest for deer, rabbit, upland game birds, fish, berries, pinyon nuts, other foods and materials, and employment. The Indian typically favors protection of the Forest; however, because of their long history of residence in the area, they

sometimes feel that their rights derived from traditional uses should allow them to be free from certain regulations. Increased pressure on Forest resources will continue to bring about management limitations and potential conflicts with traditional uses of the American Indian.

Retirees

Senior citizens, a segment of the population whose numbers are increasing, are attracted to the area because of its recreational opportunities, relaxed pace of life, and rural environment. Many retirees come to the area from Southern California.

Many retirees moving into the area are affluent and able to afford the high costs of housing and living which typify tourist and resort areas. However, a full 10 percent of the more than 2,700 people over 65 years of age is below the poverty level according to the 1980 census. These people are sensitive to any rises in costs or taxes and look to the Forest for employment.

Because retirees come to the area and stay because of its rural and natural appeal and recreational opportunities, this group supports protection of many of the recreational and visual resources. Many retirees do, however, want vehicle access to the Forest and are only selectively supportive of issues such as wilderness recommendations; they are often concerned about policies such as length-of-stay limitations in developed campgrounds. Retirees enjoy camping, fishing, hunting, visitor services, and nature study activities on the Forest. Because their income is not closely tied to market outputs, they are less likely to have a strong interest in timber or grazing production unless recreational or visual resources are directly affected. One exception, however, may be fuelwood, which is used by the majority of people in the area to defray high energy costs for home heating during the winter months.

THE RESOURCE ENVIRONMENT

AIR QUALITY

Issues, Concerns, and Opportunities

The three areas of primary management concern regarding air quality are dust, regional haze, and smoke. Dust in the area is generated by traffic on unsurfaced roads and the exposure of soil by vegetation manipulation, livestock grazing, mining, groundwater pumping, the dewatering of alkaline lakes, and the abandonment of croplands. Regional haze is an infrequent problem occurring when atmospheric conditions allow haze from the Central Valley to move upward and eastward across Inyo National Forest lands. Smoke can be caused by wildfire, prescribed burning, or heating with wood in local communities.

Current direction calls for the Forest to coordinate with federal, state, and local agencies to minimize the deterioration of air quality and to maintain ambient air quality standards. These ends are achieved by applying Best Available Control Techniques and by reviewing Prevention of Significant

Deterioration permits when appropriate. Activities initiated off-Forest that could affect air quality over the Forest are handled in cooperation with the local agencies responsible for regulating the activity.

Activities on National Forest land that have the potential to affect air quality are smoke management, vegetation management, geothermal development, and mining. Landownership adjustment could have an indirect effect if the new landowner developed the land in such a way that air quality was affected. Smoke and geothermal developments are handled by applying Best Available Control Techniques and Prevention of Significant Deterioration permits. The effects of landownership adjustment, however, are difficult to mitigate. Once land is exchanged into private ownership, the activities on that land fall outside Forest Service control. Such land is typically used for community growth, with a resulting increase in wood heating and vehicle emissions.

Background

The Inyo National Forest lies in the Great Basin and Central Valley airsheds. The Great Basin airshed covers the 1,685,000 acres of Forest land on the east side of the Sierra Nevada crest. Of these lands, 268,430 acres are wilderness managed under Class I (the highest level) air quality protection. The remainder is managed under Class II (moderate) protection. Prevailing air movements are from west to east with occasional strong northerly or southerly winds associated with frontal systems.

The Central Valley airshed covers the 262,650 acres of the Forest that lie on the west side of the Sierra Nevada crest. These lands include portions of the Kern Plateau at the south end of the Forest and the headwaters of the San Joaquin River in the Reds Meadow-Devils Postpile area west of Mammoth Mountain. Ninety percent of Forest lands in the Central Valley airshed are wilderness; 20 percent receive Class I protection. (Only wildernesses designated by the 1964 Wilderness Act receive Class I protection). Prevailing air movements are driven by the jet stream from west to east.

Air quality is managed under the regulations of the Clean Air Act in coordination with the State Air Resources Board and local Air Pollution Control District (APCD). Air quality on the Forest meets State air basin objectives more than 99 percent of the time. Exceptions are localized, temporary, and (for the most part) outside Forest Service control.

Monitoring stations operated by the APCD indicate airborne particulate levels that exceed basin objectives on very windy days from dust and on early mornings in winter from wood heating coupled with atmospheric inversions. Air surrounding the Mammoth Lakes community exceeded acceptable levels on more than 30 days in 1984.

Dust is generated by any activity that exposes the soil to air movements. There are several primary sources of dust on and near the Inyo National Forest. The most noteworthy of these are associated with dewatered areas.

Water diversions and exports from the valleys have resulted in the partial dewatering of Owens Lake and Mono Lake and the abandonment of farmlands. These exposed lakebeds and farmlands lie in the Owens Valley and Mono Basin

between mountain ranges encompassed by National Forest land. Wind-carried dust from exposed lands in the valley affect air quality over the Forest. Visibility has been affected to the extent that Department of Defense test flights over the Owens Valley are hampered or shut down six to twelve times each year. The County, the APCD, the City of Los Angeles, the Department of Defense, and the Forest Service are making coordinated efforts to resolve this concern.

Smoke management is not a major concern on the Forest. Large wildfires of long duration are uncommon, air dispersion is generally excellent during the fire season, and prescribed burning occurs under the guidelines of BACTs, minimizing the effect on air quality. Smoke management plans will, however, be developed in conjunction with the Fire Management Action Plan scheduled for development over the next ten years. Smoke management will also be an element of prescribed fire planning and individual prescribed fire environmental assessments.

Mining, livestock grazing, and travel on unsurfaced roads have left certain areas denuded or sparsely vegetated, allowing wind erosion to occur and air quality to suffer. These problems are, however, localized. The Forest has the opportunity to resolve these concerns by road watering, alternate salt block placement, better livestock dispersion, mining site rehabilitation, and irrigation.

Community growth within the Forest boundary (especially at Mammoth and June Lake) has the potential to affect air quality. Vehicle emissions and smoke from wood heating are primary air quality factors. Although the Forest Service has little control over activities on private land, it indirectly affects community growth by making land available for exchange into the private sector and by allowing ski areas to expand, increasing recreational use of the area and supporting a larger resident community.

Another factor that could influence air quality, both through direct emissions and community growth, is geothermal development. Steam plumes, sulfur dioxide and hydrogen sulfide, and other chemical contaminants could be emitted, depending on the type of development and the mitigation technology available. Several acid rain and deposition studies are currently being conducted in or near Class I areas on the Forest. Study results will identify the appropriate Air Quality Related Values (AQRVs) to monitor for each area and the extent of impacts, if any, these areas have received.

CULTURAL RESOURCES

Issues, Concerns, and Opportunities

Public issues relating to cultural resources focus on the need to inventory those resources and protect them from damage and destruction. A second issue is reflected in the high level of public interest in interpretive activities dealing with cultural resource subjects. A third issue of increasing importance is the desire of local American Indians to use Forest lands for traditional religious and cultural practices. As these activities are not necessarily associated with visible cultural remains, close coordination with Indian groups is needed when implementing Forest activities.

Management concerns also address the need to inventory and ensure the protection of cultural resources. In addition, management is concerned that cultural resource management objectives (especially compliance with legal requirements for undertakings which could affect cultural resources) be effectively integrated with the management of other Forest resources and activities. Management also has the responsibility to ensure that there are no barriers to traditional American Indian religious and cultural land uses. The Forest has the opportunity through the use of its own facilities and personnel and through interfacing with local institutions (such as schools and museums) to interpret our cultural heritage for the public.

Background

Current research indicates that Eastern California and Western Nevada have been occupied for at least the past 10,000 years. The most recent prehistoric residents and users of the area (including what is now National Forest System land) include the Northern Paiute, Shoshone, Miwok, Washo, Kawaiisu, Tubatulabal, Koso, and Monache. Members of each of these groups still live in various parts of the western Great Basin and the west slope of the Sierra Nevada. Euro-American groups entered the region in the early nineteenth century and have used the Forest primarily for timber harvest, mining, ranching, and recreation.

As of October 1, 1983, approximately 97,000 acres (5 percent) of the Forest had been inventoried for cultural resources. Ninety percent of the total inventory (in terms of gross acreage) has been conducted in preparation for timber sales and other Forest-initiated or authorized activities that could affect cultural values. The existing data base is, therefore, skewed by having been collected only on a project basis and primarily in the Jeffrey pine forest on the northern one-third of the Forest. More intensive inventory is needed on the remaining 95 percent (approximately 1.9 million acres) of the Forest.

Approximately 1,700 cultural properties have been recorded; 1,500 dating to the prehistoric period and 200 to the historic period. Based on extrapolation from quantitatively-derived predictive models and raw site data, it is estimated that the Forest includes more than 35,000 prehistoric and historic cultural properties. In addition, the density of sites per acre on the Inyo is substantially higher than on many other Forests in the Region. The Inyo averages 1 site per 59 acres, in contrast with 1 per 105 acres and 1 per 245 on the Angeles and Tahoe National Forests respectively. Approximately 12,000 acres per year are currently being inventoried. Roughly 95 percent of the total was in direct support of the timber management program. The rate of timber-oriented inventory is expected to decline within the next ten years; however, all harvestable areas will have been examined.

Copies of all site and survey documentation are currently supplied to the appropriate Information Centers of the California or Nevada Archaeological Inventories as part of project consultation.

After project-initiated inventories are completed, compliance requirements for project implementation are met primarily by impact avoidance (protection) as agreed to by the appropriate California or Nevada State Historic Preservation Officer. In the case of timber management activities, this

approach relies primarily on the use of special over-the-snow logging techniques. These techniques have been developed and tested over the past several years in consultation with the California Office of Historic Preservation. The effect of stipulating over-the-snow logging is to eliminate the need to reduce the land base available for timber harvest in order to protect cultural values. Consultation with the State Historic Preservation Officer, Keeper of the National Register, and the Advisory Council on Historic Preservation are completed in accordance with the requirements of 36 CFR 800.

Site-by-site and project-by-project evaluation and compliance consultation are extremely labor-intensive and geared primarily toward short-term expediency. For this reason, the Forest has initiated, through the efforts of interested researchers and volunteers, development of a number of efficient type-of-site and type-of-project evaluation studies and compliance-related Memoranda of Agreement. These include over-the-snow logging, as noted above and characterization of primary (quarry) and secondary obsidian stoneworking camps (directed primarily to meeting compliance requirements relating to timber management activities where over-the-snow logging stipulations are not applicable).

As of October 1, 1983, National Register nominations and/or eligibility determinations for 45 properties had been made (using the process and criteria set forth in 36 CFR 60) and submitted to the State Historic Preservation Officer and Keeper of the National Register. Of these properties, fourteen have been determined eligible and/or actually nominated to the Register. These sites are listed below by State trinomial or by name.

Mono County: CA-MNO-11, -34, -446, -471 H, -529, -542, -584, -823,-1644, -1645;
Inyo County: CA-INY-1308, -2285, Lon Chaney's Cabin, Tuttle Creek Ashram.

The National Register properties need to be maintained in such a way as to preserve their integrity. This can be done through a program of "arrested decay" to prevent further natural deterioration. These properties also provide good opportunities for cultural resource interpretation. Another element in protection is prevention of vandalism. This can be approached through effective monitoring and law enforcement measures and through public education. Public education addressing the need to protect the cultural environment can be done in conjunction with local schools and historical societies and through Forest visitor facilities. Protection through education would thus dovetail with cultural resource interpretation. In addition to the facilities and institutions listed above, there are many opportunities for on-site interpretive displays.

A Prehistoric Overview was prepared for the Forest in 1978. Data collection and analysis were done from a theoretical orientation of human cultural ecology. The ethnography of the area is touched on in the Overview. There is no Historical Overview at this time.

The Prehistoric Overview proposes a hierarchical research design with three stages. First, there is a need to develop settlement/subsistence models. In order to do this, additional data are needed from the following areas: the Coso region, southern and northern Owens Valley, Glass Mountain Ridge, and

the Mono Basin. This data needs to be generated through a probabilistic sampling strategy, not derived solely from project surveys. In the second stage, the models need to be tested on a type-of-site basis. Thirdly, long-range research needs to be carried out on problems unique to the Inyo-Mono region, such as trans-Sierran exchange, food production and irrigation in the Owens Valley, and the development of complex social organization. Implicit in all three stages is the need to refine existing regional chronologies.

A thorough Ethnographic Overview, which includes the current concerns of the American Indian community, is needed. An Historical Overview from which to develop research questions and to provide a context in which to evaluate significance is also needed.

DIVERSITY

Issues, Concerns, and Opportunities

The public sees diversity as an issue on all National Forest System lands and has asked that diversity be defined in terms of ecotypes within the entire ecosystem rather than in more limited terms. In reality, diversity is much more than the juxtaposition and types of vegetation communities. This is merely one aspect. Diversity is a combination of physical and biological phenomena that comprise habitats and the species that occupy these habitats: plant species, seral stages, crown closure, vegetation structure, snags, down logs, physiographic features and a myriad of other parameters.

Diversity is addressed using requirements developed for: vegetation patterns; down logs; snags; threatened, endangered and sensitive species; species considered ecological indicators; species of special interest; harvest species; aquatic/riparian ecosystems; sensitive plants; and several other criteria. The concept of diversity was developed to ensure that the viability of all plant and animal species be maintained.

In this section the emphasis is on diversity of plant communities. The other subjects are discussed elsewhere.

Management is concerned with managing natural forces (such as insects, disease, and fire) to maintain diversity in the long term while minimizing the disruptive influences of those forces in the short term. Management is also concerned with meeting the demand for land uses, such as hydroelectric and geothermal developments, road and utility corridors, campgrounds, timber management, and mineral extraction, that threaten to reduce ecological diversity.

Concerns with diversity focus primarily on riparian areas, commercial timber areas, and shrub types. In those areas, both the potential for and threats to diversity are greatest. Most Forest management activities take place in and affect the amount and condition of riparian areas. Commercial timber management reduces the number and size of old growth stands in particular, and species and seral stage diversity in general. Lack of shrub rejuvenation results in decadent shrub communities.

The best opportunities on the Inyo to increase vegetative diversity without conflicting with other resources are in the shrub and pinyon-juniper vegetation types. There is enough acreage in those types to develop a desired mix of species and seral stages.

For the most part, the specific habitat elements mentioned below can easily be maintained on the Forest. Although there are threats to some of these elements, management should be able to prevent them from becoming critical. The exception is dead and down woody vegetation, as that is the material most often taken for public-use fuelwood.

There are no opportunities to manage chaparral, as that vegetation type occurs only as scattered inclusions in other vegetation types at the southwest end of the Kern Plateau and totals an estimated 200 to 400 acres on the Forest.

Background

During the last 150 years, the location and species composition of ecosystems on the Forest have changed little, although the seral stages, relative extent, and condition of those ecosystems have changed considerably. Diversity appears to be decreasing slowly Forest-wide.

Decadence: Plant communities move naturally through a series of successional (or seral) stages toward a climax condition, or final seral stage. This process is interrupted from time to time by natural forces such as animals, insects, diseases, extreme weather conditions, or fire. When natural vegetation is burned, the plant community is often returned to an earlier seral stage, or rejuvenated. When ecosystems progress toward later seral stages, woody vegetation such as trees and shrubs become more dominant, and grasses and other herbaceous (non-woody) vegetation are displaced. In addition, as woody vegetation itself ages, its growth slows considerably, and the stand is said to become decadent.

Natural fires played an important role in the ecosystem before European settlement of the western United States. Fire maintained seral stage diversity by rejuvenation, perpetuating the types and patterns of vegetation needed for wildlife food and cover. In most coniferous forests, fires created openings and thinned the forest, allowing for the growth of herbs and shrubs. In semiarid climates, where fires were more frequent, shrub and conifer growth was inhibited and limited to rocky outcrops and other sites with topographic features limiting the accumulation of fuels and spread of fires.

With the advent of well organized fire suppression activities in the 1930s, vegetation advanced toward older seral stages without the natural rejuvenating effect of periodic fires. Conifers and other woody plants displaced the grasses and other herbaceous vegetation characteristic of earlier seral stages, and vegetative diversity declined.

Riparian Areas: Riparian areas, including wet meadows, represent only two percent of total Inyo National Forest lands. Riparian diversity on the Forest has declined due to heavy recreation use, especially developed camping in riparian areas; the dewatering of approximately fifty miles of stream for

irrigation, domestic use, and hydroelectric development; and the impacts of past grazing practices on 26,000 acres of wet meadow. In areas where erosion has lowered the water table, wet meadows have dried out and woody vegetation is in the process of replacing grasses and other herbaceous types. Much of the wet meadow on the Forest is inside the Golden Trout Wilderness. As the use of prescribed fire specifically for the purpose of enhancing vegetative diversity is not an option in wilderness, and as prescribed fire for the purpose of maintaining wilderness values has not been identified as a need, those meadows will continue to progress toward older seral stages dominated by woody vegetation. Eventually the wet meadows themselves will be replaced by dryland shrub and forest communities.

Forested Lands: Coniferous forests tentatively suitable for commercial harvest represent less than six percent of the total Forest land base. Diversity in the coniferous forest is affected primarily by timber management. Timber stands managed for optimum wood production fall into the early-to-middle seral stages. Consequently, the forest acreage in older seral stages (old growth) declines as more forested acreage is brought under management. Because timber in wilderness cannot be managed either for wood production or for vegetative diversity, and since fires in wilderness are suppressed, forested lands in wilderness are increasingly dominated by older seral stages.

Shrub and Pinyon-Juniper Types: Bitterbrush, big sage, and pinyon-juniper types cover 800,884 acres, or 42 percent of the Forest. Bitterbrush and sagebrush stands on the Forest are estimated to average forty to sixty years of age. Bitterbrush becomes decadent at about seventy years of age. Sagebrush may last longer, but loses productivity at about thirty years of age.

Diversity in shrub communities has been reduced primarily by fire management and grazing. Under natural conditions, shrub ecotypes mature until they reach the climax or subclimax stage. Wildfires periodically reduce the ecotype to an earlier seral stage. The mosaic of fire-driven seral-stage diversity within the ecotype, in turn, fosters diversity of plant species. Improved fire prevention and suppression have apparently interrupted this natural process.

Fire suppression and livestock grazing have contributed to the dominant shrub stands in these vegetative communities. Both of these practices favor shrub invasion and reduce the herbaceous component within these stands. In addition, the xeric climatic conditions and precipitation patterns favor shrub encroachment. In less than 150 years these vegetative communities went from predominantly shrub-steppe type with well-developed herbaceous understories to predominantly shrub-dominated stands with little or no understory.

Vegetation management to enhance wildlife or livestock forage production on shrub lands on the Inyo have not historically been conducted on the scale necessary to counteract increasing decadence. The major reason for this is the inability to predict results of habitat improvement. In favorable climatic years, desirable responses can be attained by removing the shrub overstory. However, in unfavorable climatic years, treated areas can be invaded by undesirable shrub species and annual exotics. As a result, shrub

communities show a continuing trend toward older, less productive seral stages. On the Inyo, an estimated 6,800 acres of bitterbrush and big sagebrush would have to be rejuvenated annually in order to maintain a maximum of 20 percent of shrub lands in the oldest seral stage.

Grazing, a major activity on the Forest, has probably prolonged diversity for some ecotypes by extending the duration of given seral stages. For example, bitterbrush is thought to be more vigorous and lasting if moderately grazed than if not grazed at all. Grazing management has also probably increased diversity outside of riparian areas by developing water sources that are available for water-dependent plant growth, as well as for livestock.

Pinyon-juniper communities have increased substantially in the western U.S., including the Inyo, as a result of fire suppression efforts. These species are aggressive invaders in the absence of fire. Typical pinyon-juniper stands have brush understories with a poorly-developed herbaceous component.

Specific Habitat Elements: Managing the full range of seral stages in major plant communities would contribute greatly to maintaining overall ecological diversity. However, many plant and animal species depend on specific habitat elements, as well as (or instead of) general vegetation types. These elements include: standing dead trees (snags), dead and down logs, multi-storied forest canopies, rock outcrops, cliffs, caves, water bodies, and isolated ecotypes, such as aspen groves.

Forest Service policy and direction for the management of timber, range, fish, wildlife, riparian areas, water quality, energy, minerals, fire, recreation, and visual quality all have an effect on vegetative diversity. The major driving force behind the maintenance of diversity is the direction to maintain viable populations of all vertebrate species native to the Forest and to establish management indicator species for all vegetation types, seral stages, and special habitat elements affected by Forest Service management activities.

ENERGY: GEOTHERMAL (see Minerals: Leasable)

ENERGY: HYDROELECTRIC

Issues, Concerns, and Opportunities

A number of public issues and management concerns have been raised in relation to the development of new hydroelectric facilities in Inyo and Mono Counties. These issues and concerns address potential conflicts between diverting water from streams for power generation and leaving water in place to maintain instream values and water-dependent resources. The generation of additional energy could reduce the amount and condition of aquatic and riparian wildlife habitats, scenic quality, and water-based recreation.

Hydroelectric licenses are issued by the Federal Energy Regulatory Commission (FERC), the lead agency in preparing an environmental document for each project. The Forest Service reviews FERC applications and proposes conditions of development (related to the land and resources potentially

affected) to be included as stipulations of the FERC license. Once a license is issued, the Forest Service issues a special-use permit for construction and operation of the project facilities. Project fees are paid to FERC, except for the few projects exempted by FERC.

The Forest has the opportunity in the Forest planning process to analyze the potential environmental impacts of water diversion on other resources and to set specific conditions that must be met when hydroelectric projects are developed. Such direction would improve the consistency of treatment from one application to another and facilitate the evaluation of cumulative impacts.

Background

Small hydroelectric power projects are defined as those that generate five megawatts or less. Small hydroelectric potential on the Inyo is high because many streams on the east slope of the Sierra Nevada and west slope of the White Mountains are perennial and drop rapidly in elevation. There is little existing development along the streams, and most of the valuable lands are available because they are publicly owned. Southern California, which is presently served by major fossil fuel plants with high operating costs, represents an attractive market for electricity from small hydroelectric projects.

Six hydroelectric projects are currently operating, and applications have been submitted for fifteen additional projects on fifteen streams. Existing and proposed small hydroelectric projects on Forest lands are run-of-the-river types, consisting of a small diversion impoundment, penstock, and power plant. Transmission lines are required to feed the generated power into the appropriate public utility system. It is necessary to divert most of the water in an affected stream in order to maximize energy produced.

Major hydroelectric power projects generate more than five megawatts of electricity. The following major hydroelectric facilities on the Inyo generate a total of 52,000 megawatts:

- Southern California Edison #1388 - Lee Vining Creek
- Southern California Edison #1389 - Rush Creek
- Southern California Edison #1390 - Lundy Creek
- Southern California Edison #1394 - Bishop Creek.

The demand for hydroelectric power has increased in recent years as a result of the national desire for energy self-sufficiency and the search for an inexpensive, nonpolluting energy source. There is, however, some question whether the small hydroelectric concept will prove cost-effective when all resources are considered.

ENERGY: SOLAR

Issues, Concerns, and Opportunities

The public has raised the issue of exploring solar energy opportunities on the Forest. There are no management concerns with this subject, as only a few small solar installations have been proposed.

Background

A few solar voltaic units have been installed to power generators at electronic sites; all of these are low-power installations.

ENERGY: WIND

Issues, Concerns, and Opportunities

The public has raised the issue of exploring wind energy opportunities on the Forest. There are several management concerns with the wind farm concept. Wind farms conflict with Visual Quality Objectives if they are visible from heavily used areas. It is difficult to meet Visual Quality Objectives due to scale, density, number, supporting road networks, movement and blade colors that contrast with the surrounding environment.

Background

The suitability of Inyo National Forest land for wind power is not well known. However, wind patterns on the Forest are not now thought to be advantageous for energy generation. A wind farm application has, nevertheless, been received for a site in the Sherwin Grade area, and industry representatives estimate that the Forest could have the potential for as many as two additional sites, probably at high elevations in the White or Inyo Mountains.

The demand for energy is well established and expected to increase, but the demand for wind as an energy source is just beginning to emerge. It is difficult to predict a future trend at this time.

FACILITIES: ADMINISTRATIVE SITES

Issues, Concerns, and Opportunities

There are no major public issues regarding Forest administrative sites. The primary management concerns are to eliminate a backlog of building and utility rehabilitation and maintenance in order to meet health and safety codes and to provide a visitor center for the newly designated Mono Basin National Forest Scenic Area. Management is also concerned with the need for the Supervisor's Office to move out of leased space into government-owned space.

Background

The Inyo National Forest has eighty-six buildings at seven administrative locations. Of these, all but one are federally owned. Fifty of the buildings are in good condition, twenty-three are in fair condition, and thirteen are in poor condition. Utility maintenance and rehabilitation work are needed on many of the buildings in fair or poor condition.

Except for the Scenic Area visitor center, present administrative sites are adequate for current and projected workloads. There is no foreseeable need for major expansion or addition of facilities.

FACILITIES: AIRPORTS AND HELIPORTS

Issues, Concerns, and Opportunities

There are no major planning issues, concerns, or opportunities related to airports and heliports.

Background

Five airstrips are located on Inyo National Forest land. One heliport located on county land is operated by the Forest Service; four other facilities located in the immediate area are available for Forest Service use. The Forest Service uses airstrips and heliports for transportation related to fire protection and general administration. Airstrips on Forest land are operated under permit and are used by private parties, the public, or the military.

FACILITIES: BORROW SITES (SEE MINERALS: MINERAL MATERIALS)

FACILITIES: DAMS

Issues, Concerns, and Opportunities

There are no major issues, concerns, or opportunities related to dams on the Forest. Issues and concerns related to hydroelectric development are addressed under the heading of energy.

Background

There are eighteen dams on Inyo National Forest land. Of these, three are owned by the Forest Service, four by the City of Los Angeles, and eleven by Southern California Edison. All of these dams provide water storage and regulation; fifteen are also used for hydroelectric power; and eleven include major impoundments with recreational use.

The dams owned by the Forest Service are in good condition and receive regular maintenance by the Forest Service. Present management direction is adequate for the management of these dams. The dams owned by Edison and the Los Angeles Department of Water and Power (DWP) are in very good condition

and do not pose any administrative or health and safety problems for the Forest Service.

The demand for water storage and regulation, hydroelectric development, and water-based recreation will continue to grow. However, no additional major dam sites have been identified on the Forest.

FACILITIES: FOREST HIGHWAYS

Issues, Concerns, and Opportunities

There are no planning issues, concerns, or opportunities associated with Forest Highways.

Background

All Forest Highways will comply with Section 202 of the Surface Transportation Assistance Act. Forest Highways are listed in the Analysis of the Management Situation. All Forest Highways are two-lane paved county roads varying in condition from new to extremely poor.

FACILITIES: MASS TRANSIT

Issues, Concerns, and Opportunities

There is a management concern that mass transit be encouraged on the Forest. The Forest has an opportunity to establish guidelines for use in evaluating potential locations for mass transportation facilities.

Background

The Inyo National Forest considers mass transit an option in situations where road capacity is limited or where concentrated vehicle use threatens to damage resources.

In 1980, the Forest introduced a mandatory summer shuttle bus system between Mammoth Mountain Ski Area and the Reds Meadow-Devils Postpile area. Both traffic safety and resource protection were matters of concern. In addition to the mandatory bus service, several private bus operators serve various points on the Forest. Bus service to Mammoth Mountain Ski Area from the Mammoth Lakes community is available during the ski season. Smaller scale shuttle services have developed to serve hikers in several trailhead areas along the Eastern Sierra.

The Forest requires the use of the Reds Meadow-Devils Postpile shuttle bus and encourages mass transit to Mammoth Mountain Ski Area by approving ski area expansion plans that do not include major growth of private vehicle parking facilities at the ski area itself. Smaller, hiker-oriented shuttle services are not specifically encouraged by Forest Service management; however, the limited amount of overnight parking at many trailheads tends to foster their use.

FACILITIES: RIGHTS-OF-WAY (SEE LANDS: RIGHTS-OF-WAY)

FACILITIES: ROADS AND BRIDGES

Issues, Concerns, and Opportunities

The public has raised a variety of issues related to Forest Service roads; in most cases, both sides of an issue were raised. Some parties want to see increased access to the Forest for recreational activities; others want to see less access in order to reduce environmental damage. A few issues were less controversial, such as constructing roads only where environmental damage can be minimized.

Management is concerned that agreements between the Forest and Inyo and Mono Counties need to be examined regularly to establish responsibility for maintenance of roads that come under both jurisdictions.

Background

Roads on the Inyo National Forest are used primarily for administration, fire protection, public recreation access, and commercial timber transport. The Forest has 32 miles of arterial roads, 201 miles of collector roads, and 741 miles of local roads.

Arterial roads come under state or county jurisdiction. The arterial road system is adequate for present use and for increases projected for the next fifty years. Collector roads come under county or Forest Service jurisdiction. Those roads also meet current and most projected needs.

Approximately six miles of timber-related collector road construction would be needed if all unroaded suitable timber lands were scheduled for harvest. Six miles of road would be needed to access the San Joaquin Ridge and northern Glass Mountains areas on the north end of the Forest. Due to the extensive existing network of primitive roads on timbered parts of the Forest, and due to the Forest's practice of winter logging with over-the-snow skidding, no new local roads are projected.

If developed recreation site capacity increased, associated roads would also increase. Full development of potential sites would require approximately 90 miles of new road for developed site access.

Access routes for approved geothermal activities in Lease Blocks I and II would call for an estimated twelve miles of new roads; those roads would be constructed and maintained by the developer, and would probably not be open for public use. Mining roads are developed by miners in response to specific opportunities; the number and location of those roads is difficult to predict.

Forest Service roads are assigned maintenance levels based on Road Management Objectives and amount of use, and are reconstructed on a programmed basis. Current construction and reconstruction amounts to about twenty miles per year; with full timber and recreation development, construction and reconstruction would amount to approximately 20.9 miles per year.

There are approximately 300 miles of uninventoried roads on the Forest. There is a need to inventory those roads.

FACILITIES: TRAILS

Issues, Concerns, and Opportunities

The public has raised a number of issues relative to trails. In most cases, these issues express a desire for more trails and/or better maintenance of existing trails. The public has expressed a specific interest in more trails for nordic skiing, hiking, OHVs, and the handicapped. An additional issue is the design, construction, and location of trails to provide the desired recreational experience while minimizing resource damage.

Management is concerned with the development of new trails to enhance the recreational experience, as well as trail maintenance and the relocation of trails currently affecting ecologically sensitive areas.

The need to develop new trails is greatest in concentrated recreation areas and nordic ski areas.

Background

The Inyo National Forest trail system, encompassing 1,236 miles of trail, provides hiker and equestrian access into the Hoover, Ansel Adams, John Muir, Golden Trout, and South Sierra Wildernesses; the Yosemite, Kings Canyon, and Sequoia National Park backcountry areas; and large unroaded parts of the White Mountains and the southern Sierra Nevada near Monache Meadows.

The renowned John Muir Trail and 53 miles of the Pacific Crest National Scenic Trail traverse Forest lands. The Discovery Trail (1.0 miles) and Whitney Portal Trail (4.1 miles) are National Recreation Trails.

Approximately 705 miles of trails are located within wilderness, including wilderness designated by the California Wilderness Act of 1984. Thirteen miles of potential trail within existing wilderness have been identified. In addition, Further Planning Areas on the Forest have considerable potential for new trail construction and for upgrading and maintaining existing user-generated trails if any is recommended for wilderness.

Concentrated recreation areas are currently served by a limited number of constructed trails and many additional miles of "fishermen" trails. There is potential for at least 180 miles of additional trail in those areas to enhance recreational opportunities, disperse use, and protect resources. Concentrated recreation areas include opportunities for hiker/equestrian, angler, handicapped, bicycle, and interpretive trails.

There are also opportunities for approximately twenty miles of additional non-motorized summer use trails on open National Forest lands (outside of wilderness and concentrated recreation areas).

Off-highway vehicle routes trails in the Monache Meadows, Coyote Plateau, and Pizona-Excelsior areas and selected portions of the Inyo and White Mountain

ranges are popular with recreationists. There is potential to develop additional vehicle routes or to reconstruct and maintain existing user-generated routes.

Nordic ski trails and groomed track trails are generally maintained and operated by private parties under special use permit. Some trails are marked by the Forest Service, but little track is groomed. Marked nordic trails on the Inyo currently total about 175 miles. There is potential for as many as 400 additional miles.

The non-wilderness trail system consists primarily of stock access routes or off-highway vehicle routes that have evolved from grazing access, mining access, or intense recreational use over the years. Most have not been designed or located to protect sensitive resources. New trails continue to be created by illegal vehicle use off established routes. This process is especially common in concentrated recreation areas.

Trail planning and operation for special interests such as OHV, nordic ski, angler, equestrian, or bicycle use will be based on the Forest Plan and subsequent recreation composite plans. Management of the trail system is guided by the Forest transportation management program.

The Forest currently constructs or reconstructs approximately ten miles of trails per year. In order to meet public demand, the total could easily reach forty to seventy miles of annual construction and reconstruction.

FISH

Issues, Concerns, and Opportunities

Major public issues related to fish habitat on the Forest are: protecting stream habitat from grazing, recreation development, and water diversions; assuring the viability of all resident species; meeting the increasing demand for fishing; and classifying appropriate streams and lakes as wild trout waters.

The primary management concerns on the Forest are improving habitat quality for resident stream trout and assessing and mitigating the impact of hydroelectric development on fish.

Another concern is the management of habitat for the recovery of threatened and endangered fishes. Lahontan and Paiute cutthroat trout, although not native to the Forest, rely on Forest habitats for species recovery. A recovery plan for the Lahontan has been developed. The Owens tui chub was classified as endangered in 1985. Habitat for that species is not currently a Forest management concern. Although known critical tui chub habitat lies within the Forest boundary, it is on private land. Recovery plans for the Owens tui chub and Paiute cutthroat trout need to be written.

Timber management activities are not a fish habitat concern on the Inyo, as most timber is harvested over the snow (minimizing the risk of sedimentation), and few fish-bearing streams are located in suitable timber.

The Forest has the opportunity to establish direction that would assure viable populations of all fish species on the Forest. Implementation of Best Management Practices for water quality, retention of instream flow, mitigation of other resource management activities, and restoration of damaged habitat would ensure viability for most fish species. More direct procedures are necessary for threatened species if they are to meet recovery levels.

The Forest and the California Department of Fish and Game should establish a standard for viable populations. The tolerable level of depletion set by the Forest must at least meet the standard for population viability, but can exceed that standard if desired.

Background

The Forest has about 1,100 miles of streams and several hundred lakes. Streams are typically less than twenty feet wide, and most lakes are smaller than 100 acres. More than 90 percent of resident trout on the Forest reside in lakes; the remainder are stream trout. Most trout-bearing waters are located in wilderness and other roadless areas in the Sierra Nevada.

Fish habitat quality in most streams is rated medium or high. Those streams with medium or low ratings either lack fish habitat due to inherent physical qualities such as steep gradients, or they have been damaged by livestock, excessive recreation use, and/or water diversion. Stream habitat quality is a management concern both because of past and potential damage by human activities and because there are opportunities to restore or enhance stream habitat. Hot Creek and Cottonwood Creek are the only state-classified wild trout fisheries on the Forest. Table 33 displays the miles of trout-bearing stream on the Forest in terms of the resident trout they support.

Habitat quality in most lakes and reservoirs is considered high. Although detailed studies of lake habitat have not been made, most lakes are in wilderness and are subject to only minimal impacts from human activities.

Few streams and lakes on the Forest supported fish prior to the arrival of Europeans. Only six fish species are native to the area: Owens tui chub, Owens pupfish, Owens dace, Owens sucker, western sucker, rainbow trout (Kern River only), and golden trout. The golden trout, Owens sucker, and western sucker are limited in distribution, but common where found. The Owens tui chub is an endangered species. Known critical habitat occurs on private land within the Forest boundary. It is also possible that Owens tui chub resides in Silver Lake on the June Lake Loop. The University of Michigan is studying fish in that lake to determine whether they represent a pure strain of Owens tui chub. The Owens pupfish (classified endangered) and Owens dace occur on neighboring BLM and/or City of Los Angeles lands, but have not yet been found within the Forest boundary. The golden trout is a state-designated special interest species.

Introduced species include the brown, brook, rainbow (outside the Kern River), Paiute cutthroat, Lahontan cutthroat, and Colorado cutthroat trout. Reproducing brown, brook, and rainbow trout populations are common. Colorado cutthroat trout is limited to a few streams in wilderness on the Forest. Paiute and Lahontan cutthroat trout are federally listed as threatened.

Warmwater pan fish such as bluegills, black bass, and catfish are found in waters near (but not generally within) the Forest and are not subject to Forest management activities. There are no anadromous fisheries on the Forest.

Management Indicator Species (MIS) include Lahontan and Paiute cutthroat trout, and rainbow, brook, brown, and golden trout. No single species was selected as a MIS for all trout habitat because only a few trout streams have reproducing populations of more than one species. Where there are more than one species in a given stream, the most sensitive of those species is considered the MIS.

The greatest impacts on fish habitat have historically come from livestock grazing and water diversion for domestic use and energy production. Present conditions can, in most cases, be traced to events of those types that occurred fifty or more years ago.

Livestock grazing began in the area about 130 years ago, and the number of animals (over 100,000 sheep and cattle) remained high until the 1930s. The heavy grazing denuded meadows and streambanks, causing sedimentation of streams and corresponding damage to fish habitat quality. Livestock numbers have been reduced dramatically. Approximately 23,000 sheep and 12,000 cattle now graze Forest lands. Although livestock grazing is better managed now than in earlier times, cattle still tend to overutilize some riparian areas and to damage associated fish habitat. Improved management should be able to mitigate that damage without overall reduction in grazing use.

Water diversion for domestic use, irrigation, and energy generation eliminates fish habitat by removing water from streams and piping it to collection sites. Diversion projects in Inyo and Mono Counties began in earnest around the turn of the century. Virtually every stream that flows into the Mono Basin and the Owens Valley is controlled either by the Los Angeles Department of Water and Power or the Southern California Edison Company. Many of the diversion structures lie at least partially within the Forest boundary.

An estimated 88 percent (466 miles) of the total stream mileage (529 miles) in the Owens River and Mono Basin watersheds have been affected. Twenty percent (106 miles) have been totally dewatered. About 140 of the affected miles, including fifty of the totally dewatered miles, lie within the National Forest boundary.

It was once thought that all economically feasible hydroelectric sites on the Forest had been developed. However, recent legislation and the international oil situation have encouraged the reconsideration of development on stream reaches formerly thought uneconomical. Virtually every perennial stream on the Forest has at least one application for hydroelectric development. Some applications propose diversion of 90 percent of the available water. The number of permits that will finally be granted and hydroelectric projects built is unknown. The resulting impact on fisheries is, therefore, difficult to predict. That impact, whatever its magnitude, is of considerable concern to the Eastern Sierra tourist industry.

Other management activities, such as road construction and recreational developments, can adversely impact fish habitat. In many cases, the direct impacts of roadbuilding can be mitigated. However, as access for fishing is improved, resident fish populations drop as more resident trout are taken and as habitat quality declines with increasing use.

In 1982 the Forest recorded 340,000 fishing Wildlife and Fish User Days (WFUDs), and the California Department of Fish and Game stocked more than 2,500,000 trout in Forest waters. Most fish caught by anglers on the Forest are hatchery stock. The Forest ranks second in coldwater fishing among National Forests nationwide (first in California), and sixth in total angling recreation (second in California). Fishing ranks third behind camping and skiing in total number of visitor days on the Forest.

The value of sport fisheries to the local economy is considerable. A fishing WFUD has an assigned value of $12.00. Overall fishing demand in 1982 was 340,000 WFUDs valued at $4,080,000. The ability of the Forest to produce current levels of fishing depends on maintaining good fish habitat, maintaining campgrounds, and the maintenance by CDFG of the current stocking program.

The demand for fishing is expected to increase in proportion to overall increases in developed and dispersed recreation, approximately 32 percent over the next fifty years. As the Forest does not have the capability to increase resident trout habitat capacity 32 percent, the amount of fishing provided by the Forest cannot meet that demand.

Of the 1,100 miles of stream on the Forest, about 343 key miles of perennial stream are suitable for improvement. Of these, 200 miles are located in native golden trout waters on the Kern Plateau; 88 miles are located in concentrated recreation areas; 40 miles represent potential threatened trout habitat; and 15 miles could be rewatered through the hydroelectric relicensing process. Although another 125 miles of stream have been partially or totally dewatered, there are no current opportunities for rewatering them.

The primary habitat problems on the Kern Plateau and in streams suitable for threatened trouts are eroded streambanks and excessive sediment loads. Conditions in such habitat could be improved by controlling sources of erosion and protecting streambanks.

Streams in concentrated recreation areas are typically in fair to good condition. The major problems in those areas are weakened stream banks and low pool quality. Habitat improvement would consist of strengthening streambanks by increasing vegetation and upgrading pool quality with instream structures. The latter are usually only a short-term solution and are costly to construct and maintain.

Approximately 140 miles of stream on the Forest have been partly or totally dewatered for agricultural irrigation, domestic use, or energy generation with a resulting reduction or total loss of fish habitat. The ability of the Forest to rewater these streams is dependent on legal, social, political, and economic factors.

If all opportunities for stream habitat improvement were implemented, the Forest could provide 16,820 additional WFUDs of resident trout fishing. Much of that increase would come from rewatering streams, the most difficult objective to achieve.

Table 33
Potential for Increasing Fish Habitat Capability

Stream Habitat Suitable for Improvement	Miles	Acres	M Lbs	MWFUDs
Golden Trout Wilderness				
Fish Habitat Improvement	31	56	3.9	0.8
Watershed Restoration	169	304	21.3	4.4
Concentrated Recreation Areas	88	211	29.6	6.1
Rewatering of Streams				
Relicensing	15	27	2.7	0.6
Other (no legal mechanisms currently available)	125	225	22.5	4.7
Totals	**428**	**823**	**80.0**	**16.6**

Table 34
Estimated Extent of Reproducing Trout Populations on the Inyo National Forest

	Miles	Acres
Golden trout	300	360.0
Paiute cutthroat trout	3	3.6
Lahontan cutthroat trout	1	1.2
Colorado cutthroat trout	7	8.4
Rainbow trout*	25	30.0
Eastern brook trout	538	645.6
Brown trout	176	212.2
Mixed trout	50	60.0

* Many more miles of stream have hatchery-stocked rainbows, but do not support reproducing populations.

FURTHER PLANNING AREAS

Issues, Concerns, and Opportunities

Public issues regarding the evaluation of Further Planning Areas for their wilderness potential represent a wide range of opinion. Some parties support wilderness designation for all Further Planning Areas on the Forest. Others oppose any additional wilderness. Yet others have addressed the wilderness

characteristics or non-wilderness resource development potential of specific areas.

The California Wilderness Act of 1984 designated certain areas wilderness, made other areas available for non-wilderness uses, and named yet other areas for further planning. This planning process deals only with the wilderness potential of Further Planning Areas. The public has, however, expressed a keen interest in the management of non-wilderness areas resulting from that Act. Some are concerned that the Forest Service will immediately build roads into all non-wilderness areas; on the other end of the spectrum, there is concern that the Forest Service will manage non-wilderness areas as "de facto" wilderness.

Management concerns focus on the need to make well-considered recommendations for the management (wilderness or non-wilderness) of Further Planning Areas. Both the suitability of each area for wilderness and the opportunities associated with other resources and activities must be considered.

Management is also concerned with the need for coordination between Forest Service and Bureau of Land Management wilderness recommendations for adjoining public lands. The Forest has the lead role in evaluating one Bureau of Land Management Wilderness Study Area in conjunction with the adjoining National Forest Further Planning Area.

The Forest must establish a management emphasis, either wilderness or non-wilderness, for all Further Planning Areas. No lands are to remain in the Further Planning category once the Plan is implemented.

It is important to note that any wilderness recommendations made in the Plan are preliminary administrative recommendations that will receive further review, and possible modification, by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. Final decisions on wilderness designations are made by Congress.

Background

The RARE II (Roadless Area Review and Evaluation) study identified 39 areas on the Inyo National Forest, encompassing 1,008,282 acres, as roadless and subject to evaluation for potential wilderness designation. Of these areas, all or parts of three (46,146 acres) were designated wilderness by the California Wilderness Act of 1984. All or parts of twenty-one (338,319 acres) were made available by that Act for non-wilderness uses. All or part of seventeen areas (576,517 acres) were placed in the Further Planning category and are to be considered for both wilderness and non-wilderness uses during the Forest planning process.

In addition to the lands addressed by the California Wilderness Act, 47,300 acres of RARE II inventoried roadless lands in three areas lie in Nevada. Of the three areas, the Excelsior area was recommended for wilderness by the RARE II Final EIS. That recommendation was scheduled for reevaluation by the Secretary of Agriculture in 1982. The Toiyabe National Forest has the lead role in reevaluating the area in conjuction with adjoining Toiyabe roadless lands and for making recommendations in coordination with the Inyo in its Plan. The Sugarloaf Area and 28,541 acres of the 251,868-acre White

Mountains Area were placed in Further Planning by RARE II. All of the roadless lands described above are treated as Further Planning Areas for Forest planning purposes.

Further Planning Areas are located throughout the Forest. Most of the areas in the Sierra Nevada adjoin existing wilderness. Areas in the White and Inyo Mountains, the Benton Range, and the Excelsior Mountains represent the roadless portions of those ranges, none of which as yet contains wilderness acreage.

The Inyo National Forest ranks high in Region 5 in both the number of Further Planning Areas and total acreage in that category. This fact reflects both the rugged topography of the Forest and the relatively low level of resource opportunities which would have triggered roadbuilding over the years.

Table 35 lists the Further Planning Areas on the Forest, showing both National Forest System acreage and acres in other ownership for each area. Lands placed in Further Planning by the California Wilderness Act are distinguished from Nevada acres subject to additional evaulation because of administrative decisions.

The demand for wilderness recreation on the Forest is very high. Existing wildernesses are managed under a trailhead quota system so that use does not exceed established wilderness capacity limits. Quotas are essentially full during the summer peak use season. The demand for wilderness designation on the Inyo as a means of protecting unique and sensitive ecosystems is also present. The latter type of demand focuses on the desirability of wilderness in the White and Inyo Mountains.

There is also a demand for non-wilderness uses in Further Planning Areas. Some of the existing and potential uses that would conflict with wilderness are: OHV and four-wheel drive dispersed recreation, road access for mineral exploration and development, vegetation manipulation for livestock grazing and wildlife habitat improvement, timber harvest, and new hydroelectric development.

The Inyo National Forest has the lead role in evaluating a two-parcel Bureau of Land Management Wilderness Study Area adjacent to the Benton Range Further Planning Area. The Plan will analyze alternatives and make a coordinated recommendation for the wilderness/non-wilderness management of both Bureau of Land Management and National Forest lands in that area.

Table 35
Inyo National Forest Further Planning Areas*

Code Number	Name	California Acres NFS	California Acres Other	Nevada Acres NFS	Nevada Acres Other
5033	Coyote Southeast	55,588	(410)		
5035	Table Mountain	4,138			
5038	Buttermilk	854	(300)		
5040	Wheeler Ridge	16,229			
5045	Laurel-McGee	9,090	(80)		
5049	Horse Meadow	5,580			
5050	Tioga Lake	920			
5051	Hall Natural Area	5,209			
5052	Log Cabin-Saddlebag	17,093			
5056**	Benton Range	10,451			
5058A&B	White Mountains	223,326		28,541	
5059	Blanco Mountain	16,348	(100)		
5060	Birch Creek	32,705	(600)		
5061	Black Canyon	34,804			
5063	Andrews Mountain	13,619			
5064A&B	Paiute	130,563			
5296	Sugarloaf			10,720	(120)
5989	Excelsior			8,039	(35)
	Total	**576,517**	**(1490)**	**47,300**	**(155)**

*For a detailed description of each Further Planning Area, see Appendix C.
**Studied jointly with Bureau of Land Management Wilderness Study Area #CA-010-077 (4,052 acres).

It is important to remember that none of the areas made available by the California Wilderness Act for non-wilderness uses will be considered for wilderness during this ten-year planning period. They can, however, be considered for wilderness again in future planning periods if they still meet the minimum criteria for wilderness.

GEOLOGY

Issues, Concerns, and Opportunities

The public has not raised any major planning issues related to geology. There are, however, several management concerns about geologic resources and services. One is the potential demand for groundwater as a domestic water source for Mammoth Lakes. An associated concern is the need to assess groundwater resources on a Forest-wide basis. A third concern is the need to recognize and make allowance for the risk to planned Forest projects posed by geologic processes such as landslides, earthquakes, and volcanic events. The fourth concern is the need to protect outstanding geologic features which are vulnerable to damage or destruction.

The Forest has the opportunity to establish management direction for geologic resources and services. Direction that should be established in response to national and regional planning requirements include: guidelines for groundwater inventory and management and guidelines for assessing the risk to Forest projects posed by geologic processes. The establishment of geologic Special Interest Areas and/or Research Natural Areas should also be considered.

Background

Geology involves both resources and services. Resources include groundwater, mineral materials, and outstanding geologic features. Geologic features are also a primary component of the Forest's visual resource. Geological services entail the assessment of the risk to Forest projects posed by geologic processes such as landslides, earthquakes and volcanic events.

Groundwater is used by the Forest Service for recreation sites, administrative facilities, fire management units, and grazing and wildlife needs. The total current groundwater volume used to support Forest programs and facilities is 105 acre-feet. The maximum projected demand is for 247 acre-feet with full recreation development over five decades. Current Forest Service direction is to convert surface water sources to groundwater sources wherever feasible. Although the potential of individual sites has been assessed, the extent and quality of the groundwater resource has not been inventoried Forest-wide.

Ski areas on the Forest use 300 acre-feet per year and project a need for 300 additional acre-feet to meet current needs. Additional ski area development could increase the demand for water by as much as 300 percent.

The public demand for groundwater is expected to increase in the Mammoth area as the community grows and its needs exceed the supply of available surface water. The Town of Mammoth currently plans to convert 1,480 acre-feet of surface water sources to groundwater sources and to develop an additional 1,480 acre-feet of groundwater to meet existing needs. Projected community development scenarios could increase community needs by as much as 300 percent.

The development of geothermal resources could also place a demand on groundwater supplies and, depending on development location, could compete with municipal needs for the available groundwater. The overall demand for groundwater for geothermal development is unknown because the extent of the geothermal resource is unknown. It is estimated that two acre-feet of groundwater would be used on the average for each deep exploration well.

The Inyo National Forest is located in an area where geologic processes are actively shaping the land. Sometimes acting alone, sometimes acting in concert, seismic processes, slope instability processes (such as landslides), and volcanic processes represent an attraction as well as a risk.

The existing Forest-wide geologic resource inventory classifies land in terms of high, medium or low risk of impacts from geologic processes. Approximately 453,600 acres on the Forest are classified as high risk from landslides; 37,600 acres as high risk during an earthquake from ground

shaking; 48,000 acres as high risk during an earthquake from surface rupture; 373,000 acres as high risk during a volcanic eruption from lava flows; and 631,400 acres as high risk during a volcanic eruptions from airborne material.

Slope instability processes (including those triggered by earthquakes) are the most important geologic events on the Forest in terms of risk, primarily because of their relative frequency. Volcanic events are the least important due to their low frequency, despite the magnitude of their potential impacts.

Seismic activity on the Forest has been noteworthy in recent times. Earthquakes with Richter-scale magnitudes of up to 6.0 have been recorded and are thought to have been caused by volcanic forces as well as earth movements. Although there has been some damage to structures in the Mammoth area, the amount of serious damage has been minimal. The most significant impact of recent seismic activity has been widespread media coverage resulting in sporadic reductions in visitation, with corresponding negative effects on the local economy.

Landslides have been most noteworthy during periods of intense seismic activity. Rockfalls and avalanches have been noted as a result of most large earthquakes (magnitude 5 and above). Although some local damage has resulted from seismically induced landslides, few structures are currently located in high risk areas. Landslides resulting from road construction are not a common problem on the Inyo because few Forest roads are constructed in high-risk areas.

The abundance of relatively young volcanic features in the area indicate that volcanic processes have been active in the recent past. Eruptions in the form of tephra falls, phreatic explosions, and lava flows have all occured within the past five hundred years. There are strong indications that volcanic forces have caused ground swelling and strong seismic activity as recently as 1980. Professional geologists believe that further volcanic activity can be expected. Current information and modeling techniques do not, however, allow for the accurate prediction of the timing and location of volcanic events.

Outstanding geologic features are addressed under the headings of Research Natural Areas and Special Interest Areas.

LANDS: BOUNDARY ADJUSTMENTS

<u>Issues, Concerns, and Opportunities</u>

There are many management concerns related to proposed boundary adjustments between the Forest Service and the Bureau of Land Management (Bureau of Land Management). These concerns will be addressed apart from the current planning effort.

<u>Background</u>

The California Wilderness Act of 1984 transferred certain lands in the new Mono Basin National Forest Scenic Area from Bureau of Land Management to

Forest Service administration. Planning for the Scenic Area is being conducted separately from the Forest planning process.

In addition, the Secretary of the Interior and the Secretary of Agriculture in January 1985 proposed a nation-wide administrative interchange of lands between the Bureau of Land Management and the Forest Service. Various proposals for legislative confirmation of the interchange are currently being considered in Congress. The Plan will be amended as needed upon passage of confirming legislation and consequent transfer of lands.

LANDS: LANDLINE SURVEYS AND UNAUTHORIZED OCCUPANCY

Issues, Concerns, and Opportunities

There are no major issues, concerns, or opportunities related to these subjects on the Forest.

Background

The Forest has surveyed 31 miles of property line and posted it to standard; 1,150 miles remain unsurveyed. Although there is little need for landline surveys to support the Forest resource program, there is a steady demand for interior boundary surveys to help resolve occupancies. The present Forest target of six miles of survey per year related to such cases is adequate.

The Forest currently resolves an average of five occupancy trespass cases per year. There are an estimated fifty unresolved occupancies Forest-wide. Many of the Forest's occupancy situations are long standing and can be handled administratively by special-use permit or resolved via the Small Tracts Act.

LANDS: LANDOWNERSHIP ADJUSTMENTS

Issues, Concerns, and Opportunities

There are some serious management concerns in the landownership adjustment program. One concern addresses the availability of National Forest lands adjacent to growing communities (through exchange) for private development programs.

The high per-acre value of National Forest lands adjacent to local communities gives the Forest an opportunity to acquire large tracts of privately owned lands of lower per-acre value within National Forest boundaries, either on the Inyo or on another National Forest. However, the federal acquisition of private land is viewed with distaste by local government, as private land is subject to property taxes while federal land is not. This issue is especially sensitive where land entering the private sector is in one county and land entering the federal sector is in another.

It is imperative that a mutual understanding develop between the Forest Service and local government as to what constitutes legitimate community expansion. The Forest has the opportunity to develop direction in the Forest

plan that addresses community growth in concert with local community planning.

Background

The Inyo National Forest administrative boundary encloses 2,046,346 acres, of which 116,591 are in non-federal ownership. In Inyo and Mono Counties, which contain most of the National Forest lands, less than seven percent of the land within the National Forest boundary is in other ownership (more than 50 percent of that acreage belongs to the State of California or the City of Los Angeles and lies within the recently legislated Mono Basin National Forest Scenic Area).

The Inyo National Forest carries on a vigorous land adjustment program, especially in the Mammoth Lakes area. Since 1960, almost 1,000 acres have entered the private sector in exchange for more than 15,000 acres which have become National Forest lands. (The difference in acreage reflects the high per-acre monetary value of National Forest lands relative to that of the private lands obtained.)

The goal of land exchange is to achieve a sensible and productive private sector-public sector relationship, especially within and adjacent to existing communities. Both Inyo and Mono County governing boards are outspoken in their support for an adjustment program that provides for community expansion. Present Forest Service direction is to reduce the existing and potential impacts of private land uses on National Forest lands by working closely with local government. In addition, the Inyo strongly supports the principle that private land be developed under local land-use plans.

LANDS: RIGHTS-OF-WAY (SEE ALSO TRANSPORTATION AND UTILITY CORRIDORS)

Issues, Concerns, and Opportunities

There are no major issues, concerns, or opportunities related to rights-of-way on the Forest.

Background

The Inyo National Forest has little need to acquire rights-of-way for resource management because of the landownership pattern. Most areas with resource management opportunities are already roaded, and areas in which roads are still needed are accessible across National Forest land.

LANDS: SPECIAL USES

Issues, Concerns, and Opportunities

The major concern regarding special uses on the Inyo is that, as the Mammoth Lakes and June Lake communities expand, there is an increasing demand to locate community service facilities on public land.

The Forest has the opportunity to establish guidelines in the Forest plan for approving special use applications on the Forest.

Background

A wide variety of activities and facilities are permitted under special use permit on National Forest land. These land uses meet the needs of individuals, organizations, companies, corporations, or government bodies. Existing special uses on the Inyo are summarized below:

Table 36
Activities Under Special Use Permit

Type	Number	Acres	Miles
Agricultural	26	2,544	2
Community	13	100	0
Industrial	31	906	0
Public Information	3	1	0
Recreation	546	3,980	9
Research, Study	32	16,983	0
Transportation	127	4,818	617
Utilities & Communication	90	3,627	1,250
Water Uses	109	2,001	33
TOTAL	**977**	**34,960**	**1,911**

The Forest Service has the responsibility of managing the National Forests for public use. Private parties are therefore encouraged to locate their developments on private lands wherever such lands are available and logically situated to accommodate the development. Public land can be made available for private uses only when those uses are compatible with the established multiple-use objectives for the National Forest land involved and when they cannot reasonably be located on private land. Public uses take priority over those of a semi-public nature, which in turn take priority over individual uses.

Some local government entities assume that Inyo National Forest land is, and should be, available for community facilities. The situation is more pronounced on the Inyo than on other National Forests because so little of the land in Inyo and Mono Counties is privately owned. Schools, community buildings, fire stations, airports, and the like have historically been built on National Forest land under special use permit. As land values have escalated, so have special use fees, to the point that fees have become prohibitively expensive in the eyes of permittees. Strong pressure has been exerted on the Forest Service to transfer lands encumbered by community service facilities into the private or community sector.

Recreational special uses are discussed under the heading of Recreation.

LANDS: TRANSPORTATION AND UTILITY CORRIDORS

Issues, Concerns, and Opportunities

Electric energy conveyors have raised an issue regarding a potential utility corridor. A route paralleling the existing north-south Pacific DC Intertie transmission line (in the Pizona-Excelsior area of the northeast corner of the Forest) has been identified by public utility interests as a potential designated corridor. The opportunity for corridor designation would materialize if applications were made for additional utility rights-of-way along the Pacific DC Intertie route.

Background

There are 1,239 miles of utility lines crossing National Forest land under special use permit or easement. Of these lines, the Pacific DC Intertie line is the most significant. This line is a major intertie facility for Southern California. It is operated under permit to Southern California Edison.

Although there are no designated utility corridors on the Forest, rights-of-way are consolidated where feasible to minimize the effects of roads and power lines on other resources. These uses are appropriate under current management direction.

LANDS: WITHDRAWALS

Issues, Concerns, and Opportunities

There are no major issues or concerns related to withdrawals on the Forest.

There is a need, however, to consider the effects of Forest decisions (such as wilderness recommendations) on opportunities for mineral exploration and development.

Background

A withdrawal limits the activities that can occur on a specific parcel of land. The purpose of a withdrawal is to protect specific emphasized resource values from the potential impacts of other activities, primarily mining. Many withdrawn lands are closed to any mineral exploration or development. Wilderness lands are closed to new mining claims, but not to the development of existing valid claims. Power and water withdrawals can result in restrictions on activities proposed for withdrawn lands if those activities would conflict with water use or power production.

Withdrawals on the Inyo National Forest total 758,876 acres, representing actions intiated by the Forest Service, by Congress, or by other federal agencies. The following is a list of withdrawals by land use category or special area designation. (Some of these withdrawals overlap one another).

Table 37
Inyo National Forest Withdrawals by Category

Area name or designation type (responsible entity)	Acres
Ancient Bristlecone Pine Forest (Forest Service)	28,887
Mono Basin National Forest Scenic Area (Congress)	45,000
Developed recreation sites (Forest Service)	5,363
Administrative sites (Forest Service)	1,136
Research Natural Areas (Forest Service)	8,946
Watershed and irrigation (various entities)	26,921
Power projects (FERC)	46,420
Power site reserves (FERC)	31,061
Wilderness (Congress)	565,142
TOTAL	**758,876**

Section 204 of Public Law 94-579 (Forest Land Policy and Management Act) requires the Secretary of Interior to review all withdrawals by October 1, 1991, and to determine whether they should be extended, modified, or revoked. The Inyo National Forest will assist in this review by analyzing those withdrawals that have been initiated by the Forest Service. The Forest Service will also cooperate with other federal agencies as they review the withdrawals they have intiated (primarily water and/or power-related). Restoration to mineral entry will be recommended if existing or potential resource conflicts can be mitigated under the provisions of the Surface Use Regulations (36 CFR 228). Those regulations provide the Forest Service with more control over mining operations than was available when many mineral withdrawals were originally established.

MINERALS: GENERAL

The Forest manages for mineral resources is to integrate the exploration and viable development for minerals within the National Forest consistent with the use and protection of other resource values, and to provide for the reclamation of those lands where mining activity is taking place or has taken place.

The prospecting, locating, and developing 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 subpart C--disposal of mineral materials), and 293.14 (mineral leases and permits in wilderness). The review and approval of proposed mining activities as they relate to access and surface disturbance is authorized by these regulations.

The other principal statutes authorizing the disposition of federal minerals resources are the General Mining Law of 1872 as amended (17 Stat. 91), the Mineral Leasing Act of 192 as amended (41 Stat. 437), the Mineral Leasing Act

for Acquired Lands of 1947 as amended (61 Stat. 681), the Multiple Mineral Use Act of 1955 as amended (68 Stat. 708), the Mining and Mineral Policy Act of 1970, the Geothermal Steam Act of 1970 and the 1980 National Materials Policy, Research and Development Act. Other laws govern the responsibility that land management agencies have for resource management in general and, therefore, influence how decisions are made with respect to mineral disposition. Specific examples are: The National Environmental Policy Act as amended (83 Stat. 852), the Clean Air and Water Act, and the Endangered Species Act.

Generally, the authority to manage locatable and leasable mineral resources is retained by the Secretary of the Interior. Agreements, embodied in Memoranda of Understanding between the Secretaries of Agriculture and Interior which share various work processes are found in Forest Service Manual (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 Forest Service has taken a positive attitude toward the minerals programs on the Forest, by direction from the Regional Office and the Washington Office to the field offices to consider minerals programs on an equal par with all programs, such as timber, grazing, recreation, and watershed. This direction has been included in the Plan and will help in the accomplishment of the Forest management for mineral resources.

The detailed authorities and direction for locatable minerals, mineral leasing, and mineral sales are found in Forest Service Manual 2800, Minerals and Geology.

Mineral withdrawals are discussed under the heading of Lands: Withdrawals.

MINERALS: LEASABLE (GEOTHERMAL ENERGY)

Issues, Concerns, and Opportunities

There are several major public issues and management concerns regarding the development and operation of geothermal power plants on the Inyo National Forest. One issue is the availability of land to explore and develop the resource. Another issue addresses the effects geothermal activities would have on the environment or on the recreational attractions which support the local economy. Yet other issues involve the long-term effects of removing geothermal fluids, including potential impacts on surface resources, risks associated with geologic processes, and water (both surface and groundwater).

The possible effects of geothermal development on other resources have been estimated in environmental assessments dealing with proposals to lease Forest land for geothermal exploration. It is, however, difficult to analyze potential impacts until more is known about the size, location, and nature of the resource.

When geothermal resources are located on National Forest lands, they come under a dual management concept. The Department of Interior (Bureau of Land

Management) has the responsibility for leasing geothermal resources, while the Forest Service manages the surface resources affected by exploration and development. The Forest Service has an opportunity to influence the course of geothermal development by stipulating requirements deemed necessary to protect those surface resources.

Background

Geothermal energy is a potential resource on the Inyo National Forest. About 260,000 acres of the 460,000-acre Mono-Long Valley Known Geothermal Resource Area (KGRA) are on National Forest lands. The KGRA is located in the northern portion of the Forest near the communities of Mammoth and June Lake. More than 80,000 acres of National Forest land have been offered for geothermal leasing in two separate lease blocks in the KGRA. Six companies have leased approximately 28,000 acres in Lease Block I, and two companies have leased approximately 12,900 acres in Lease Block II. Approximately 13,500 acres of Lease Block II remain to be leased. Environmental Assessments addressing geothermal activities in Lease Blocks I and II were prepared between 1980 and 1985. These assessments were tiered to a 1973 programmatic Environmental Impact Statement on geothermal leasing in the KGRA.

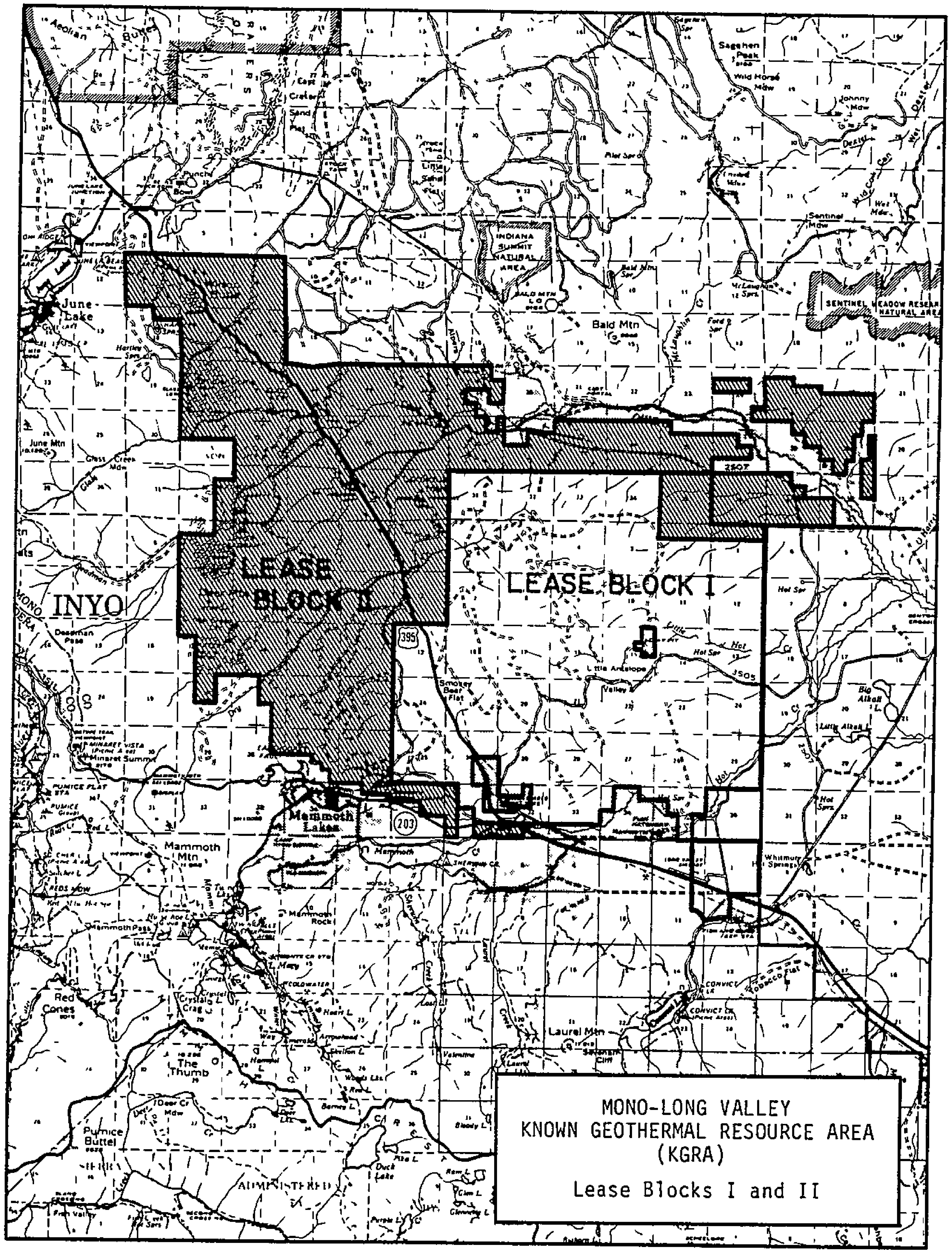
Although shallow subsurface testing has occurred, no deep exploratory wells have yet been drilled on these lease holdings. However, a seven megawatt geothermal power plant is operating on private land in the Casa Diablo area, and a similar project is planned for a site on land owned by the City of Los Angeles near the Hot Creek Fish Hatchery. These relatively small power plants draw from a shallow reservoir that is expected to be cooler than the deeper reservoir currently being explored. Power plants utilizing deep reservoirs are expected to have a generating capacity of 25 megawatts or more. No development scenario was provided for the environmental analysis for Lease Block I. It is estimated that a sufficient geothermal resource exists within the lease area to support at least two small power plants. The development scenario for Lease Block II suggests that a sufficient geothermal resource exists to support four 50 megawatt power plants.

Approximately 20,000 acres of land in the Monache Meadows area of the Kern Plateau have been considered for leasing to one company. The 1985 Environmental Assessment of geothermal leasing in that area produced a no-leasing decision. Approximately 3,200 acres are being considered for lease to one company in the northeast corner of the White Mountains; that proposal is currently being assessed, but no decision has yet been made. Leasing decisions for any other areas outside the KGRA will be made on the basis of additional site-specific environmental analyses.

MINERALS: LOCATABLE

Issues, Concerns, and Opportunities

The primary public issue related to locatable minerals on the Forest concerns the limitations on mineral activity represented by the recommendation of additional wilderness on the Forest.



MONO-LONG VALLEY
KNOWN GEOTHERMAL RESOURCE AREA
(KGRA)

Lease Blocks I and II

Management concerns relating to locatable minerals exploration and development include the emphasis on amenity resources such as visual quality, wildlife, and recreation; and other resource concerns such as water quality, soil productivity, and vegetation protection could limit mineral development.

Background

The Inyo National Forest has a long, active history of mining. The Bureau of Mines lists the following commodities in 513 mineral prospects within the Forest boundary.

gold	mercury	tungsten	gypsum
silver	molybdenum	zinc	marble
copper	lead	block pumice	aluminum
barium	uranium	fluorite	limestone
iron	talc	calcite	cobalt

Eleven mineral operations on the Forest are currently producing. The most significant of these are the Umetco Pine Creek Mine in Pine Creek and the U.S. Pumice block pumice mine in the Mono Craters. The latter produces more than 10,000 tons of block pumice each year.

More than 3,000 mining, mill site, and tunnel site claims are recorded for Forest lands and approximately forty new mining claims are filed each year. Most discoveries involve noncritical minerals. Cobalt is the only critical mineral that has been found on the Forest.

The mineral potential of non-wilderness lands on the Forest has been estimated on the basis of geologic formations and past mining activity. The 565,142 acres of designated wilderness has not been rated for mineral potential. A mineral potential rating of "high" has been applied to 133,860 non-wilderness acres of the Forest; a rating of "medium" has been applied to 209,021 acres; the remaining 1,020,732 acres have been rated "low". The largest acreage in the high and medium mineral potential categories is found in the Inyo Mountains and the lower elevations of the White Mountains. Smaller pockets are found in the Sierra Nevada west of Bishop, south of Mammoth Lakes, and on the lower slopes of the Escarpment between Big Pine and Lone Pine. An additional pocket is found in the Benton Range.

MINERALS: MINERAL MATERIALS

Issues, Concerns, Opportunities

There are no public issues related to mineral materials on the Forest. Management is concerned only with the need to develop a materials management and development plan.

Background

Mineral materials are used by counties, private parties, other federal agencies, and the Forest Service for construction projects. The most common use is for road work. Materials sources come under a variety of ownerships. Of the fifty material sources inventoried in the area, 28 are on National

Forest lands; the remainder are located on Bureau of Land Management, City of Los Angeles, or private land. The estimated supply of materials from known reserves is 1.98 million tons.

Current Forest Service demand for road construction and reconstruction averages 40,000 tons per year. Estimated amounts of material in known reserves are large enough to supply the projected demand for road work alone under current management for a supply life of approximately 43 years. That supply life would shorten if new roads were constructed.

Mineral materials are also needed for recreation site construction, ski area development, community development, and state and county use. The amount needed for these purposes would further shorten the projected supply life based on road work alone.

MONO BASIN NATIONAL FOREST SCENIC AREA

Issues, Concerns, and Opportunities

There are many public issues and management concerns related to management of the Mono Basin National Forest Scenic Area. These issues and concerns will be addressed in separate planning for Scenic Area management, not in the Forest planning process. The Scenic Area Management Plan will tier to the Forest Plan.

Background

The Mono Basin National Forest Scenic Area was designated by the California Wilderness Act of 1984. The Scenic Area includes a total of approximately 116,000 acres. Of this acreage, approximately 21,402 were National Forest acres before Scenic Area designation. Congress transferred approximately 24,430 additional acres from Bureau of Land Management administration to the National Forest. The remaining non-federal land includes the lake surface itself and some relicted lands (lakeshore exposed during the past forty years because of water diversion) administered by the State of California. The federal government owns approximately 60 percent of the relicted lands, and the state owns approximately 40 percent of these lands.

Congress has legislated a planning process for the Scenic Area which includes construction of a visitor center and provisions for protection, interpretation, and public enjoyment of the area. That planning process includes the involvement of a public advisory board with membership stipulated in the legislation. The Scenic Area is being managed under an Interim Management Plan until the Comprehensive Management Plan is completed.

The Scenic Area is not likely to conflict seriously with activities on adjacent Forest lands, as more than half of the boundary adjoins Bureau of Land Management lands. The southern boundary of the area adjoins suitable timber lands. Public woodcutting is the timber-related activity most likely to affect the Scenic Area. As that activity is allowed within the Scenic Area, there is little likelihood of conflict. The visual impacts of timber harvest as seen from within the Scenic Area would be minimal due to

topographic screening and gentle terrain. The southwest boundary adjoins rangelands managed for domestic livestock grazing. If grazing continues to be permitted within the Scenic Area, there would be no potential for conflict. If it is not permitted, there could be some conflict if livestock drifted across the Scenic Area boundary. Lands adjoining the western boundary are suitable for concentrated recreation use and primitive recreation use. Neither type of use represents a conflict with Scenic Area management priorities.

PEST MANAGEMENT

Issues, Concerns, and Opportunities

The primary public issue for pest management is the desirability of using cultural, biological, or mechanical controls instead of chemical pesticides.

There have been no recent widespread pest-related problems on the Inyo National Forest and there are currently no major management concerns about pests. There are, however, some potentially important localized pest problems, particularly in areas with a recreation management emphasis. The Forest will continue to implement an Integrated Pest Management (IPM) approach to reduce and/or maintain pest damage at acceptable levels.

This IPM approach calls for the integration of pest management activities (prevention, surveillance, detection, evaluation, suppression, and monitoring) into resource management planning and decision making. Pest information will be considered, for example, in the development and implementation of silvicultural prescriptions.

The goal of IPM is to prevent and/or reduce pest-related damage considered unacceptable due to its impact on human activities or resource management objectives. In the selection of appropriate pest management methods, all techniques are considered on a case-by-case, project level basis. The preferred methods are selected on the basis of site-specific analyses of biological effectiveness, costs, and effects on human health and the environment.

Under the IPM approach, the level or intensity of pest management practiced will vary in response to the resource management emphasis and targeted outputs of each alternative. For example, alternatives that involve high levels of vegetative management, increased recreation use, and expanded recreation site construction would call for the implementation of high intensity IPM.

High intensity IPM would, in turn, involve frequent surveillance and detection activities 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 of the need for direct control against pests. In addition, the timely utilization of new methodologies and effective coordination with pest management research would have increased importance. The need for high intensity IPM would also mean increased opportunities to integrate pest management considerations into resource management decision-making and to

implement preventive actions, particularly through vegetation management, which should reduce the need for direct control in the future.

The Forest has an opportunity to prevent and/or reduce pest-related problems by applying sound silvicultural practices that emphasize the health and vigor of timber stands. Such practices are appropriate not only on commercial timber lands, but also on forested lands where other resources (such as developed recreation) are emphasized.

Background

Insects, diseases, animals, and competing vegetation can damage trees and other vegetation. Such damage can, in turn, prevent the Forest from meeting its management goals and objectives by reducing the quality and/or quantity of commodities and amenities produced, or by creating hazardous conditions. When goals and objectives cannot be met, the agent responsible for the damage is considered a "pest."

Pest damage can vary from year to year and place to place within the Forest and is frequently the result of several pests and/or environmental factors acting together as a complex, rather than the result of action by a single pest. Common pest complexes on the Forest involve interactions between dwarf mistletoe, bark beetles, and root diseases. The damage caused by such pest complexes is often aggravated by site and stand conditions, including overstocking. In general, these pests, along with their natural enemies (parasites and predators) are a part of the environment and have become adapted to exploit certain ecological niches or conditions which occur during the development of the Forest.

There are several organisms on the Inyo National Forest that have the potential to cause unacceptable resource damage. The most important disease on the Forest is annosus root disease, which decays the roots of conifers. The Forest treats the surface of freshly cut conifer stumps with borax to prevent the aerial spread of this disease. Dwarf mistletoe, a plant parasite that causes growth loss, affects most coniferous species on the Forest and is a problem in localized areas. Both annosus root disease and dwarf mistletoe weaken trees and help predispose them to bark beetle attack. Such interactions can be particularly important in developed recreation areas.
Potential insect pests on the Inyo National Forest include bark beetles and defoliators. The Jeffrey pine bark beetle, mountain pine beetle and pine engraver beetles typically cause scattered mortality of individual trees and small groups of trees throughout the Forest. Much of this mortality is salvaged and used for firewood. Two defoliators, the pandora moth on Jeffrey pine and the western tent caterpillar on bitterbrush, have caused noticeable defoliation in several areas on the Forest.

Pocket gophers periodically cause problems with regeneration by clipping and girdling the roots and stems of seedlings. Ground squirrels and other rodents sometimes damage structures in campgrounds and other developed sites through their chewing and digging behavior; they can also carry bubonic plague. The Inyo National Forest cooperates with the appropriate state and local public health agencies in monitoring, reporting, and controlling plague problems. Control of competing vegetation is discussed under the heading of Timber.

PROTECTION (FIRE MANAGEMENT)

Issues, Concerns, and Opportunities

The only public issue related to fire protection on the Forest addresses the desirability of allowing natural fires to burn, where appropriate, to allow fire to play its natural role in maintaining vegetative diversity.

The primary management concern on the Inyo is to determine the most cost-effective fire organization for the Inyo National Forest. This determination will depend largely on the combination of wildfire suppression policies that are implemented.

Current Forest fire management practices includes control (immediate, full-scale suppression) confinement (utilizing natural terrain barriers; little or no on-the-ground action), and containment (limited line construction), or control where appropriate. The confinement or containment suppression strategies are probably appropriate for much of the Inyo National Forest. The Forest's Fire Management Action Plan will establish the fire suppression strategies that will be used on all areas of the Forest.

Management also sees a need to work closely with other responsible entities to mitigate the fire risk associated with urban growth.

Background

Fire management on the Inyo National Forest includes the following components: planning, prevention, detection, suppression, fuels management, and coordination with the management of other resources, including the use of prescribed fire as a management tool.

Prescribed fire is a resource management tool commonly used to prepare the ground for reforestation planting, to promote new brush and grass sprouting for livestock or wildlife browse, to reduce fuels for wildfire, or to abate weeds around recreation facilities. Prescribed fire is carefully applied with consideration for fuel, weather, and topographical conditions.

Fuels management activities modify the amount, size, and placement of living and dead combustible vegetation. Fuels resulting from timber sales (limbs and cull logs) are not a major problem on the Inyo, due to the public demand for such material as fuelwood and the ease of access to timber sale areas for fuelwood gathering.

From 1972 to 1982, the Inyo experienced 491 man-caused fires, burning a total of 5,616 acres; and 715 lightning-caused fires, burning 2,496 acres. The Inyo is typical of National Forests in California, having many small fires with an occasional large, damaging fire.

As the Forest is expected to receive increasing visitation due to population growth (both outside the area and in local communities), the number and size of wildfires is also expected to increase with corresponding pressure on the fire organization. While the confinement or containment suppression

strategies could reduce that pressure for some areas, those reductions would be offset by increased use of lands, especially near communities.

In 1982 the Forest had ten fire prevention units. Pre-suppression and suppression staff included seven district supervisory staff, seven fire engine modules (each with a crew of three to five firefighters), one helicopter with initial attack crew, one lookout, and one fixed-wing aircraft. Backup forces to supplement initial suppression efforts are drawn from Forest Service personnel, regional specialized fire crews, cooperating agencies, and pretrained and certified contractors.

The Inyo National Forest is a member of the Owens Valley Interagency Command Center. This center coordinates the wildfire suppression efforts for all wildlands, regardless of jurisdiction, from Topaz Lake to the Kern Plateau and from Death Valley to the Sierra Nevada crest. The "closest appropriate resource" concept is applied in responding to fires. Because of this concept, numerous resources are available to the Forest.

An analysis of fire management program options indicates that the most cost-effective program would reduce the base year staffing level and increase the emphasis on suppression relative to prevention. However, the base year 1982 staffing level, with an increased emphasis on suppression, is only slightly less cost-effective than reduced staffing and offers an increased margin of safety for high-value improvements in communities adjacent to National Forest lands.

The current Forest suppression policy calls for immediate control of all wildfires on the Forest except for areas in the Wildernesses, White Mountains and Inyo Mountains. The interim Inyo Fire Management Plan provides for the use of containment or confinement where these strategies are more appropriate than control. Many additional lands on the Inyo are well-suited to confinement or containment strategies.

The Forest Service fire management strategy is wildland fire protection. The Forest will respond to a structure fire only in an emergency situation where local fire agencies are unable to handle such a fire. When local firefighters have arrived in sufficient force, Forest Service units will withdraw from the structure fire and focus on protection of adjacent wildlands.

RANGE

Issues, Concerns, and Opportunities

The public has raised several issues related to domestic livestock grazing on the Inyo National Forest. These issues include:

1. A perception that cattle overgraze riparian areas and key wildlife wintering and fawning areas, resulting in increased erosion and loss of vegetation for forage and cover. Grazing in developed recreation sites is not an issue on the Inyo, as livestock are excluded from such sites.

2. A fear by the livestock industry that the grazing program could be reduced or prevented from increasing as a result of the issues listed above.

3. A perception that fire suppression contributes to declining range forage outputs.

Another set of issues relates to the management of wild horses and burros on the Forest. The number of animals considered appropriate for a management territory has become an emotional public issue nationwide. The issue revolves around the question of apportioning the range resource equitably to wild horses and burros, native wildlife such as deer, and domestic livestock on a given territory.

There are many factors limiting increases in range forage on the Inyo. Those factors include decadence of the range due, in part, to fire suppression and a lack of prescribed range treatment; competition with timber management and mule deer habitat needs; and statutory limitations and physical land characteristics. These factors are discussed in more detail below.

The Forest has the opportunity to address the issues and concerns cited above. The interactions among those issues and concerns are, however, complex.

Sound allotment administration and range management practices can prevent erosion and the over-utilization of forage. Vegetation treatment can maintain, or even increase, forage production by rejuvenation or type conversion. Riparian habitat, deer winter range, and fawning habitat can be protected by fencing, better livestock distribution, more intensive management, or substantial reduction in livestock numbers. Wild horse and burro populations can be managed with an emphasis on those species. Land suitable for both timber and grazing can be managed for both types of outputs.

The complexity of interactions is seen when a positive response to the issue of protecting or increasing wildlife habitat would entail a negative response to the issue of increasing livestock grazing, or when the maintenance of current grazing in suitable timber would conflict with the timber issue of increasing timber production.

The major opportunity to resolve range issues and concerns is to clearly identify the overall management emphasis of the Inyo National Forest, the primary emphasis to be applied on subparts of the Forest and the management direction needed to support those emphases.

Background

The range forage program on the Inyo National Forest currently ranks fifth among Forests in California, with 41,400 AUMs (Animal Unit Months) of use in 1982. The grazing season typically extends from late June to late September.

In 1984, there were sixty grazing allotments: thirty-nine for cattle (24,479 AUMs), thirteen for sheep (13,152 AUMs), and four for horses (563 AUMs). All allotments are available for domestic livestock permits except for the Pizona

allotment, which has been deferred since 1973 to accommodate wild horses. In addition to the allotments, there are fifteen special use horse pastures (431 AUMs) associated with commercial recreation stock pack stations. Other recreation stock utilize about 132 AUMs per year.

Range allotments cover 886,103 acres, of which 399,296 acres are actually suitable for grazing. Included in the suitable grazing land are 10,448 acres of waived private land. An additional 6,600 acres of suitable range presently lies outside of allotments, These acres are isolated and lack water sources but could be made available for grazing.

In most areas, range condition is poor to fair by Region 5 standards, and the trend is static to improving. Meadows and riparian areas are considered poor but improving in terms of range production. Vegetation types on the Inyo are, however, more similar to those found elsewhere in the Great Basin than to those found elsewhere in California. Rangelands on the Inyo would rate higher by Region 4 standards, which are based specifically on Great Basin vegetation types comparable to those found in the Eastern Sierra.

Bitterbrush (115,409 acres), big sagebrush (160,000 acres) and wet meadows (26,000 acres) are the mainstay of the range resource. They account for an estimated 80 percent of the Forest's grazing outputs. Bitterbrush loses productivity rapidly after seventy years of age. In the absence of wildfire or prescribed vegetation treatment, it may remain in a decadent condition indefinitely. Likewise, meadows are invaded by woody species when vegetative succession proceeds without the interruption of natural fires or other rejuvenating processes or treatments. By the end of the next fifty years, virtually all of the bitterbrush and big sagebrush on the Forest will be decadent under current treatment schedules.

The cost of extensively applying such practices as prescribed burning, mechanical manipulation, or spraying would be very high. Approximately 3,900 acres of suitable range brush would need to be rejuvenated each year to maintain current grazing outputs (27,000 AUMs) from brush types over the next fifty years. Prescribed burning would be the treatment method favored, due to public controversy over herbicide use and the fact that burning is more effective than mechanical manipulation in stimulating increased forage production. Actual decisions about the methods used would be based on site-specific analysis.

Timber management on lands suitable for both grazing and timber production is another factor limiting the size of the grazing program. About 37,000 acres of the suitable timber base presently provide 3,700 AUMs of annual grazing. If timber outputs on these acres were maximized, over 2,700 annual AUMs of grazing would be lost by the end of fifty years. Some of the loss could probably be regained by grazing stands of non-commercial or unsuitable timber where grazing does not yet occur.

All suitable rangelands are now considered permanent range except for those rangelands in suitable timber. These range-timber lands are capable of producing permanent forage and have traditionally been counted in the suitable range base. They have also, however, been scheduled for reforestation. As reforestation is implemented, these lands may eventually be removed from the suitable range base.

It is unlikely that timber lands on the Inyo can be utilized as transitory range because the primary forage species is bitterbrush. The bitterbrush would be removed as part of the site preparation process and is unlikely to regenerate under a timber canopy cover greater than 30 percent.

The habitat needs of mule deer may conflict with cattle grazing in two areas: fawning habitat and winter range. When cattle graze in deer fawning areas early in the season, protective cover for young fawns is lost. There may also be conflicts arising from interactions between livestock and does. Competition between pregnant does and livestock for forage on winter range may be limiting for deer where cattle are present early in the season during "green-up."

Riparian area-dependent resources may confict with grazing because of livestock behavior. Livestock tend to use riparian areas a disproportionate amount of the time. Therefore, even if the range is managed within its overall capacity to support grazing, associated riparian zones may be damaged. Riparian vegetation can be trampled, streambanks denuded, and streams subjected to increased sedimentation. The effects of livestock on riparian areas can be mitigated by managing livestock behavior (e.g., by herding, salting, fencing, developing water sources away from riparian areas, or deferring grazing).

Increases in forage are ultimately limited by physical, biological and statutory factors. Most of the rangeland on the Forest is arid (receiving an average of nine to fifteen inches of precipitation per year) and high in elevation (much of it above 7,000 feet) with a growing season of three to four months. Most soils are derived from granitic or volcanic parent rock and have low water-holding capacity. Lack of water and a short growing season limit the growth of forage plants. Finally, much of the highest quality wet meadowland is in the Golden Trout Wilderness. Grazing in wilderness is restricted to levels that are compatible with wilderness values.

The demand for grazing on the Inyo is expected to continue at or above present levels, since National Forest summer range is essential for local ranch operations. The Forest assumes that if additional AUMs were made available, they would be utilized by present permittees.

The domestic livestock program is currently managed at a moderate level of intensity. Most range allotments have some improvements (such as fences or vegetation treatments) but the improvements are not sufficient to optimize livestock utilization of forage.

Specific range management needs are documented in Allotment Management Plans and Annual Operating Plans. The range permittee is usually responsible for the annual maintenance of structural improvements, while the Forest provides materials for new construction. The useful life of structural improvements varies from twenty to forty years. They are replaced at an average rate of once every thirty years. Approximately one new structural improvement is added each year. There are an estimated 150 miles of fence, 39 miles of water pipeline, 145 water sources (troughs, wells, springs), and 50 miscellaneous structures (such as cattle guards, gates, and corrals) on the Forest.

Non-structural improvements (vegetation treatments) are typically handled by the Forest Service. The useful life of vegetation treatments varies: big sage type conversions are effective for fifteen years. Bitterbrush rejuvenation is effective for seventy years. An average of 200 acres of vegetation have been treated each year over the past five years to benefit domestic livestock. An estimated 3,900 acres of range brush would need to be treated each year to offset decadence and maintain current AUMs over fifty years.

The White Mountain Wild Horse Territory (70 horses) and the Saline Valley and Lee Flat Burro Territory (112 burros) are managed under approved management plans, and current populations are at established management levels.

The Montgomery Pass Wild Horse Territory does not have a management plan, and the number of horses currently exceeds the capacity of the range. A management plan is being written for this herd. The Inyo National Forest, through a Memorandum of Understanding, carries the lead role in developing that management plan. Alternatives to be considered include maintain the area as a Wild Horse Territory, designate the area as a Wild Horse Range, or abolish the Territory. The Forest planning process will not address these alternatives, but they will be addressed in detail by the herd management planning process.

The Forest also has administrative authority for both the Montgomery Pass and White Mountain herds while the Bureau of Land Management has administrative authority for the Saline Valley herd. Two Bureau of Land Management Districts and the Toiyabe National Forest also have jurisdictional responsibilities for the Montgomery herd.

The public demand for wild horse and burro protection is strong.

RECREATION: GENERAL

Introduction

Recreation is the most significant resource on the Inyo National Forest and is expected to continue in that role into the foreseeable future. The Inyo has consistently ranked within the top five National Forests nationwide in terms of total recreation use.

The economic stability of all Eastern Sierra communities rests heavily on recreation-based income. Local businesses describe times as "hard" or "prosperous" in terms of the number of recreation visitors to the area.

The Eastern Sierra and the Inyo National Forest have many attractions that bring people to the area from throughout the state, the nation, and other countries. These attractions include more than a half million acres of designated wilderness; hundreds of lakes and miles of stream with excellent trout fishing; 3,000-4,000 developed campsites, both private and public; and a long ski season.

In addition to these natural attractions, programs sponsored by local Chambers of Commerce and outdoor-oriented organizations bring even more visitors.

A broad spectrum of recreation opportunities geared to identified demands is needed to ensure the viability of the local economy and lifestyle. The demand for different kinds of recreation has shifted in the past and will continue to do so. However, the overall recreation emphasis, the increase in visitation, and the need for a variety of recreational options have grown over the past fifty years and are expected to continue into the future.

The recreation resource on the Inyo National Forest will be discussed below under the following subheadings:

1. Developed Recreation - developed facilities, both public and private, on National Forest lands. These facilities include overnight, day-use, and interpretive facilities, but not alpine ski areas.

2. Dispersed Recreation - all those recreational activities on the Forest that are not directly tied to developed sites. Does not include wilderness recreation (see Wilderness).

3. Alpine Skiing - *this topic is handled separately in order to fully* identify the major land management opportunities and impacts it represents.

Some important relationships between these categories should be mentioned before each category is discussed separately.

Summer vs. Winter Developed Recreation: Most developed sites have historically been used only in summer. However, the recent dramatic increase in alpine skiing has generated an increase in many other winter activities as well (e.g., nordic skiing, winter camping, and organized snow play). These activities, in turn, generate potential year-round use of developed facilities. Developed sites can no longer be opened only in the peak summer season and closed for the rest of the year if the Forest is to respond to public needs.

Year-round use of developed sites is still limited and has generally occurred only where the investment has come from the private sector. Recent funding levels have resulted in shortening, not lengthening, the operating season of public sites. However, the demand for year-round use of recreation sites will continue to grow and will eventually affect the management of public facilities, as well as private ones.

Dispersed vs. Developed Recreation: The current trend in Forest Service recreation management is to encourage more dispersed use rather than construct more developed sites. This trend has evolved because developed sites are costly. However, the amount of dispersed recreation use on the Inyo National Forest is closely associated with the amount of overnight capacity available on both private and public lands in the area. Because the Eastern Sierra is located at least four or five hours by car from any major population center, most Forest visitors require overnight accommodations.

Dispersed recreation generated by local residents represents a very small part of total use.

If developed recreation on the Inyo were deemphasized, dispersed recreation would be deemphasized accordingly. If all developed sites were closed, the remaining dispersed use would amount to only 15 to 20 percent of the current level. The only way to increase dispersed use would be to increase overnight developed site capacity, both on and off the Forest.

Wilderness and Non-wilderness Dispersed Use: In recent years, limits have been placed on wilderness use. One might expect that these limits would result in more demand for non-motorized primitive recreation in non-wilderness areas on the Forest. This has not, however, been the case. Other areas do not have the same attractions, especially water, that are found in existing wilderness. Wilderness visitors who are unable to obtain a wilderness permit because quotas are full will probably seek another area with comparable attractions, rather than using non-wilderness lands on the Inyo.

Increasing Recreational Attractions: The trend in recreation-based economies has been to increase visitation by increasing the attraction of an area. However, most of the effort to attract more visitation is outside the control of the Forest Service. For example, Congress controls special land designations, such as wilderness or the Mono Basin National Forest Scenic Area; Chambers of Commerce sponsor or encourage activities in local communities; and the state controls the fish stocking program and constructs and maintains most of the roads within and leading to the area.

RECREATION: DEVELOPED

Issues, Concerns, and Opportunities

Many public issues have been raised with regard to developed recreation. The range of opinion spans the spectrum of an issue. Following is a summary of public opinion expressed during the Forest planning process:

- Recreation development is of concern to many people and of vital concern to some, especially to local area residents.

- The public is collectively interested in the entire range of development options.

- The resource values that attract recreationists to this area are extremely important and should rarely be compromised.

- The public is dissatisfied with the reduced use seasons and deteriorating facilities they have encountered in recent years.

Management shares the public's concern with many of the issues listed above. The Forest is also concerned with the fact that the supply of overnight facilities is falling behind demand, the fact that day-use facilities such as trails and interpretive sites are insufficient to meet needs, and the potential for major conflicts between recreational developments and other

resources and activities. Recreational opportunities could conflict with small hydroelectric development, geothermal development, and timber management in old growth red fir stands.

Small hydroelectric projects, as proposed, could reduce stream flows and affect riparian zones to the point that most of the recreational attraction along affected reaches of stream would be lost. The affected streams could include Lee Vining Creek, Convict Creek, McGee Creek, Rock Creek, Bishop Creek, and Big Pine Creek, all of which are now heavily developed and used for recreation. Many smaller streams could also be affected.

If the geothermal energy resource in the Mono-Long Valley KGRA were fully developed, a major industrial complex would be introduced into an area of heavy recreation use between the Mammoth and June Lake Loop concentrated recreation areas. The greatest potential for additional summer recreation site development on the Forest lies in the area being considered for geothermal development.

Most red fir stands on the Forest have not yet been logged, as timber management has historically focused attention on the Jeffrey pine forest. The red fir stands between Mammoth and June Lake offer some unique recreational opportunities, and the area could easily become a year-roundconcentrated recreation area. Recreational development would, however, conflict with full timber production in this area.

Another management concern is centered on the ability of the Forest to meet the public demand for recreational facilities. There is no program of new major recreation site construction on the Forest. The last major construction program occurred in the 1950s and 1960s. Private development in local communities meets part of the total demand for overnight accommodations. Such developments do not, however, meet the demand for campgrounds located near recreational attractions such as lakes and streams. Certain recreational residence tracts have been identified for gradual elimination to provide high quality land for public uses, such as campgrounds.

Finally, management is concerned that the development of new recreation sites will become less cost-effective as the less attractive sites are built. Few visitors would be willing to camp in the unshaded sagebrush without a major recreational attraction located nearby.

The Forest has the opportunity in this planning process to identify conflicts, analyze trade-offs, and establish management emphases and direction regarding many of these issues and concerns.

Background

The developed recreation resource on the Inyo National Forest includes all public and private recreation facilities on National Forest lands. These facilities are oriented toward overnight accommodation, day-use, and interpretation. The Inyo is already one of the most recreationally developed National Forests nationwide, and there are many opportunities for additional development.

Approximately 98 percent of public and private developed sites are located in concentrated recreation areas. These areas comprise approximately 47,000 acres, or two percent of the Forest land base. Because developed sites are concentrated in these areas, 65 percent of the non-wilderness dispersed recreation on the Forest takes place on the same acres.

A combination of factors attracts recreationists to these areas: outstanding scenery, the mountain environment and cool weather, lakes and streams with superb trout fisheries, a wide variety of recreational opportunities, and ease of access on high-standard paved roads.

Most concentrated recreation areas are water oriented. Many parallel the main streams flowing from the Sierra Nevada crest, while others surround major lakes. Of the following concentrated recreation areas, only the Inyo Craters-Deer Mountain, Shady Rest, and Cedar Flat-Schulman Grove areas are located away from water. All areas are located in the Sierra Nevadas with the exception of Hot Creek and Cedar Flat-Schulman Grove. The Sierra Nevada areas are listed in order from north to south.

Lundy Canyon	Convict Creek-Convict Lake
Lee Vining Canyon-Tioga Pass	Rock Creek
June Lake Loop	Bishop Creek
Glass Creek-Deadman Creek	Big Pine Creek
Inyo Craters-Deer Mountain	Independence Creek
Shady Rest-Sherwin Creek	Lone Pine Creek
Mammoth Lakes Basin	Hot Creek
Reds Meadow-San Joaquin River	Cedar Flat-Schulman Grove

Following is a summary of existing recreation and interpretive site developments by type, with their 1982 capacity in PAOTs (Persons At One Time) and 1982 use in RVDs (Recreational Visitor Days). Family campgrounds and resort lodges, together, account for the majority of capacity (57%) and use (76%).

The average annual occupancy rate for Inyo National Forest developed campgrounds theoretically represents about 29 percent of Forest-wide capacity if all campgrounds were managed for a 168-day open season. The actual occupancy rates are probably higher. Open seasons for some sites have been shortened over the past five to seven years to as few as 100 to 110 days, opening just before Memorial Day and closing the week after Labor Day. If an average Forest-wide use season of 130 days is assumed, the occupancy rate in 1982 would be about 37 percent. A rate of 35 to 40 percent is considered optimum for National Forests in this Region. Under this guideline, the Inyo is operating at optimum levels during the peak summer season.

If the demand for recreation sites increases as projected, however, new developed site capacity will soon be needed for the summer season. The potential for expansion or new development of recreational facilities varies with the type of facility. Approximately 43 percent of the identified potential campground units are already developed. Of those sites still undeveloped, 62 percent are located in existing concentrated recreation areas, while the other 38 percent are scattered elsewhere on the Forest.

Table 38
Public and Private Developed Sites
Current Capacity and Use

	Developed Acres	1982 Capacity Sites (#)	1982 Capacity (PAOTs)	1982 Use (MRVDs)
Observation Sites	11	5	158	4.5
Swimming Areas	26	2	745	7.8
Campgrounds (family)	755	69	11,945	1,142.7
Campgrounds (group)	39	14	958	35.3
Picnic Grounds	39	12	445	27.4
Interpretive Sites-Major	17	2	490	12.2
Interpretive Sites-Minor	68	15	2,255	29.4
Interpretive Sites-Admin.	3	3	130	3.2
Information Sites	10	9	272	3.4
Playground-Parks	12	1	50	2.4
Boating Sites	5	4	150	13.1
Motels, Lodgings, Resorts	137	23	3,623	273.1
Organization Camps	21	5	560	31.6
Concessionaires	102	26	1,500	57.8
Recreation Residences	180	27	2,198	209.6
Alpine Ski Areas (see Alpine Skiing)	-	-	-	-
Trailheads (see Wilderness)	-	-	-	-
TOTAL	1,425	246	25,479	1,848.5

The undeveloped potential campground sites are not as desirable for the user as existing units, because they are not as close to water or other desirable attractions. Many also lack vegetation for shade and screening. For these reasons the use of many potential campground sites is expected to be lower than that of existing sites.

The potential for additional day-use facilities varies with the kind of facility. The potential for additional swimming, boating, and playground-park facilities is very limited. Only Grant Lake in the June Lake Loop has some additional potential for water-oriented sites. There are more potential picnic sites, but considering the large number of campsites and the small number of local recreationists, picnic areas are in little demand. The potential for additional interpretive sites is virtually unlimited; many of these are not even included in the current inventory.

The potential for private resorts and concessions is fully developed with little opportunity for more facilities of the traditional types. The exception is in the area of RV parks, especially where they could operate year-round. The potential for RV park development as part of a resort is included in the following table in "family campgrounds".

There are 25 recreation residence tracts on the Forest. The lots in nine tracts are on tenure. Cabins were removed in the past to provide land for higher public uses, including public access to popular streamside zones.

Many additional tracts occupy sites or zones along lakes or streams that are suitable for improved access or more public use. Decisions about such uses will be made through the process of future use determinations, which will, in turn, be conducted when permits are reviewed for renewal. There is no opportunity to increase recreation residences, and no additional land will be allocated for recreational residences.

Table 39
Public and Private Developed Sites
Undeveloped Potential Capacity and Use

	Additional Capacity (PAOTs)	Additional Use (MRVDs)
Observation Sites	230	18.4
Swimming Areas	200	8.0
Campgrounds (family)	15,875	1,331.6
Campgrounds (group)	360	3.0
Picnic Grounds	1,030	33.8
Interpretive Sites-Major	--	--
Interpretive Sites-Minor	295	7.0
Interpretive Sites-Admin.	--	--
Information Sites	130	11.2
Playgrounds-Parks	150	10.0
Boating Sites	100	18.5
Motels, Lodgings, Resorts	150	11.0
Organization Camps	--	--
Concessionaires	35	0.2
Recreation Residences	--	--
TOTAL	18,555	1,443.7

The total amount of summer developed recreation use on the Inyo has changed very little in the last ten to fifteen years. Recreation use only increases significantly when capacity is added. Developed site capacity on the Forest has, in fact, dropped because of administrative and design controls intended to curb resource damage.

RECREATION: ALPINE SKIING

Issues, Concerns, and Opportunities

No new major public issues were raised during public involvement for the Forest plan, as the Mammoth-Mono Unit Plan, developed cooperatively with Mono County's community development plan for Mammoth (the MONOPLAN) in 1979, had addressed the key issues of the extent and location of future alpine ski area development.

Those issues have, however, arisen again with the County's updating of the MONOPLAN (since renamed the Town of Mammoth Lakes General Plan with the incorporation of Mammoth). The approved Final General Plan has expressed the desire for more ski area development than was projected by the original

MONOPLAN and Mammoth-Mono Unit Plan, and has indicated the priority in which the county and town would like to see potential ski areas evaluated for development.

An environmental analysis considering potential ski area development in the Sherwin Bowl area is currently being conducted outside this Forest planning process.

Management is concerned with the need to respond to the demand for more skiing. There are also several concerns related to the impacts of ski areas on visual quality, wildlife, soil stability, water quality and quantity, the local community, transportation patterns, safety, and the need for an expanding private land base. The Forest is, finally, concerned that community growth in response to increasing winter recreation use could negatively affect summer recreation sites on Forest land near growing communities.

The Forest has the opportunity in the Plan to identify potential ski areas, to establish priorities for development, and to moderate the management of other resources where the retention of ski area potential is considered desirable. There is also an opportunity to establish direction addressing the impacts of ski area development on other resources and activities.

Background

Two alpine ski areas currently operate on the Forest. Mammoth Mountain Ski Area operates 31 lifts on a permit area of 3,200 acres, has a current design capacity of 19,000 Skiers At One Time (SAOT), and attracted nearly 1.5 skier visits during the 1981-82 season. June Mountain Ski Area operates six lifts on a 1,440-acre permit area, has a design capacity of 3,000 SAOT, and has averaged 100,000 annual skier visits over the past few years.

Total development for June Mountain could expand the area to 1,500 acres and capacity to 7,000 SAOT. The approved Mammoth Mountain development plan would increase the area to 3,600 acres and 24,000 SAOT. The two areas are expected to build out to 31,000 SAOT capacity by 1990.

Mammoth Mountain Ski Area ranks first nationwide in the number of annual skier visits and provides more than fifty percent of the skiing opportunities on National Forest lands in Region 5. The quality of skiing on the Inyo is excellent due to the long season--November through May, or longer--snow depth, and range of difficulty of ski terrain.

Most visitors (83 percent) to both ski areas come from Southern California and use overnight accommodations in the Mammoth or June Lake areas. Alpine skiing represents the primary economic base for the community of Mammoth Lakes, with summer recreation secondary in importance. The economy of June Lake Village is more evenly divided between summer and winter use.

The five sites listed below, all in the Mammoth area, are considered suitable for ski area development. Eight other potential sites have been identified and eliminated in the past due to wilderness designation, conflicts with other resources, or economic factors.

Table 40
Potential Alpine Ski Areas

Name	Land Area	Estimated Capacity
Sherwin Bowl	2,400 acres	8,000 SAOT
Minaret Summit	1,300 acres	3,200 SAOT
Mammoth Knolls	3,800 acres	3,200 SAOT
San Joaquin	3,500 acres	14,000 SAOT
White Wing	1,500 acres	3,000 SAOT
TOTAL	**12,500 acres**	**31,400 SAOT**

The combined estimated alpine ski capacity of the two operating and five potential ski areas on the Forest is 62,400 SAOT on 17,600 acres. The SAOT estimates are based on the best available data. They could change as further studies are completed.

Ski area use on the Forest has increased by approximately 12 percent per year for the past ten years. The demand for skiing by Southern Californians appears to increase in direct proportion to increasing lift capacity. The demand for skiing on the Inyo is influenced by the limited capacity of ski areas in Southern California to expand. Mammoth Mountain currently attracts 50 percent of all Southern California ski use. That percentage is likely to increase as ski areas in Southern California reach capacity.

The recent 12 percent per year growth of alpine skiing is not likely to continue. Ski area and community development will probably slow down, and capacities will eventually be established. Maximum ski area development will ultimately depend on which factors emerge as the limiting ones. Limiting factors in the past have been community related. Sanitation, water supplies, and snow removal capability have been major problems. As those problems are resolved, others may take their place. It is quite possible that social, economic, and political factors in the base communities will prove more limiting to ski area development in the long run than the inherent capability of the land to provide skiing.

The Eastern Sierra, including the Inyo National Forest, is a region in which visual quality, soil stability, water quality, and water availability are extremely sensitive issues. Ski area development typically entails the removal of vegetation over large land areas and massive earth-moving efforts in the process of shaping ski runs. If ski area development proceeds on a large scale, major impacts can be expected. These impacts can be offset somewhat, but not entirely, by mitigation measures and careful planning well in advance of development with conscious awareness of the costs and logistical challenges involved.

The impacts created by community growth can also be major. Such impacts are outside of Forest Service control, though many of the impacts are felt on National Forest lands. Effects on Forest lands multiply as the population grows. There is, for example, an increasing demand for public land, both for

exchange into the private sector and for use under permit for facilities such as parks, schools, snow storage, water treatment, low-income housing, and golf courses.

RECREATION: DISPERSED

Issues, Concerns, and Opportunities

The range of public opinion concerning dispersed recreation is as varied as the range of activities. Each dispersed activity has its advocates. Some activities have opponents. Some issues arise from conflicts between users such as cross-country skiers vs. snowmobilers, hikers vs. equestrians, cyclists vs. motorists.

There is competition between wilderness recreation and other dispersed activities for some of the Further Planning Areas on the Forest, as certain lands now used for four-wheel drive and off-highway vehicle (OHV) recreation are being considered for wilderness designation. The term OHV refers to vehicles that are capable of traveling off two-wheel drive roads. These include four-wheel drive vehicles, three- and four-wheel all terrain vehicles (ATVs) and motorbikes. Snowmobiles are referred to as OSVs (Over-Snow Vehicles).

The public would like to see more trails outside wilderness for day hiking, horseback riding, OHVs, and handicapped use. The public desire for bicycle paths in heavily used areas such as the Mammoth Lakes Basin, the Shady Rest-Sherwin Creek area, and the June Lake Loop is expected to increase as cycling increases in popularity.

The need for dispersed winter recreation facilities is another public issue. The last five years have seen a dramatic increase in nordic skiing, and demand is expected to increase at an accelerated rate in coming years. The amount of nordic skiing in the Mammoth area is closely tied to alpine skiing. As alpine capacity is reached, skiers are forced to explore other winter sports options. The development of more nordic skiing facilities would constitute an additional attraction. The public also has an interest in additional marked snowmobile trails.

Management is concerned that facilities needed to accommodate dispersed day-use activities should receive higher priority than they have in the past. Non-wilderness trailheads and parking areas, bicycle paths, and shoreline trail maintenance to accommodate heavy foot travel are very expensive, but have no economic return. The expectation has always been that dispersed recreation can increase at very little cost. However, because such use on the Inyo is concentrated in the most desirable and sensitive areas, resource damage is occurring and will continue to occur unless appropriate facilities are developed.

The Forest has the opportunity in the planning process to analyze the range of dispersed recreation options and to establish management direction in the Plan that encourages and enhances dispersed use.

Background

The Inyo National Forest has a wide and varied range of dispersed activities that attract millions of Southern Californians to the Eastern Sierra. Dispersed recreation includes all recreational activities that occur outside of developed sites: hiking, fishing, public wood gathering, hunting, four-wheel driving, sightseeing, and nordic skiing are examples. Wilderness recreation is discussed separately under the heading of Wilderness; fishing and hunting are discussed under the headings of Fish and Wildlife respectively. Dispersed recreation use figures for 1982, including those categories, are listed below. (RVD = Recreation Visitor Day; WFUD = Wildlife and Fish User Day).

Table 41
1982 Dispersed Recreation Use

Wilderness use	540,000 RVDs
Non-wilderness fishing	340,000 WFUDs
Non-wilderness big-game hunting	25,200 WFUDs
Other wildlife-related recreation	25,800 RVDs
Dispersed other than wilderness and wildlife	1,004,000 RVDs
TOTAL	**1,935,000 RVDs and WFUDs**

The Inyo National Forest has, for analysis purposes, divided lands on the Forest into three categories based on the intensity of recreation use: concentrated recreation areas, open National Forest (other roaded lands), and unroaded lands.

Concentrated recreation areas contain most of the developed recreation sites. These areas cover 47,060 acres of very attractive, water-oriented lands, most of them located along the eastern slope of the Sierra Nevada. These areas are listed above under the heading of Developed Recreation. High levels of dispersed use such as hiking, water play, and driving for pleasure generate approximately 12.4 RVDs per acre per year in these areas, and fishing represents 5.7 WFUDs per acre. Sixty-three percent of current dispersed non-wilderness use on the Forest (including WFUDs) takes place on the two percent of the total land base found in concentrated recreation areas.

Open National Forest lands are roaded lands outside of concentrated recreation areas. Major summer activities in the open National Forest are primitive camping, driving for pleasure, wood gathering, hunting, and motorbike use. Winter activities include snowmobiling and nordic skiing.

Total recreation use in this category is about half of that generated in concentrated recreation areas, amounting to 1.3 RVDs per acre on 322,612 acres for a total of 408,410 RVDs. Hunting and fishing represent 0.1 WFUDs per acre on those lands. Little fishing takes place on these lands, as water is very limited. The most popular areas in this category are the forested

lands northeast of Mammoth Lakes, the Buttermilk area west of Bishop, the area east of Lake Crowley, and the roaded parts of the White and Inyo Mountains.

Unroaded lands include all non-wilderness lands on the Forest that are not accessible by constructed and maintained public roads. Most are accessible only by foot, horseback, or four-wheel drive vehicle. Lands in this category provide 13,373 RVDs on 1,008,548 acres at a rate of only 0.01 RVDs per acre per year. Hunting accounts for an additional 0.03 WFUDs per acre. Other uses include hiking, backpacking, fishing, sightseeing, and OHV use. This category includes most of the White and Inyo Mountains, Monache Meadows, portions of the Coyote Plateau, and most of the Glass and Excelsior Mountains. Little water is available, and recreational attractions are low on most of these lands.

The present level of dispersed recreation is 1,004,000 RVDs. Increases in dispersed recreation use are tied directly to the availability of overnight accommodations, both on the Forest and in neighboring communities. If management on the Inyo were to maximize dispersed recreation opportunities, the Forest could provide 3,389,000 RVDs (excluding wilderness use) by the fifth decade.

The Forest is capable of doubling dispersed use in concentrated recreation areas. In the open National Forest and on unroaded lands, the potential (land capability) for dispersed use exceeds the current demand for use in those land categories. The attraction of unroaded lands is especially low due to the scarcity of water for recreational activities or personal use.

Recreational access for vehicle-based dispersed recreation use is good overall. The Forest road system is virtually complete, and most roads could accommodate more use than they do at present.

There is, however, a major shortage of trails in concentrated recreation areas. Trails are needed to accommodate existing use and any increases in RVDs. Non-constructed fishermen's paths are eroding the soil and affect the vegetation in sensitive streamside zones. Hiking, equestrian, bicycle, interpretive, and handicapped trails should be addressed in future detailed planning for concentrated recreation areas. Approximately 180 miles of trail would be needed to meet the projected demand for recreation in those areas.

The Forest is a participant in the California State-wide OHV Trails Plan. This plan is a proposed Off-highway Vehicle Recreational Trails Plan to provide a comprehensive linear system of trail corridors, staging areas, and access points. State-wide off-highway vehicle trail corridors are conceptual in nature and have been located by analyzing the general relationship between California's natural resources, the recreation needs of off-highway vehicle users and accessibility to resource opportunities. The precise trail alignment within a corridor will be determined in coordination with appropriate federal and local agencies and interest groups as each incremental segment is selected for implementation.

Table 42
1982 Dispersed Use
(Excluding Wilderness and WFUDs)

Facility or Feature	Forest-wide Total Use (RVDs)	Concentrated Rec. Areas (RVDs)	(% of Total)	Open National Forest (roaded) (RVDs)	(% of Total)	Unroaded Lands (RVDs)	(% of Total)
Roads	546,200	300,410	55	245,700	45		---
Trails	84,300	43,365	55	32,034	38	5,901	7
Lakes	27,235	25,328	93	545	2	1,362	5
Reservoirs	10,164	10,164	100		---		---
Rivers and Streams	12,201	6,710	55	5,491	45		---
General Undeveloped	323,900	193,050	59.6	124,640	30.5	640	1.9
TOTAL	**1,004,000**	**582,027**	**50**	**408,410**	**40.7**	**13,373**	**1.3**
Outside Wilderness	**1,395,000**	**898,600**	**63.2**	**471,700**	**33.8**	**41,900**	**3**

The Inyo National Forest is in the process of analyzing a segment of the California State-wide OHV Trails Plan called OHV Route #5. This study is funded under a State Green Sticker Grant, and will be accomplished in conjunction with the Bureau of Land Management and the City of Los Angeles where that route might cross their lands. The study route starts near Olancha proceeding north on either the west or east side of the Owen's Valley to a point below Lone Pine. It then proceeds north through the Inyo and White Mountains, crossing the Valley north of Bishop through the Casa Diablo area and east of Mono Lake to a staging area near Larkin Lake. This route is only conceptual at this time, and an environmental analysis, with public involvement, will determine the selected route location.

Unroaded lands have great physical capacity for increased use. Existing trails (many of them old mining roads) serve most areas. However, most of these lands lack recreational attractions; water supplies are scarce, terrain is steep, and the sparse, shrubby vegetation provides little shade. For these reasons, little increased use can actually be expected. Existing primitive roads and trails are adequate for projected increases in use.

Nordic skiing is the fastest-growing dispersed use on the Forest, with 127,000 RVDs in 1982. The potential to improve public sector support facilities for nordic skiing such as ski trails and cleared parking areas is limited by a traditional lack of management emphasis on dispersed winter use. The private sector has expressed considerable interest in developing

nordic ski facilities on Forest land. Such facilities, especially if developed north of Mammoth in proximity to alpine ski areas, could go a long way towards meeting demand.

Most OHV use is generated by local residents. The demand for OHV activities and opportunities will continue to grow as the communities grow. This demand and related impacts will be greatest around the Mammoth community, where the resident population is recreationally oriented. The nature of OHV use will also change. An entire generation of young people has grown up participating in OHV activities that their parents never experienced. When these people establish families of their own, OHV use will become more of a family activity.

Most summer OHV use on the Forest is restricted to roads and trails. Only 97,000 acres of useable OHV terrain is designated open and available for off-road travel. Very little of this open acreage receives public use, as it is generally remote from population centers and low in recreational appeal. Although there are opportunities to expand the OHV travel system and open acreage, those areas with the greatest potential (lowest level of conflict with other resource uses and values) are likewise unattractive to OHV users.

More than a half-million acres on the Forest are currently open to OSV (snowmobile) use. Such use is currently limited only by wilderness designation, alpine or nordic skiing, mule deer or mountain sheep winter range, and areas with little or no snow. In general, the amount of snowmobile use on the Forest is minor.
Small hydroelectric projects, if developed as proposed, would severely reduce instream flow on 38 miles of stream. Streams are key attractions for the recreational visitor, especially in the otherwise arid environment of the Eastern Sierra. The proposed flows would be so low that most recreational values would be lost or reduced to a level that would drastically reduce the associated recreational use. Intakes, penstocks, power plants, and powerlines would occupy water-influence zones that are now totally oriented toward recreation and wildlife.

Geothermal development is a serious prospect in an area bounded by the Owens River on the east, Mammoth Lakes on the south and west, and June Lake on the north. This area now receives heavy dispersed recreation use throughout the year, and use is increasing significantly, especially during the winter months. Industrial complexes involving well sites, pipelines, power plants, and powerlines, could be spread throughout the core of this heavily used dispersed recreation area. Major restrictions on dispersed activities could result.

Finally, wind farms would have an impact on dispersed recreation. The degree of the impact would depend on the location. Wind farms are totally modified sites; they are fenced and represent an exclusive use of the land.

Dispersed use on the Inyo has grown at a rate of approximately seven percent per year over the past five years. The RPA projected growth rate for dispersed recreation is 5.9 percent for the 1985-1990 period. Demand projections for summer dispersed recreation are based on the assumption that developments (overnight accommodations) would be available to support increasing dispersed use. If developed site capacity were increased at a

rate of two percent per year in response to the projected demand for developed recreation, dispersed recreation would be expected to increase at a comparable rate.

Dispersed winter recreation is expected to follow increases in alpine skiing, estimated at four to five percent per year until 1990, and two to three percent per year after that into the fifth decade.

RECREATION: THE RECREATION OPPORTUNITY SPECTRUM

The Recreation Opportunity Spectrum (ROS) is a system that stratifies National Forest lands into different types of recreational opportunities, activities, and experience categories based on the size, the distance from roads, and the degree of development of any recreational area. This system is a tool used in the land allocation process associated with Planning. The seven ROS classes are: Primitive (P), Semi-Primitive Non-motorized (SPNM), Semi-Primitive Motorized (SPM), Roaded Natural (RN), Roaded Modified (RM), Rural (R), and Urban (U). See Chapter VIII, Glossary, for definitions of each class.

Current acres, recreation use, and recreation area capacity for each ROS class on the Forest are displayed in Tables 43 and 44. Information about each ROS class is divided into two subcategories: developed recreation and dispersed recreation.

The original ROS system had only six classes. The Inyo has chosen the option of splitting the Roaded Natural ROS class into two subparts: Roaded Natural (roaded with limited development) and Roaded Modified (roaded with moderate development). Heavily developed areas are classified as Rural.

Table 44 displays current acres and use by ROS class, as well as the potential supply in terms of both capacity and use. Although approximately 46 percent of the Forest is now classified as Primitive, the recreational capacity of those acres is low because of steep, inaccessible terrain, a lack of water, and a lack of recreational attractions. Even the addition of trails in the White and Inyo Mountains would not generate great increases in use. In addition, capacity controls (quotas) on designated wilderness would limit the amount of use and the ability of the Forest to meet demand.

The Roaded Modified and Rural classes include most of the lands with highly developed recreational opportunities such as camping and skiing. The potential supply of lands with these attractions is limited, and that supply would be exceeded by demand before the end of the next fifty years. Resource conflict and cost considerations also limit the opportunities to change lands from one ROS class to another.

Any ROS Class changes, however major the changes themselves, would not affect large acreages. Lands suitable for a shift to Roaded Modified or Rural ROS classes amount to less than one percent of the Forest land base. Extensive acres under wilderness designation and steep topography would limit the potential for lands to shift from Primitive and Semi-Primitive Non-Motorized toward Semi-Primitive Motorized or Roaded Natural. Unroaded suitable timber lands that could be roaded for timber harvest represent only a maximum of

30,000 acres, or less than two percent of the Forest. The greatest opportunities for potential changes would involve a shift from Semi-Primitive Non-Motorized to Semi-Primitive Motorized. However the demand for opportunities in the latter category are limited due to the distance from major urban areas. Most of the use in the Semi-Primitive Motorized class is generated by the small population of local area residents.

Acres in the Urban ROS Class category are heavily encumbered by nonrecreational developments. They are not typically suitable for Forest recreation use. It is expected that urban acreage would receive high priority for disposal through land exchange.

Table 43
Developed Recreation
(Public and Private Sectors)

ROS Class	Acres	Capacity (PAOTs)	1982 Use (MRVDs)
Primitive	3	75	2.0
Semi-Primitive Non-Motorized	0	0	0
Semi-Primitive Motorized	2	50	1.0
Roaded Natural	110	2,195	257.3
Roaded Modified	870	18,100	1317.9
Rural	3,730	25,750	1223.9
Urban	15	310	34.1
TOTAL	**4,730**	**46,480**	**2836.2**

Table 44
Dispersed Recreation
(Public and Private Sectors)

ROS Class	Acres	Capacity (PAOTs)	1982 Use (MRVDs)*
Primitive	872,600	4,290	493,350
Semi-Primitive Non-Motorized	392,600	4,050	76,850
Semi-primitive Motorized	189,200	2,500	21,300
Roaded Natural	383,600	62,900	395,000
Roaded Modified	35,100	34,900	494,700
Rural	11,600	15,050	87,300
Urban	2,000	0	0
TOTAL	**1,886,700**	**123,600**	**1,568,500**

* Does not include fishing or hunting WFUDs

Table 45
Supply and Demand by ROS Class

	P	SPNM	SPM	RN	RM	R	U
Existing Inventory							
Area (M acres)	870.6	392.6	189.2	383.6	35.1	11.6	2.0
1982 use (MRVDs)	495.4	76.9	22.3	652.3	1812.6	1311.2	34.1
Use coefficient (RVD/acre)	0.6	0.0	0.1	1.7	51.6	113.0	17.1
Potential Supply							
Capacity (PAOT)	6540	8500	9460	76720	63070	92000	N/A
Capacity coefficient (PAOT/acre)	0.01	0.02	0.05	0.2	1.8	7.5	N/A
Use (M RVDs)	1175.3	439.70	807.90	2992.1	4043.5	4524.0	N/A
Use coefficient (RVD/acre)	1.35	1.12	4.27	7.8	115.2	390.0	N/A

RESEARCH NATURAL AREAS

Issues, Concerns, and Opportunities

The public has raised the issue of the need to establish Research Natural Areas (RNAs).

Management is concerned with the task of establishing recommended RNAs and with the need to determine that all Regional targets for Botanical RNAs on the Inyo have been met once these areas are established.

There is an opportunity to respond to these issues and concerns in the Plan.

Background

The Inyo is responsible for meeting botanical RNA targets for eight vegetation types in two physiographic provinces. Five RNAs have been established, and two candidate RNAs have been screened by the Region 5 RNA Committee and have been accepted as meeting Forest targets for the vegetation types represented. Ecological surveys have been completed and boundaries proposed. With the establishment of these two candidate areas, the Inyo will have met all assigned botanical targets.

The planning regulations call for the consideration of geologic and aquatic RNA candidates as part of the planning process. As the Region is in the process of developing a target system for aquatic and geologic elements, the Plan will defer the consideration of those elements and identify the need to respond to targets once they are established. It is expected that the Inyo would have considerable potential for geologic RNAs.

The demand for RNAs by the general public and the scientific community has resulted in national and Regional RNA target systems. Selected areas are established and protected under federal law.
The following are the established and candidate RNAs on the Forest, discussed in terms of their research values and potential conflicts with other activities.

Harvey Monroe Hall (3,883 acres): Established 1933

Sierra Nevada - unique ecosystems (subalpine and alpine habitats).

This is one of the few locations in the Sierra Nevada where habitats between 10,000 and 12,000 feet elevation are easily accessible by road. That fact in itself is important for research purposes. In addition, the area is representative of alpine and subalpine habitats in the southern Sierra. The Hall area has been used for scientific studies for more than fifty years. Dr. John C. Merriam wrote in 1932, "this natural area may be one of the most significant opportunities for certain aspects of scientific research in this country." R.V. Stuart, Chief of the Forest Service, established the area the following year with these words: "There was complete agreement that the future value of the area for such [scientific] purposes undoubtedly transcended any other values or uses for which it might be dedicated."

The major potential conflicts with scientific values in this area would be mineral development on adjacent lands (the RNA itself is withdrawn from mineral entry) or possible wilderness designation. The area is in Further Planning status and will be considered for wilderness during the planning process. It is expected that wilderness designation would attract more recreation use to the area. Such use could potentially conflict with scientific studies.

Indiana Summit (1,162 acres): Established 1932

Basin Ranges - Jeffrey pine forest.

This area contains a virtually pure stand of Jeffrey pine and is part of the largest contiguous pure Jeffrey pine forest in the world. Surrounding lands are managed for commercial timber production. For this reason, the RNA serves as a valuable basis of comparison between managed Jeffrey pine stands and those allowed to follow natural processes. Thirty years ago, the American Museum of Natural History in New York City conducted studies in this area. Their Hall of Forests now contains a large diorama presenting a portion of the Indiana Summit Natural Area as a typical Jeffrey pine forest.

The major potential conflict with scientific values in this area is illegal public fuelwood gathering; however, steep terrain generally discourages vehicle entry.

Last Chance Meadow (660 acres): Established 1982

Sierra Nevada - foxtail pine forest.

This area contains a representative stand of foxtail pine within a half-mile walk from a paved road. This fact is important for research purposes.

Foxtail pine is a species of special interest to the scientific community; it has an unusual disjunct distribution, being found only in the southern Sierra Nevada and in the Klamath Mountains 300 miles to the north.
There are no major potential conflicts with scientific values in this area. The RNA is within existing wilderness, but is located well away from trails and campsites. Although some hikers may enter the area, the number is likely to be low.

Sentinel Meadow (1,897 acres): Established 1983

Basin Ranges - lodgepole pine and limber pine.

This area contains undisturbed lodgepole pine stands typical of the arid montane habitats of the Great Basin. The area is variable in slope, aspect, and exposure, thus containing numerous variations in lodgepole pine growth form and stand formation. There is also a small pure stand of limber pine.

The major potential conflicts with scientific values in the area are illegal public entry for fuelwood cutting and OHV use. Although steep terrain generally discourages vehicle entry, there are a few vulnerable points along the boundary.

White Mountain (2,004 acres): Established 1953

Basin Ranges - bristlecone pine forest.

This area contains an unusual pure stand of bristlecone pine. Bristlecones usually occur as a thin fringe near timberline in certain high mountain ranges. It is most unusual to find the species growing in a pure stand as extensive as this one. The stand in this RNA is considered a remnant of the vast forests that grew in the Great Basin when precipitation was more abundant than today.

The only major potential conflict with scientific values in this area is increased recreation use. The RNA is part of a Further Planning area being studied for possible wilderness designation during the planning process. It is expected that wilderness would attract greatly increased visitation.

McAfee Meadow (2,727 acres): Candidate

Basin Ranges - alpine fellfield.

The gently rolling plateau on the crest of the southern White Mountains has the largest area of accessible alpine steppe in the western United States. Although alpine vegetation in the Sierra Nevada, Cascades, and Rocky Mountains is adequately represented in RNAs on federal lands, alpine steppe in the Great Basin is not yet represented.

The major potential conflicts with scientific values in this area would be grazing (10 AUMs), use of an authorized helicopter test site within the proposed boundary, and wilderness designation with associated increases in recreation. The first two uses have already been terminated in preparation for establishment of the RNA. The question of wilderness designation will be resolved by the Plan.

Whippoorwill Flat (3,328 acres): Candidate

Basin Ranges - pinyon pine and limber pine.

This area contains a remarkably dense forest of pinyon pine, plus all of the plant associations typical of the middle and upper elevation regions of the southwestern Great Basin. In addition, several plants endemic to or rare in the Inyo Mountains are found within the proposed RNA. In recent years, scientists from the University of Arizona, the University of California, and the University of Colorado have been attracted by the plant communities represented in the area.

The major potential conflicts with scientific values would be mineral development and public woodcutting. Although the area is under analysis for possible wilderness designation, recreation use would not be expected to increase significantly even with the attraction of wilderness; there is little water, and terrain is extremely rugged.

RIPARIAN AREAS

Issues, Concerns, and Opportunities

The public has raised the issue of emphasizing the maintenance and expansion of riparian vegetation. The public is especially concerned with the impacts of livestock grazing, recreation, and water diversion on riparian areas.

Management is concerned about activities that could conflict with the riparian area-dependent values of wildlife, fish, vegetation, and water quality. The primary potential conflicts involve grazing, recreation (OHV use and developed sites), energy development (small hydroelectric and geothermal), and mineral activities.

Accelerated erosion in wet meadows, including active cutbanks and stream channel degradation, is of special concern. The problems are most severe in the White Mountains and on the Kern Plateau. It is believed that this situation stems primarily from overgrazing that occurred fifty years ago or longer. Even if all current activities in those areas came to a halt, accelerated erosion would continue, and many wet meadows would dry out over the next fifty years.

The encroachment of woody vegetation on wet meadows is another management concern. The fact that most of the wet meadow riparian habitat on the Forest is in wilderness limits the use of prescribed fire or other vegetative management practices to prevent or reverse such encroachment.

The Forest has the opportunity to establish and apply direction for managing riparian areas and for coordinating the management of those resources defined as riparian area-dependent with those that are not so defined.

The application of Best Management Practices (BMPs) for water quality will help protect riparian habitat. Where BMPs are not sufficient mitigation for major impacts such as water diversion, existing Forest Service policy would resolve conflicts in favor of riparian area-dependent resources. Where

accelerated erosion is a problem, the Forest has the opportunity to restore degraded wet meadows and to slow the erosion process (methods are described in the 1981 Forest Watershed Improvement Needs Plan). Riparian vegetation can be maintained or rejuvenated by prescribed burning, fertilization, and/or mechanical manipulation. Riparian condition can also be monitored so that situations that threaten that resource can be corrected before damage is severe.

Background

Riparian areas on the Inyo National Forest are associated with lakeshores, perennial and intermittent streams, and wet meadows. Aspen stands are also considered an element of riparian habitat on the Inyo, as they are associated with wet sites, even though those sites do not necessarily include surface water.

Riparian areas on the Forest encompass about 37,000 acres. Most of that acreage (26,000) is found in wet meadows above 8,000 feet elevation. There are only 1,100 miles of streams on the Forest. Streamside riparian vegetation on the Inyo typically forms a strip less than fifty feet from the bank on each side of the stream (100 feet total), except where the stream flows through a meadow (in which case the strip is wider). Lakeside riparian strips rarely extend more than 100 feet from shore. Approximately 80 percent of all riparian areas on the Forest are inside wilderness.

The plant species composition of a given riparian area depends primarily on the amount of water available, geomorphic characteristics, and elevation. Many streams below 6,000 feet in the eastern Sierra Nevada support riparian areas in which willows are dominant. Water birch mixed with willow is common in the middle elevations, ranging from 4,000-7,000 feet along streams with a low rate of flow. The Jeffrey pine-cottonwood type predominates on streams with the highest rate of flow. Black oak is found along streams on the south end of the Forest. Aspen occurs along streams at higher elevations. White alder occurs at higher elevations throughout the southern Sierra Nevada. Most wet meadows are dominated by sedges.

The condition of riparian areas on the Forest is reflected in the following 1982 inventory data. Of 26,000 acres of wet meadow inventoried, 90 percent were damaged or threatened with damage by accelerated erosion. Of fish-bearing stream miles inventoried, 35 percent were rated high in fish habitat quality, 34 percent medium, and 31 percent low. Of 320 stream reaches in the Golden Trout Wilderness evaluated for stream channel stability (using Region 1 methodology), 10 percent were rated good, 65 percent fair, and 20 percent poor.

The water resource and associated riparian vegetation in the watersheds of Mono Lake and the Owens River have been altered by more than a hundred years of irrigation, hydroelectric development, and water export. Of the approximately 529 miles of stream in the Mono Lake and Owens River watersheds, 466 miles are currently affected by water diversions. About 140 of these miles are within the Inyo National Forest boundary. The Forest has lost riparian vegetation, important fish and wildlife habitat, recreation opportunities, scenic quality, and wilderness values as a result of this alteration. Small hydroelectric applications have been filed for virtually

all streams on the Forest that are tributary to the Mono Basin or the Owens River.

The limited supply of dense and productive riparian vegetation, and its contrast with arid surroundings make it especially important to wildlife for food and cover. Riparian vegetation is also an important component of fish habitat quality, as overhanging vegetation keeps the water cool and roots hold soil in place, preventing sedimentation. Cattle graze more heavily in riparian areas than on the surrounding dry range. Recreationists seek these areas for shade and water as a relief from the hot, dry surroundings. Riparian vegetation provides scenic variety, as its lush green contrasts with the surrounding grays and browns of the desert landscape. Finally, riparian areas are subject to impacts by OHVs where vehicle routes cross streams, and in wet meadows where topography does not limit vehicles to established routes and where illegal use is a problem.

Existing hydroelectric projects have conflicted with riparian values in the past, and proposed new projects would conflict severely with such values if fully developed. The amount of water in a stream correlates with the width of the riparian strip: significant reductions in the flow regime can be expected to reduce the size of the riparian zone and to affect riparian area-dependent resources. Although geothermal facilities can be located away from riparian areas, surface water and/or groundwater removal associated with geothermal power generation could affect riparian vegetation from a distance.

In general, any kind of activity that disturbs the soil, changes the amount of available water, or alters the vegetation of a riparian area could conflict with riparian values. Roads and trails, campgrounds, timber harvest, and vegetation manipulation for domestic or wild animals all have the potential to affect riparian values. Likewise, fire suppression can be a problem, as fire suppression methods can damage soil and vegetation. Once they have been seriously damaged, riparian areas are difficult to rehabilitate.

The demand for riparian area-dependent resources is expected to increase dramatically, especially because riparian values serve as a recreational attraction and the demand for recreation is increasing.

SENSITIVE PLANTS

Issues, Concerns, and Opportunities

The public has taken an interest in threatened and endangered plant species and in the survival of all native plant species, regardless of status. The local chapter of the California Native Plant Society has expressed interest in how implementation of the Inyo National Plan will affect native plants in the area.

Management concerns include: protection of sensitive plant species until viable populations are achieved and delisting is possible, while managing for other resources; and identifying and protecting potential sensitive plant habitats until inventories of these areas are completed.

While existing direction is not in need of change, the Forest is presently in the process of developing a Sensitive Plant Management Plan that will clarify program objectives and establish a priority setting system for each species.

Included in this plan will be the identification of field survey, population mapping, reporting and approval procedures, a description of monitoring techniques, a species management guide outline, and guidelines for developing recovery plans.

Background

Habitat occurs on the Forest for twenty-two plant species currently listed as sensitive. Of the species, sixteen have current sightings and information while six others are known only from historical herbarium records. One species has a management guide, eleven have an interim recommendation document, four are new additions to the sensitive plant list, and the other six are those with only historical data. Nine species are found in areas where normal Forest activities and projects have the potential to create direct or indirect impacts. The others are in classified wildernesses. Eight species are endemic to National Forest lands. None of these is federally listed as threatened or endangered, but two are proposed for federal listing. Four species have been listed by the State of California as rare and one is in the process of being listed by the State of Nevada as threatened.

Known populations of sensitive plants on the Forest cover about 6,800 acres. Although the condition of sensitive plant habitat varies by species and population, it is generally fair to excellent Forest-wide.

Current policy dictates that all project sites be surveyed for sensitive plants and that a clearance be granted before vegetation is disturbed. In a few cases, sensitive plant populations have been fenced to exclude activities which might affect the plants. In most cases, however, project locations are moved as necessary to avoid known populations.

Sensitive plant species and their potential conflicts with other activities are listed in Table 46.

Table 46
Sensitive Plant Species on the Inyo

Species	Potential Conflicts
Abronia alpina	Livestock trampling and hikers.
Arabis pinzlae	Hikers (small chance).
Arabis tiehmii	None.
Astragalus monoensis	OHVs, sheep, geothermal, snowmobiles.
Astragalus ravenii	Hiker and packstock.
Caulostramina jaegeri	Dispersed camping, OHVs, mining.
Cryptantha roosiorum	Dispersed camping, OHVs, grazing.
Dedeckera eurekensis	Mining.
Draba asterophora asterophora	None.
Draba cruciata integrifolia	None.
Eriogonum ampullaceum	Sheep, seasonal road grading.sheep
Eriogonum wrightii olanchense	None.
Hackelia brevicula	Cattle, OHVs, road grading.
Hackelia sharsmithii	None.
Lupinus padre-crowleyi	Cattle, hikers, road grading.
Lupinus sublanatus	Construction, land exc., OHVs.
Pedicularis crenulata	Fishermen, Convict dam maint.
Phacelia monoensis	OHVs, mining.
Phacelia nashiana	Cattle, OHVs.
Sclerocactus polyancistrus	Road const., OHVs, theft, mining.
Streptanthus oliganthus	Mining, road grading.
Trifolium dedeckerae	Cattle, road grading.
WATCH LIST #1. Those plant species needing more information for evaluation.	
Arctostaphylos urva-usi monoensis	Trails.
Astragalus johannis-howellii	
Astragalus kentrophyta elatus	Recreation users.
Astragalus lentigenosus kernensis	None known.
Calochortus excavatus	Grazing.
Draba cana	None known.
Dryopteris felix-mas	None known.
Elymus scribneri	Cattle, OHVs.
Eriogonum nutans nutans	
Festuca arizonica	
Kobresia myosuroides	None known.
Oryzopsis micrantha	None known.
Oxytropis deflexa sericea	Grazing.
Populus angustifolia	Lack of water.
Salix brachycarpa	Camping, trails.
Salix nivalis	Ptarmigans.
Scirpus rollandii	None known.

SPECIAL INTEREST AREAS AND NATIONAL NATURAL LANDMARKS

Issues, Concerns, and Opportunities

Public issues center on the need to establish Special Interest Areas (SIAs) to protect archaeological sites, habitat for threatened and endangered species, and areas with botanical, geological, or scenic values.

Management concerns include the need to identify candidates for SIA designation and to evaluate National Natural Landmark (NNL) candidates.

Background

The only existing Special Interest Area on the Forest is the Ancient Bristlecone Pine Forest Botanical Area. This area encompasses 28,887 acres in the White Mountains and is managed with an emphasis on natural history interpretation and scientific research. This area is internationally significant, as it contains the world's oldest living tree and has been the site of important tree-ring dating (dendrochronological) studies.

The Botanical Area is withdrawn from mineral entry and is isolated geographically from timber harvest, intensive range management, and intense recreation use. The only people who visit the area are those specifically attracted by the Special Interest Area, typically those who have scientific interest in the ancient bristlecone pines. Due to these factors, and to limitations stipulated in the management plan for the botanical area, there is little concern that Forest management would have adverse impacts on the area under any alternative.

Interest in considering the establishment of additional Special Interest Areas on the Forest has focused on potential geologic areas. Outstanding geologic features are found throughout the Forest. "Textbook examples" of volcanic, metamorphic, and glacial geology attract large numbers of students and scientists to the area. Of a preliminary inventory of sixty geologic features on and near the Forest, the following eight have been selected as candidates for further evaluation because of their unique characteristics.

1. Papoose Flat granitic intrusion
2. Granitic domes in the Buttermilk area and on Egypt Creek
3. Hot Creek
4. Starkweather Lake glacial polish
5. Tioga Tarns
6. Inyo Craters group: Inyo Craters, Deadman glass flow, Obsidian Dome, Devils Punchbowl
7. Earthquake Fault
8. Convict Lake/lower Convict Creek (including moraines).

The Forest intends to evaluate these candidates and to make recommendations to the Regional Forester for possible designation during Plan implementation. The Forest has identified no candidates for scenic, archaeological, or zoological areas to be evaluated at this time.

The Department of Interior has developed a listing of National Natural Landmarks (NNLs). NNL designation of an area does not change its management

jurisdiction or affect how the area is managed. For example, if the White Mountains were designated as a National Natural Landmarks, the area would continue to be managed by the Forest Service under the direction specified in the Plan.

Following is a preliminary list prepared by the National Park Service of possible NNLs on the Forest. The right-hand column indicates any existing Congressional or administrative designations affecting the area.

Table 47
Potential NNL Candidates Identified by National Park Service Theme Studies

Name	Existing Designation(s)
1. White Mountains	McAfee Meadow Research Natural Area (RNA), White Mountains RNA, Ancient Bristlecone Pine Forest Botanical Area
2. Mono Lake and Mono Craters	Mono Basin National Forest Scenic Area
3. Indiana Summit	Research Natural Area
4. Monache Meadow vicinity	None
5. Harvey Monroe Hall	Research Natural Area
6. Last Chance Meadow	Research Natural Area, Golden Trout Wilderness
7. Long Valley	None
8. Mono Mesa	Feature not known
9. North Fork Oak Creek	None
10. Olancha Peak	Golden Trout Wilderness
11. Onion Valley	None
12. Ritter Range	Ansel Adams Wilderness
13. San Joaquin Ridge	None
14. Sentinel Ridge	Research Natural Area
15. Shingle Mill Bench	Feature not known
16. Aberdeen volcanic field and vicinity	Not on National Forest land
17. Alabama Hills	Not on National Forest land
18. Banner Springs Bunchgrass Area	Feature not known
19. Convict Creek	John Muir Wilderness (upper canyon)
20. Coyote Ridge and Coyote Flat	None
21. Division Creek	None
22. Glass Mountain	None

Most of the potential candidates listed in Table 47 receive recognition under current management; others have been identified for evaluation as potential Special Interest Areas.

TIMBER

Issues, Concerns, and Opportunities

The public has raised a number of issues relative to timber management. The most significant of these issues among local area residents is the availability of fuelwood for public use. Some parties even suggest that the Forest Service provide or encourage the development of woodlots for fuelwood production.

The residents of Mono and Inyo Counties rely heavily on National Forest lands for fuelwood, due to the isolation of the counties and the corresponding unavailability of fuelwood from other sources. The length and severity of winters at higher elevations in the area trigger public concern about the cost of home heating. A cord of public-use fuelwood, which currently costs $5.00, would heat an average-sized house for two months. Gas or electricity to heat the same house would cost approximately $500 for two months. This difference in cost is the primary reason the public raises an issue about fuelwood availability.

The Inyo National Forest has the opportunity to meet the demand for public-use fuelwood by making logging residue available to the public, by allowing the public to cut wood in pre-commercial thinning areas, and by allowing the public to collect dead and down material on most Forest lands. If demand greatly exceeded the supply from these sources, the Forest could consider selling individual trees to the general public as well as to commercial fuelwood operators. The Forest Service can provide technical expertise and leadership in the establishment of woodlots on private land, but woodlots are not considered a suitable use of National Forest land.

Most of the remaining issues were raised by individuals and groups from other areas, and were addressed broadly to all National Forests in the Region. The only one of those issues that dealt with problems appropriate to timber management on the Inyo was the need to integrate silvicultural practices with other resource needs. The issues of managing old growth timber and riparian areas for values other than timber production are addressed under the headings of Wildlife and Riparian Areas respectively.

Control of competing vegetation, especially if control entails the application of herbicides, is a national public issue. It is not, however, a major issue on the Inyo National Forest, as the arid climate and soil productivity levels on most timbered parts of the Forest prevent the rapid and abundant growth of brush and grasses that would be expected to compete with tree seedlings for survival and growth.

Region 5 (the Pacific Southwest Region) is preparing an EIS on Vegetation Management for Reforestation, which addresses the full range of alternative methods for control of competing vegetation, including mechanical, biological, and chemical methods and prescribed fire. Selection of any particular 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 alternative methods. Herbicides will be selected only if their use is essential to meet management objectives. Past experience on the Inyo indicates that herbicide application would be minimal (affecting less than

300 acres per year at most) under any timber management scenario. Aerial application of herbicides is extremely unlikely to occur.

The primary management concern on the Forest is the need to establish a timber management program that meets the long-term sustained yield capacity of the Forest and meets the requirement of non-declining even flow.

Many factors influence the ability of the Forest to increase timber outputs and to meet timber policy requirements. The first of these is the type of harvest applied to commercial timber lands. The Inyo has, in the past, emphasized intermediate (partial) harvest on large acreage to meet its timber output goals. The main reason for this practice has been the desire to minimize impacts on other resources, primarily recreation and scenic quality. The result has been large areas of partially cut, mature stands that fall well short of optimum productivity.

The alternative to intermediate harvest is regeneration harvest (using cutting methods that remove most or all of the trees from a given site and thus promote vigorous regeneration of young trees). Unless the Inyo makes effective use of regeneration harvest, as directed by the current Timber Management Plan, the Forest may not be able to maintain current timber output levels while meeting the requirements of long-term sustained yield and non-declining even flow.

There is also a need to decide which lands will be managed for commercial timber production and which forest management system will be used. The Inyo provides many high quality recreation opportunities, has a greater than average density of cultural sites, provides critical habitat for local wildlife, and provides summer rangeland essential to local ranching operations. Timber management aimed at high levels of commercial production is not necessarily compatible with these other resources and activities. The potential yield currently calculated for the Forest assumes that timber management will occur on a given number of acres. However, significant amounts of land within the timber base may be less valuable for timber production than for other uses.

Departure from the non-declining even flow requirement is not a concern or issue on the Inyo. The Inyo is not a significant contributor to Regional timber targets; thus, departure on the Inyo could not significantly affect achievement of these targets. In addition, due to the overall existing condition of timber stands on the Forest, departure would not be expected to significantly reduce or prevent mortality losses nor to greatly improve timber age or size class distribution.

There are two systems of forest management to choose from: even-aged management and uneven-aged management. Factors influencing the decision of which system to use with reference to adequate regeneration are the reliability of the system, based on research results and the results of past practices; and the suitability of the system to the timber types on the Forest.

The Forest has the opportunity to address these factors in the planning process. Regeneration harvest can be emphasized over intermediate harvest, timbered areas where other resources are more valuable than timber production

can be identified, timber management practices on those lands can be modified, and predicted harvest volumes can be adjusted accordingly.

The second management concern is the need to improve the health and vigor of timber stands in areas with a recreation management emphasis. Many timber stands in recreation areas show evidence of stress from several factors, including pests and overstocking. Such stands will be highly susceptible to increased pest-related damage unless brought under management. The Forest has the opportunity to manage timber in recreation areas without reducing aesthetic and recreational values. Silvicultural prescriptions can be written to improve the health and vigor of these stands and to maintain them in good condition for the future.

A third concern is the need to determine the appropriate management of the Forest's extensive pinyon-juniper woodlands. Although the productivity of pinyon-juniper sites is presently being studied, little data is yet available on the subject. These lands are currently managed for wood products only by making dead and down trees available to the public for fuelwood. Pinyon-juniper lands may well have value for resources other than timber. There is an opportunity in Forest planning to analyze opportunities, establish direction, and identify research needs related to pinyon-juniper woodlands.

A final concern is the need to assess the impacts of public wood gathering on other resource values. This concern is addressed under the heading of Wildlife.

Timber Types and Location

Tentatively suitable timber stands are found in two general locations on the Inyo National Forest: on the north half of the Forest (south of Mono Lake and north of Mammoth Lakes) and at the south end of the Forest (near Monache Meadows on the Kern Plateau).

The species presently managed on the Inyo for commercial wood products are Jeffrey pine, lodgepole pine, red fir, and white fir. Subalpine forests, pinyon-juniper woodlands, and hardwood stands in riparian areas are the non-commercial forest types on the Inyo.

The Jeffrey pine forest occurs between 7,000 and 10,000 feet elevation. This forest type may have varying amounts of intermixed lodgepole pine and red and/or white fir. The average timber productivity site in Jeffrey pine is Meyers site index 60. Jeffrey pine stands occupy a total of 71,007 acres, or 63.7 percent of the timber base. Jeffrey pine in the area has been harvested for sawlogs since the early 1880s.

Although the lodgepole pine forest occurs from 7,000 to 12,000 feet in elevation, those stands capable of producing commercial quantities of wood are generally found between 8,000 and 10,000 feet. Lodgepole pine stands may include Jeffrey pine and red and/or white fir. The average timber productivity site of this type is Dahms Site Index 40. The extremely poor growth form of most lodgepole pine on the Forest precludes harvesting for sawlogs; however, the species is harvested and sold for fuelwood. Lodgepole pine stands occupy 19,372 acres, or 17.3 percent of the Forest timber base.

Jeffrey pine and lodgepole pine have a low tolerance for shade, so most stands grow naturally in even-aged groups. Many existing stands on the Forest are mature to over-mature. The average growth rate within these types is significantly below potential, primarily because past timber harvest practices relied on natural regeneration. Natural regeneration was unsuccessful, resulting in understocked stands with low growth per acre. Stands of this type are high priority for regeneration.

The red fir type occurs from 9,000 to 11,000 feet, with most of the commercially productive stands below 10,000 feet. Red fir grows in nearly pure stands with an occasional white fir, Jeffrey pine, or lodgepole pine. The average timber productivity site is Schumaker Site Index 30. Red fir on the Inyo occupies 21,169 acres, or 19.0 percent of the timber base.

Under natural conditions, the red fir type perpetuates itself in even-aged stands. However, the shade-tolerant nature of both red fir and white fir has led to the development of some even-aged stands with two distinct age classes. This condition usually occurs when some trees in the stand begin to die, allowing enough sunlight on the forest floor to sustain new seedlings. Fir stands can be better managed by using regeneration cuts that allow partial sunlight on the forest floor such as shelterwood or strip cutting, than are the pines, which require full sun. A managed red fir forest would have greater age class diversity than a natural forest.

Some red fir has been harvested for sawlogs, in those areas where natural reproduction was seen as adequate. However, most pure red fir stands on the Forest have not yet been entered for timber harvest. Red fir has not been in high demand on the wood products market, and there was some question about the ability of silviculturists to regenerate that species under conditions found on this Forest. However, in 1979, the Inyo National Forest began experimenting with small clearcuts (less than ten acres) in red fir in order to determine the ability of the Inyo to regenerate that timber type successfully. Good survival and growth of planted seedlings have been achieved. It appears that the regeneration of red fir using small clearcuts in combination with planting is a viable silvicultural option on the Forest.

The subalpine forest occurs above 12,000 feet and contains lodgepole pine, mountain hemlock, western white pine, whitebark pine, limber pine, and foxtail pine. The subalpine type is the least productive on the Forest, with a timber productivity rating of Dunning Class V. Subalpine stands do not meet the minimum suitability criterion of producing twenty cubic feet per acre of new wood per year.

The pinyon-juniper type occurs from 5,000 to 8,000 feet in elevation. Stands vary from pure pinyon pine, through pinyon pine-juniper associations, to pure juniper. Pinyon-juniper sites do not reliably produce twenty cubic feet of wood per acre per year. Some harvesting for fuelwood, posts, and poles has taken place in the past, and these species are currently an important source of fuelwood for local communities. There are no plans to manage either species for commercial products during the planning period.

Oak, aspen, cottonwood, birch, willow, and alder are not suitable for commercial production on the Inyo.

Logging Systems

Nearly all sawlog harvesting on the Inyo National Forest is accomplished in winter by ground-skidding over-the-snow. Only fuelwood sales and emergency salvage sales may be harvested over bare ground due to their small size and/or urgency. No aerial harvesting in use, nor is it expected to occur in the foreseeable future due to economic considerations and physical feasibility.

Over-the-snow logging is practiced to protect soil, ground vegetation, and water quality. As a result of Memoranda of Agreement with the appropriate state agencies, over-snow logging is also considered adequate protection for certain types of cultural resource sites. These memoranda minimize the amount of land that needs to be taken out of production in order to protect cultural values. Finally, winter logging reduces potential conflicts between timber management and recreation use of the Forest.

Openings

The NFMA regulations and the Regional Guide call for a 40-acre limit on the size of openings created by timber management activities. The current practice on the Inyo is to limit clearcut openings to 20 acres or less. The impact of this size on timber yields is negligible.

Capability, Availability, and Suitability

Not all forested land is biologically capable of, or physically suitable for, producing regular crops of industrial wood. In addition, some of the lands which are both capable of timber production and suitable for it are not statutorily available.

Land is considered incapable of producing timber if it is not physically and biologically able to produce industrial quality wood at a rate of 20 cubic feet per acre per year. Land is unavailable if it has been administratively or congressionally withdrawn from timber production, such as in Research Natural Areas or Wilderness. Land is considered unsuitable if there is not reasonable assurance that the land can be restocked to acceptable standards within five years after final harvest or if technology is not available to produce and/or harvest timber without irreversibly damaging soil productivity or watershed conditions.

Individual timber stands are combined, for planning purposes, into groups with similar characteristics in terms of species, tree size, and stand density. These groupings are referred to as timber types or strata. The nine recognizable strata on the Forest are listed below.

L3P - Lodgepole pine; crown diameter 12-14 feet; 20-39% crown closure.

P2G - Jeffrey pine; crown diameter <12 feet; 70-100% crown closure.

P2P - Jeffrey pine; crown diameter <12 feet; 20-39% crown closure.

P2S - Jeffrey pine; crown diameter <12 feet; 10-19% crown closure.

P4P - Jeffrey pine; crown diameter 24-40 feet; 20-39% crown closure.

P4S - Jeffrey pine; crown diameter 24-40 feet; 10-19% crown closure.

P6G - Jeffrey pine; two distinct size classes: overstory with crown diameter 24-40 feet and understory crown diameter <12 feet; both 70-100% crown closure.

R4X - Red fir; crown diameter 24-40 feet; variable crown closure.

R6G - Red fir; two distinct size classes as Jeffrey Pine (P6G).

Forest Management Systems

Congress has directed the National Forests to determine the long-term sustained-yield capacity of the Forest to produce timber under different levels of management intensity and to develop a base harvest schedule that will lead to a regulated forest (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). These tasks involve the adoption of a forest management system.

Two management systems are commonly considered: uneven-aged management (trees of all ages growing intermingled on each acre of land) and even-aged management (all trees within a stand the same age). The Inyo National Forest has favored even-aged timber management because that system is well supported by scientific research and years of practice throughout the western United States. In addition, even-aged management is the system that best approximates natural regeneration patterns in timber types on the Inyo. The system of uneven-aged management, on the other hand, is not well tested or substantiated by scientific study in the relatively dry environment of the Eastern Sierra Nevada. However, the uneven-aged system needs to be tested for possible future application.

For a more detailed discussion of silvicultural systems, see Appendix D.

The following tables summarize the capability, availability, and suitability, by stratum, of lands on the Inyo National Forest.

Table 48
Lands Tentatively Capable, Suitable, and Available for Commercial Timber Management

Stratum	Total Capable and Suitable Timber Lands (acres)	Unavailable Timber Lands (Wilderness and RNAs) (acres)	Net Suitable and Available Timber Lands (acres)
L3P	27,869	8,644	19,225
P2G	11,646	287	11,359
P2P	31,538	3,424	28,114
P2S	12,095	3,167	8,928
P4P	11,103	5,336	5,767
P4S	6,603	2,312	4,291
P6G	13,409	1,400	12,009
R4X	23,424	13,801	9,623
R6G	35,520	24,135	11,385
TOTAL	173,207	62,506	110,701

Table 49
Forested Lands Not Capable of or Suitable for Commercial Timber Production

Stratum	Incapable (Less than 20 Cubic Ft/Yr) (acres)	Unsuitable (Regeneration Not Assured) (acres)	Total (acres)
L3P	188,025	1,491	189,516
P2P	6,445	3,468	9,913
P2S	10,442	17,592	28,034
P4P	1,346	900	2,246
P4S	3,465	1,444	4,909
P6G	2,521	384	2,905
R4X	3,538	3,419	6,957
R6G	7,251	1,202	8,453
Other (pinyon-juniper, sub-alpine)	260,067	0	260,067
TOTAL	483,100	29,900	513,000

Current Management

The current Inyo National Forest Timber Management Plan (1967) projects an average annual potential timber yield on the north half of the Forest of 11.5 MMBF. Actual timber sold in recent years has averaged 10.5 MMBF per year. There is no current timber management plan for the south end of the Forest. However, the potential yield in that area is estimated to be 1.5 MMBF.

The 1967 Timber Management Plan is based on a commercial timber base of 91,500 acres (not including the Monache Meadows area on the Kern Plateau). These acres are divided into three categories: standard component, special component, and marginal component. Although lands in the first two categories are certain to meet the NFMA capability criteria listed above, lands in the marginal component may not meet those criteria.

The current timber plan favors even-aged management. Practices that are applied under this management system include: regeneration harvest (clearcutting and shelterwood cutting), intermediate harvest, site preparation, planting, release, precommercial thinning, and fuel treatment. These practices are defined in the Glossary, Chapter VIII.

Supply and Demand

The Inyo National Forest has been supplying lumber and fuelwood to the local area since the 1800s. However, the Forest's overall contribution to the lumber industry is relatively small. There are no local sawmills; however, sawmills in Gardnerville, Nevada and Loyalton, California depend upon logs from the Inyo National Forest, particularly since the Inyo conducts winter logging, providing timber at a time when other sources to the mills are not available. The current annual harvest is 10.5 MMBF.

In contrast, the local fuelwood industry and the public are almost entirely dependent upon the Inyo for their local fuelwood supply. The Inyo currently sells approximately 4,000 cords of fuelwood per year to commercial operators and 6,000 cords per year to the public.

The demand for sawtimber from the Forest cannot be predicted from historical sales trends. Since all timber offered for sale during the last decade has been sold, we can only conclude that supply has not exceeded demand. In addition, the Inyo has relatively little uncut volume under contract (less than two years' sell volume) and has had no sales turned back. All these indicators lead to the conclusion that sawtimber from the Inyo is in high demand relative the other National Forests in California.

The demand for fuelwood varies somewhat with the severity of the winter, but seasonal variation is less significant than a general correlation of demand with population. The demand for fuelwood is expected to continue growing in direct proportion to population growth.

Current evidence indicates that the demand for both sawlogs and fuelwood will increase into the foreseeable future.

Below-cost Sales

Over the period 1979-1984, timber sale revenues exceeded timber costs by more than $1 million for the period as a whole. However, in three of the six years, revenues were less than costs. This occurred when markets were weaker than normal, which caused both harvest volumes and prices received to decline. Timber market and sale program fluctuations often distort comparisons between revenues and costs for individual years because costs are incurred for projects that may not yield revenues until later years.

VISUAL RESOURCES

Issues, Concerns, and Opportunities

The major public issues and management concerns are that the visual quality values on the Forest be identified and evaluated and mitigation measures be developed to ensure the continuation of a high quality visual resource.

The Forest needs to respond to these issues and concerns in the Forest planning process. The Forest has the opportunity to maintain a very high level of visual quality, as only about six percent of the land base has received major impacts.

Background

The visual resource, as a key attraction for recreation visitors to the Eastern Sierra, is a primary value on the Inyo National Forest. Both visitors who spend time here and those who pass through on their way to other places are attracted to this area by the magnificent scenery. The predominance of recreation as a source of income in the Eastern Sierra is based, at least partly, on the unique natural scenery of the area.

The scenic quality of the landscape is composed of 10,000-foot escarpments; deep, dramatic canyons; mountain lakes, streams, and meadows; and extremely high visibility due to the steepness of the terrain and the lack of screening vegetation.

Visual quality in the Eastern Sierra has declined somewhat over the past 100 years, as human activities have encroached on the natural appearance of the landscape. Structures and associated ground disturbance have had the most significant visual impacts on the Inyo (unlike many National Forests, where logging has had the greatest impact). Sources of visual impacts include mineral developments, recreation facilities, hydroelectric developments, highway construction, and community development. The primary visual impacts of the past ten years have been ski area development and related community growth.

Major potential future visual impacts include additional ski areas, community growth, and energy development. Both Mammoth Mountain and June Mountain Ski Areas have room for growth within the existing permit areas. As many as five additional ski areas could also develop in the same general area. The communities of Mammoth Lakes and June Lake are expected to grow in response to additional skier capacity.

If all potential energy projects are developed as proposed, they will generate more visual disturbance than all earlier human impacts on the Forest. Proposed energy projects include geothermal, hydroelectric, and wind power generating developments. Such projects could be large and numerous, and each project would include many structures (e.g., buildings, pipes, powerlines). Vegetative and topographic screening in the affected areas would not be adequate to meet current Visual Quality Objectives if projects are fully developed.

The only significant potential visual impact related to timber management would be the harvesting of red fir in heavily used recreation areas.

Supply - Variety Class

The quality of scenic resources can best be expressed by the concept of Variety Class. Landscapes in Variety Class A include such features as mountain peaks, streams, lakes, meadows, rocky outcrops, riparian vegetation, fellfields, unusually steep terrain, and unique land forms. Variety Class B scenery typically includes forested lands on rolling terrain with a few vegetative or topographic variations. Variety Class C lands are are generally expansive and brush-covered with little variation. The Inyo is part of the Sierra Nevada and the Desert-Desert Mountain landscape provinces. Although much of the latter province contains vast expanses of Class C scenery, very little land in this category is found on the Inyo. The following table summarizes the scenic variety of Inyo National Forest lands.

Table 50
Inyo National Forest Lands
by Variety Class

Variety Class	Description	Acres	Percent of Forest
A	Distinctive	832,000	44
B	Common	906,500	48
C	Minimal variety	146,200	8

Supply - Sensitivity Level

Sensitivity is a measure of the human concern for scenic quality as seen from a given observation point. The sensitivity of an area depends upon its use (how many people use it and for what purpose) and upon its visual qualities (what is seen and how closely it is viewed). Most Inyo National Forest lands are visually sensitive, due primarily to the visibility of the landscape and the large amount of wilderness. An indication of this sensitivity is the fact that most state and federal highways in or adjacent to the Inyo National Forest are existing or potential state-designated scenic highways. The following table summarizes the visual sensitivity of Inyo National Forest lands.

Table 51
Inyo National Forest Lands
by Sensitivity Level

Level	Relative Sensitivity	Acres	Percent
Level 1 & wilderness	Most sensitive	1,426,700	76
Level 2	Moderately sensitive	170,000	9
Level 3 & unseen lands	Least sensitive	288,000	15

Supply - Visual Quality Objectives

A Visual Quality Objective (VQO) describes the acceptable level of landscape alteration for a specific land area, based on the variety class and sensitivity level of that area. VQOs are used in Forest planning to identify the level of visual quality that would be met under each planning alternative. The following table summarizes VQOs as currently inventoried for Inyo National Forest lands.

Table 52
Inyo National Forest Lands by Inventoried
Visual Quality Objective

Objective	Constraints on Management Activities	Acres	Percent
Preservation	-Prohibited (Wilderness & RNAs).	580,000	31
Retention	-Must not be visually evident - retain natural appearance.	329,700	17
Partial Retention	-Must be visually subordinate to natural character of landscape.	646,200	34
Modification	-May be visually dominant, but must conform to natural character of landscape.	264,800	14
Maximum Modification	-May be visually dominant but not the primary focal point.	64,000	3

Supply - Existing Visual Condition

The Existing Visual Condition (EVC) of all lands on the Forest, including wilderness, has been inventoried. This data describes the degree to which the natural appearance of landscape has been altered. EVC Types I-V relate generally to the VQOs listed above. Alterations described in Type VI do not meet any of these VQOs; they would be considered unacceptable modifications. The EVC types listed below are used in Forest planning as a basis for measuring the effects of alternatives on visual quality. The following table summarizes the existing visual condition of Inyo National Forest lands.

Table 53
Inyo National Forest Lands by Existing Visual Condition

EVC Type	Description	Acres	Percent
Type I	Untouched	1,430,600	76
Type II	Changes unnoticed	169,100	9
Type III	Minor disturbances	187,800	10
Type IV	Moderate Disturbances	70,900	4
Type V	Major disturbances	19,400	1
Type VI	Drastic disturbances	7,100	0

Supply - Visual Absorption Capability:

The Inyo is moderately capable of screening (visually absorbing) land-disturbing activities. However, these activities are most likely to occur in areas where absorption would be most difficult such as along roads or in heavily used recreational areas. The following table summarizes the absorption capability of all Inyo National Forest lands outside of wilderness (approximately 30 percent of the Forest is wilderness).

Table 54
Inyo National Forest Lands by Visual Absorption Capability

Absorption Capability	Acres	Percent of Total Forest Lands
High	307,700	16
Moderate	736,400	39
Low	275,600	15

Supply - Visual Quality Index:

A Visual Quality Index (VQI) can be developed to numerically display the difference between the Existing Visual Condition (EVC) and the visual condition that would exist if a given set of Visual Quality Objectives (VQOs) were implemented. The current Inyo National Forest Visual Quality index is 142.07, indicating a very high level of scenic value.

Supply and Demand

The Inyo National Forest considers the visual resource a primary value because the landscape is inherently high in quality (variety class) and is extremely visible and seen by millions of people each year (sensitivity level). Due primarily to the low levels of land-disturbing resource activities on the Forest, 94 percent of the land has retained a natural appearance.

The demand for scenic beauty is most readily characterized by demands for recreational activities. Growth rates for all forms of recreation on the Forest except camping have increased significantly in the last 20 years. The amount of camping has declined with declining developed site capacity. See the Recreation section in this chapter for more detail.

Many recreational activities are directly oriented toward the scenic resource. Major increases in the overnight accommodation capacity of local communities as well as increases in dispersed activities such as hiking, driving for pleasure, nordic skiing, and general forest recreation are based on the visual enjoyment of the Forest. Expanding attractions off-Forest (including local events and celebrations), better access and more leisure time, affluence, and education create a demand for continued high visual quality on the Inyo National Forest.

WATERSHED: SOILS

Issues, Concerns, and Opportunities

Issues, concerns, and opportunities regarding the soil resource on the Forest focus on soil conservation, rehabilitation, improvement, and enhancement. Issues, concerns, and opportunities in this category include declining soil productivity, rehabilitation of damaged or deteriorated watersheds, and management practices in silviculture, grazing, recreation, and other Forest activities that protect or enhance watersheds.

Present and projected demands on the Forest for increased production of commodity goods, expansion of recreational facilities, and expansion of mineral and energy production could expose increasing expanses of soil to erosion. The methods used to pursue these activities can alter the soil beyond the point of recovery.

The Forest currently manages the soil resource primarily by mitigating activities to minimize impacts. Where soil impacts are severe, watershed restoration projects may also be undertaken. The Forest Watershed Improvement Needs (WIN) Plan has identified 23,560 acres, primarily in wet

meadows, that are in need of improvement. Of this acreage, approximately 5,000 acres are currently damaged, and 18,560 acres are threatened with damage if preventive measures are not taken. The WIN plan was developed primarily in response to water quality concerns; soils concerns were secondary. Additional soils concerns need to be addressed by additional WIN studies.

There is an opportunity to establish soil resource management direction in the Forest Plan that goes beyond current management by tailoring direction to specific management areas.

Background

Soil is a basic and essential Forest resource that supports or directly influences most, if not all, other resources. Soil is considered productive when it can grow vegetation for domestic livestock forage, wood products, wildlife habitat, and scenic quality. Each soil type has a unique set of characteristics that determine its suitability for such activities as timber harvest, road construction, grazing, and recreation site construction.

More than 120 distinct soil types have been identified on the Forest. An Order 4 Soil Resource Inventory (SRI) has been completed for the east side of the Forest (the White and Inyo Mountains and the Pizona area). A combination Order 3-Order 4 SRI of the west (Sierra Nevada) side of the Forest is 80 percent complete. The latter inventory excludes wilderness except on the Kern Plateau. About 200,000 acres remain to be surveyed.

Order 4 SRIs are broad reconnaissance investigations that are adequate for Forest-wide planning purposes. Order 3 SRIs provide more information than Order 4; they are conducted for, and are adequate for Forest planning purposes on lands subject to heavy recreation use or timber management. More specific on-site investigations, are needed for project-level work.

The soils on the Inyo National Forest are variable in terms of parent material, physiographic position, susceptibility to erosion, and capacity to support vegetative growth. Fifty-one percent of the soils on the Forest are derived from granitic parent material. Sedimentary parent materials represent 20 percent, pumice parent material represents 9 percent, and limestone parent material represents 6 percent of the total. About 78 percent of the soils on the Forest are sandy or coarse-textured. Three-quarters of these soils contain more than 35 percent rock fragments (stones, cobbles, or gravel) throughout their profiles. About 15 percent of the soils on the Forest are ashy in texture. One-fifth of these soils contain more than 35 percent rock fragments throughout their profiles. The remaining 7 percent are fine-textured soils. Physiographic position ranges from flat tableland to gently sloping alluvial fans, to extremely steep mountainsides.

Many soils on the Forest lie on steep slopes. Sixty percent lie on slopes of greater than 30 percent. Of these, one-third are on slopes greater than 60 percent. Soils on slopes exceeding 60 percent are considered sensitive watershed areas and are generally managed with a primary emphasis on protecting and/or maintaining soil resource values.

Soil productivity is defined as the capacity of the soil, in a specific environment, to produce biomass (vegetation). The factors that influence productivity are soil depth, percentage of rock fragments, texture, available water-holding capacity, nutrient status, maintenance of the duff layer, mineral toxicity, and pH. Precipitation, slope, and elevation also affect productivity. Soil productivity on the Forest ranges from extremely low to highly productive.

The greatest threat to soil productivity is erosion. Some soils are more likely to erode than others, but all are affected by disturbances caused by natural catastrophes or management activities. Highly productive soils can be rendered unproductive by erosion. The soils on the Forest with the highest erosion potential are the Beveridge, Brad, Finley, Midas, and Oosen families. These soils together make up about 6 percent of the Forest.

Most of the soils on the Forest show little evidence of erosion. However, certain areas have lost most of their topsoil because of accelerated erosion. Accelerated erosion has resulted from management activities and/or from natural catastrophes. The most severely affected areas are meadows grazed by livestock (most effects have come from past grazing mismanagement) and alpine ski areas.

Soils on Rangelands

The following soil productivity data is based on range measurements. Rangeland soils are associated with five general vegetation types on the Inyo: high desert/alpine, pinyon-juniper/big sagebrush, bitterbrush/big sagebrush, dry meadows, and wet meadows.

Table 55
Soil Productivity on Rangelands

Vegetation Type	Pounds/acre/yr. Forage	Acres on Forest*	Representative Soil Families or Subgroups
High desert;alpine	75-300	152,574	Pergellic Cryoborolls; Spanel
Pinyon-juniper/ big sagebrush	300-600	661,282	Basket; Trocken
Bitterbrush/big sagebrush	600-1,000	248,307	Supervisor; Toeja
Dry meadow	1,000-1,500	13,831	Cumulic Haploxerolls Aquic Crymbrepts
Wet meadow	1,500-2,000	14,506	Dobrow; Typic Haplaquolls

Table 56
Soil Characteristics on Rangelands

Soil family or Subgroup	Percent of the Forest	Associated Landforms	Elevations (feet)	Average Annual Precip.(Inches)
Pergelic Cryoborolls	10%	mountainsides	9,000 to 14,250	11 to 18
Basket	42%	mountainsides, alluvial fans, dunes, and bottomlands	4,700 to 11,400	8 to 12
Supervisor	16%	mountainsides dunes	5,900 to 12,600	9 to 17
Aridic Haploxerolls	1%	dry meadows & riparian areas	6,000 to 10,000	10 to 30
Dobrow	1%	wet meadows	7,000 to 11,000	10 to 30

*Mostly non-wilderness; only wet and dry meadow figures include wilderness.

Meadows, which are scattered throughout the Forest, have the most productive range soils on the Inyo. These soils have developed from alluvium derived from mixed parent material. The soils are generally deep and well developed, often with alternating mineral and organic-rich mineral layers throughout the profiles. Textures are coarse to medium; water-holding capacities are low to moderate (2.5 to 7.5 inches for the soil as a whole). Either surface water or water from a high water table keeps many of these soils moist throughout the year. The natural erosion rate for these soils is low to moderate, but accelerated erosion is a common problem on meadows where too much grazing has occurred in the past.

The history of intensive grazing on what is now Forest land goes back a hundred years. Severe gully erosion on the rangelands, especially in meadows and riparian areas, has resulted from decades of overuse and poor grazing practices. The rangelands on the Kern Plateau at the south end of the Forest have sustained the worst of this damage. Grazing levels have been reduced, and watershed restoration projects are under way to stop and eventually reverse the course of accelerated erosion in damaged areas.

Meadow soils on the Forest are presently being restored at an average rate of forty acres per year. Meadow restoration projects are under way in the Buttermilk area, the Kern Plateau, the White Mountains, the Casa Diablo area, the Glass Mountains, Little Antelope Valley, Little Hot Creek, Mammoth Meadows, Swall Meadows, the Coyote Plateau, and Baker Creek.

Soils on Timber Lands

The following data on soils associated with the three major commercial timber types on the Forest is based on timber measurements.

Table 57
Soil Productivity on Commercial Timberlands

Timber Type	Acreage on Forest*	Average Site Class/Index	Incremental Growth (cu ft/acre/year)	Representative Soil Family or Subgroup
Red fir	19,732	2/30	104	Kwed; Olancha; Siretta
Jeffrey pine	71,007	4/60	46	Oosen; Wapal; Chaix
Lodgepole pine	21,169	6/40	25	Dystric Xerothents, cindery; Thow; Glean

* Non-wilderness only

Table 58
Soil Characteristics of Commercial Timberlands

Representative Soil Family or Subgroup	Percent of the Forest*	Associated Landforms	Elevations (feet)	Average Annual Precip. (Inches)
Kwed	1%	mountainsides, mountain flats, moraines	7,200 to 12,000	15 to 40
Oosen	5%	mountainsides, mountain flats, hillslopes, alluvial fans, & uplands	6,000 to 9,500	10 to 30
Thow	1%	mountainsides, mountain flats, plateaus, hill-slopes, uplands, moraines, stream terraces, and floodplains	7,800 to 10,600	14 to 30

* Non-wilderness only

Commercial timber on the northwest part of the Forest grows on deep, young, poorly developed pumice, granitic, and andesitic soils such as the Kwed, Oosen, and Thow families. The soils represented by the Kwed family are the most productive timber-growing soils on that part of the Forest. Soils in the Oosen family are moderately productive, and those in the Thow family are the least productive. All of the soils in the area have low to moderate water-holding capacities (2.5 to 7.5 inches for the upper sixty inches of the soil). The soils are sandy and coarse-textured and often contain many rock

fragments throughout their profiles. These soils are highly susceptible to erosion, especially on slopes of more than 30 percent.

Timber lands on the southwest part of the Forest in the Monache Mountain-Kingfisher Ridge area of the Kern Plateau lie on shallow to deep, poorly developed, granitic and andesitic soils that fall into the Siretta, Chaix, and Glean families. Soils in the Glean family are the most productive of the three; soils in the Chaix family are moderately productive, and soils in the Siretta family are the least productive. All of the soils in the area have low to moderate water-holding capacities. They are sandy or coarse-textured, and many contain many rock fragments through their profiles. Although the natural erosion rates for these soils are low to moderate, the potential for accelerated erosion is moderate to high, depending on the slope and the amount of disturbance.

Soils on Other Lands

Soils on the 23 percent of the Forest outside of rangelands and commercial timber lands tend to be low to moderate in productivity and water-holding capacity. As a result, they support sparse vegetative growth and are correspondingly subject to erosion, especially on steep slopes where the vegetation has been removed. As management activities and human uses of these lands tend to be minimal, erosion is not a major problem over large areas. Mining and OHV use, however, create localized impacts that can be severe.

Alpine ski area development has adversely affected the soil resource. Soils on the two existing ski areas are similar in productivity, water-holding capacity, and erosion potential to the soils on timber land at the northeast end of the Forest. The parent material at Mammoth is mostly pumice (some is granitic) whereas at June Mountain it is all granitic.

The ski runs on these areas have been built on steep slopes, and all or most of the vegetation has been removed. Wind and water erosion have been severe, resulting in the loss of the top soil layer (the most productive part of these soils). Soils carried from the slopes have reached streams, degrading water quality. Erosion prevention plans for each ski area have been partially implemented, but soils are still eroding, and water quality does not yet meet State of California Water Quality goals in some instances.

Other recreational activities on the Inyo have also affected soil stability. Fishing and camping, especially along Bishop Creek, have resulted in trampling of vegetation and erosion of streambanks. Off-highway vehicles in the Monache Meadows area have also destroyed vegetation and led to erosion in the meadows.

Other Forest activities that could affect soil stability are geothermal energy development, roads, and trails. Each of these activities disturbs or removes native vegetation, exposing the soil to accelerated erosion. These activities also often disturb and/or remove some of the soil.

The demand for optimum soil condition is related primarily to the demands for vegetative growth (for timber, range, wildlife, or scenic values) and water

quality. Stable and productive soils are needed to meet the demand for most of the other resources produced on the Inyo National Forest.

The Forest currently manages soil resources by the development and implementation of site-specific soil resource protection techniques. Best Management Practices (BMPs) for water quality protection are used as guidelines, as many of the practices that protect water quality do so by protecting soil stability. BMPs are a collection of management requirements and considerations that need to be addressed prior to and during the implementation of land management activities.

WATERSHED: WATER QUALITY

Issues, Concerns, and Opportunities

Management is concerned with the need to maintain and improve water quality. Water quality is also a public issue. The primary threat to water quality on the Inyo is sedimentation. The most significant sources of sediment are ski areas and rangelands damaged by past mismanagement of grazing.

The major opportunities of the Forest has to respond to water quality issues and concerns are: continued application of Best Management Practices (BMPs), continued implementation of ski area Erosion Prevention Plans (EPPs), and restoration of damaged watersheds.

BMPs have been certified by the State and approved by the Environmental Protection Agency for controlling non-point sources of surface water pollution. Methods and techniques for applying the appropriate BMP are identified during the on-site investigation of Forest projects that have potential to degrade surface water quality.

Background

The vast majority of runoff from Inyo National Forest land is used for domestic or municipal supplies or for irrigation. Although small and localized bacterial, nutrient, and chemical problems exist, established basin water quality objectives are met by 97 percent of the total water flowing off Forest lands, or approximately 1,047,000 acre-feet per year. The only significant impact on water quality is sediment from ski areas and eroding wet meadows.

The vegetatively barren or sparsely vegetated slopes of the Forest's two alpine ski areas can contribute heavy sediment loads to streams during the spring runoff season. Ski runs are developed to provide maximum skier capacity on minimal snow cover. This principle requires that any vegetation on the run be of minimal height and that vegetation be removed straight up and down the fall line. The pumice and granitic soils characteristic of ski areas on the Inyo are easily disturbed, and once disturbed they are easily eroded. Approximately 1,500 acres are currently disturbed. Although Erosion Prevention Plans have been developed for both ski areas, approximately 800 acres of disturbed land have yet to be stabilized.

The other major sources of sediment on the Inyo are wet meadows that have been severely eroded over the past century. The 1981 Forest Watershed Improvement Needs (WIN) inventory surveyed 26,000 acres of meadow, 23,560 acres of which needed improvement to either maintain or restore water quality. Meadow erosion is most severe on the Kern Plateau, Coyote Flat, and the east sides of the White Mountains and Glass Mountains.

Mismanaged grazing in the past has triggered accelerated erosion and greatly reduced the productivity of many mountain meadows. Continued grazing has inhibited the natural recovery of some sites. About 15 to 20 percent of the current cattle grazing and nearly 15 percent of the sheep grazing on the Forest occurs in these meadows.

Much of the sediment production occurs during spring runoff, with an occasional high-intensity summer storm contributing large amounts in a localized area. Grazing has a tendency to compact soils, to concentrate water on livestock trails, to trample streambanks, and to denude small localized areas such as water trough sites, salting sites, and sheep bedding areas. In addition, livestock spend a disproportionate amount of the time in riparian areas, especially in wet meadows, thus inhibiting recovery. The above combination of factors can result in increased runoff and sediment production on sensitive rangelands.

Stream reach inventory and channel stability evaluation procedures have been applied to rangelands on the Kern Plateau. Areas with good bank protection scores (considerable stream bank rock armoring and streamside vegetation) have shown fair to good resistance to the impacts of livestock grazing. Sensitive stream reaches with poor bank protection scores have shown dramatic impacts in response to livestock grazing. Nearly all sensitive stream reaches in grazing allotments have gone through a cycle of erosion, including headcut migration and gully widening and deepening. The trampling of streambanks on such stream reaches has increased sediment production by as much as 500 percent above estimated natural levels. These reaches may, however, represent less than 5 percent of the total stream miles on the Kern Plateau. The bank protection rating system will be used to monitor grazing impacts and recovery potential along these reaches in the future.

Some small, isolated riparian areas in other parts of the Forest show evidence of much disturbance due to frequent visitation by livestock for water and shade. Water quality in these areas deteriorates only during infrequent thundershowers, but the riparian areas are degraded nonetheless.

Watershed restoration projects are currently being implemented on the most severely damaged wet meadows at a rate of approximately 40 acres per year. A goal of 200 to 300 acres per year is desirable and attainable.

Other activities that currently or potentially impact water quality are mining, geothermal energy development, and roads and trails. Each of these activities disturbs native vegetation and compacts the soil, resulting in increased runoff, channelization of water, and sediment production. Those parts of the Forest with the highest precipitation and the steepest slopes are the most sensitive to the water quality impacts of land-disturbing activities.

Timber management has historically conflicted very little with water quality on the Inyo, and conflicts are not expected to increase unless harvest occurs on different soil types or steeper slopes than those harvested at present. Most timber harvest occurs over-the-snow, so soils are not usually affected directly by logging activities. In addition, the timbered area of the Forest lies mostly on pumice soils. Pumice is so porous that there is little, if any, surface runoff to carry soil into streams. If steeper slopes or different soil types are harvested in the future, water quality could become more of a concern than it is at present.

Municipal Watersheds:

The Forest includes ten watersheds that serve municipal water systems; these watersheds are listed below.

Table 59
Municipal Watersheds
on the Inyo National Forest

Municipal Watershed	Average Annual On-site Water Use (acre-feet)
Lee Vining Creek	365
Rock Creek	64
Bishop Creek	25
Big Pine Creek	10
Independence Creek	7
Lone Pine Creek	17
Glass Creek	16
Pine Creek	300
Reversed Creek	325
Mammoth Lakes Basin	3,750

The first six of these watersheds include large wilderness acreage and heavy recreation use areas. Local domestic water uses include campgrounds, resorts, and summer homes. The only concerns with water quality in these six watersheds are recreational use of the campgrounds and backcountry areas, fuel spills from vehicle accidents or resort facilities, or faulty septic and leach line facilities at resorts or summer homes. The latter concerns are minimized by posting roads to control speeds and inspecting facilities every few years to guard against undetected leaks. Backcountry use problems are minimized by educating the public about wilderness sanitation and imposing wilderness use quotas to protect resources. There is no foreseeable need for additional measures to be taken for municipal water standards to be met.

The Glass Creek watershed includes only National Forest land. The only domestic water uses include a campground and a small summer home tract. The watershed is stable and water quality is good; a minor sedimentation problem in the meadows is targeted for improvement in the near future. Although the stream below the recreational facilities typically shows bacterial contamination in late summer and throughout the fall, the water meets water

quality standards for downstream uses. New ski area development or timber harvest are potential impacts on the watershed.

The Pine Creek watershed provides water for the small mining community of Rovana. The headwaters of Pine Creek are in wilderness; the Pine Creek Mine is located just outside the wilderness boundary. Water emerges from wilderness with excellent quality but deteriorates as it flows through the mine and mill sites. The major threats to the water quality of Pine Creek are wilderness use, mining and milling operations, and fuel or toxic chemical spills from vehicles traveling the road. There are no reservoirs or developed recreation sites in the watershed. Wastewater discharges from the mine and mill are regulated by the State Water Quality Control Board, and BMPs are applied to mining operations on National Forest land. The majority of mine and mill facilities are on private land and, hence, outside of Forest Service control. Toxic chemical spills have occurred in the past, and there is a contingency plan for warning the community in case their water supply is contaminated.

Reversed Creek and its tributaries provide water for communities in the June Lake Loop. Existing and potential adverse impacts on water quality are ski area development, community development, and vehicle traffic. The existing ski area produces considerable sediment during peak runoff periods, causing a shutdown of water treatment systems for thirty days or more each year. Implementation of the EPP for the ski area has reduced these impacts over the past few years, and discharge will soon meet State requirements. Any expansion of the ski area must be carefully planned and tightly controlled. Community growth should involve close cooperation between the Forest Service and the county. The water supply for June Lake Loop communities should be sufficient to meet projected population growth, though conflicts with downstream users could arise. A discussion of the potential to increase water quantity in this area is included under the heading of Water Yield, below. For more detailed information, see "June Lake Loop: A Review of Current Water Uses and Future Needs" (1982).

The community of Mammoth Lakes uses nearly a third of the water flowing from the Mammoth Lakes Basin. Most of the watershed is on National Forest land, of which 80 percent is wilderness. The Lakes Basin is managed primarily for recreation and watershed values. There is no timber harvest or other commodity production in the watershed, due both to a lack of opportunities and a primary emphasis on recreation in that area. The five reservoirs in the Basin are used for water storage (600 acre-feet) and regulation of instream flow. Fishing and boating are allowed on the reservoirs. Swimming is permitted only in Horseshoe Lake, which does not drain directly into the watershed. Water from Horseshoe Lake apparently percolates through the soil into the water table.

The quality of Mammoth Lakes Basin water is good where it emerges from the wilderness, but declines somewhat as it passes through recreation developments and heavy use areas. Water quality has improved in recent years since new sewer systems have been installed and wilderness use has been regulated; State standards for domestic water supplies are met consistently.

The supply of water in the Lakes Basin does not meet present and projected demands for the growing Mammoth community. A discussion of the potential to increase this quantity is included under the heading of Water Yield, below.

In April 1977, a Water Management Plan, Final Environmental Report, was prepared by the Mammoth County Water District in response to water rights filings in the Mammoth Lakes Basin. The Forest responded to the final report by conducting an environmental analysis and preparing an Environmental Assessment (EA). This assessment limits drawdowns on the reservoirs and stipulates instream flows for affected stream reaches. These stipulations have been incorporated into the license conditions for the water rights. No constraints are placed on Forest Service activities within this operating agreement. Future direction addresses increased storage potential within the Basin, subject to the stipulations of the existing EA and future EAs.

Cumulative Watershed Effects (Water Quality)

Of the twenty-two National Forest System watersheds on the Forest, less than 20 percent of any individual watershed land base is privately owned. Intermingled private lands are managed predominantly for recreational values (housing, fishing and hunting). The Pine Creek watershed is occupied by a tungsten mine; the Lake Crowley and Mammoth Creek-Hot Creek watersheds have grazing and major community development. Due to the low level of projected impacts from recreation development and management (except alpine skiing), the lack of a substantial private land base, and the low level of management intensity, use, and development on most watersheds, only two areas on the Forest are vulnerable to cumulative watershed impacts relating to water quality. Those areas are the Monache Meadows area on the Kern Plateau and the Mammoth Creek-Hot Creek watershed downstream from Mammoth Lakes.

Increased grazing on sensitive stream reaches and meadows and continued illegal OHV use in the Monache area could have significant impacts on water quality. The soils in that area are derived from decomposed granite resulting in a predominance of loamy sand with little cohesion among particles. The lack of understory vegetation in timber, and the lack of rocky or vegetative armoring on streambanks make this watershed very sensitive to changes in the hydrologic regime.

Increased runoff from past grazing and OHV trails has adversely affected water quality in the Monache area and will probably continue to do so. Watershed damage from these activities has reduced the ability of disturbed sites, especially wet meadows and riparian areas, to absorb and offset the effects of high runoff periods. Continued or increased use of the area with additional land-disturbing activities would have to be closely monitored due to the high potential for further adverse impacts on water quality.

Studies have indicated that grazing can increase sediment production by 25 to 1000 percent or more (Mechan et al, 1977; Hartment et al, 1960; G. Lusby, 1970). Grazing also increases the total water yield and the duration of runoff in a watershed (Hanson et al, 1970). Increased and prolonged runoff increases erosion and reduces the water available for vegetative growth.

Stream reach inventory and channel stability evaluation procedures have been applied in the Monache area. Areas with good bank protection scores

(considerable streambank rock armoring and streamside vegetation) have shown fair to good resistance to the impacts of livestock grazing. Areas with poor bank protection scores have shown dramatic impacts in response to grazing. The bank rock content and streambank vegetation are used as indicators of the resistance of a stream to impacts and will be used as a means of assessing grazing impacts on water quality.

Existing and proposed ski area development, urban growth, and livestock grazing have already adversely impacted water quality in the Mammoth Creek-Hot Creek watershed. A tenfold increase in suspended sediment during the spring runoff-summer period occurs in Mammoth Creek between the outlet of Twin Lakes and U.S. 395. The predominant sources of this sediment are urban development and associated ski area development. Much of the future proposed development would represent ground-disturbing activities, some of those on steep slopes, resulting in increased runoff and sedimentation.

The State Water Resources Control Board has recently adopted a motion to place a high priority on establishing stringent guidelines for urban development in the Mammoth-Hot Creek watershed in an attempt to minimize adverse water quality impacts.

WATERSHED: WATER RIGHTS

Issues, Concerns, and Opportunities

Management is concerned with the lack of legal mechanisms in state law for obtaining water rights for nonconsumptive water-dependent resources. The management of those resources, such as fish and wildlife habitat, riparian vegetation, scenic and recreational values, are central to the mission of the Forest Service, but could be threatened by other water uses on Forest land. This concern on the Inyo focuses on such consumptive uses as hydroelectric projects, domestic and municipal water needs, and irrigation.

The Forest resolves conflicts related to water rights and uses by interdisciplinary review, by setting forth stipulations in appropriate special use permits, and by responding to energy license applications received by the Federal Energy Regulating Commision (FERC) for hydroelectric projects.

Background

The Inyo National Forest holds 340 water rights to meet its existing consumptive use of 7,400 acre-feet of water per year. This water use represents 0.007 percent of the total water yield from Inyo National Forest lands. More than 95 percent of Forest and non-Forest water rights have been inventoried and are currently accurate. It is estimated that the Forest's own consumptive water needs would grow no more than 10 percent over the next fifty years under any management scenario. Most of that demand could be met by using appropriate State laws and procedures.

Many streams, riparian areas, and riparian area-dependent resources on and near the Forest have been adversely altered to a significant degree. Approximately fifty miles of stream on the Forest have been totally dewatered

for municipal, hydroelectric, and irrigation purposes. Approximately 30 percent of that total may be partially rewatered in the future if new licenses for existing hydroelectric projects include stipulations to that effect. Congressional action or litigation would be needed to reinstate instream values on the remaining 70 percent.

WATERSHED: WATER YIELD

Issues, Concerns, and Opportunities

Management concerns focus on the public demand for more water, both locally and in Southern California, and the competition between consumptive water uses (such as hydropower, irrigation, and municipal supplies) and nonconsumptive (instream) values.

Essentially all of the water from the Forest flowing into the Mono and Owens Basins is either used in local communities or exported for municipal consumption. The small amount of water that is not consumed serves wildlife needs in the desert environments of the valley floors.

Background

The current mean annual water yield from Inyo National Forest lands is approximately 1,093,000 acre-feet. Table 60 displays water yield by National Forest System (NFS) watershed.

Approximately 60 percent of water from the Forest drains into the Owens and Mono Basins. Nearly 50 percent of the 190,000 acre-feet flowing into the Mono Basin and 75 percent of the 502,000 acre-feet flowing into the Owens Basin is exported via the Los Angeles Aqueduct to supply 80 percent of the total water used by the City of Los Angeles. Another 30 percent of the Forest water yield flows west from the Sierra Crest, via the Kern and San Joaquin Rivers, into the Central Valley where is its used for irrigation, hydroelectric power, and municipal supplies. Water from the White Mountains, representing approximately 6 percent of the Forest total, is used for ranching, irrigation, and domestic needs within ten miles of the Forest boundary.

The potential to increase water yield on the Forest by vegetation management is limited by several key factors: the low levels of precipitation over much of the Forest; the large acreage in designated wilderness; the domination of most major drainages by recreation developments and heavy recreation use, and the relatively small amount of acreage suitable for intensive timber management (the best opportunity to increase water yield).

The entire Forest includes only 700,000 acres of land that receive sufficient precipitation to warrant an analysis of the potential to increase water yield. Approximately 580,000 of those acres are in designated wilderness. Of the remainder, only 80,000 acres are in suitable timber. Due to these limiting factors, maximum water yield off the Forest would represent an increase of only 20,000 acre-feet per year over current levels. That increase would result from timber harvest and/or vegetation removal for ski area development in the San Joaquin Ridge area between Mammoth and June Lake.

Table 60
Average Annual Water Yield by Watershed

NFS Watershed	Watershed Name	Water Yield (acre-feet)
1606001001	Huntoon Creek	0
01	Northeast White Mountains	51,230
1080400601	Fish Creek (Inyo Portion)	73,125
03	Middle Fork San Joaquin River	138,120
1809010101	Mono Lake	190,000
02	Adobe Valley	30,575
1809010201	Lake Crowley	116,000
02	Hot Creek (formerly Mammoth Creek)	41,000
03	North Owens River	59,475
04	Rock Creek	53,865
05	Horton Creek	13,955
06	Bishop Creek	71,360
07	Big Pine Creek	34,705
1809010301	South Owens River	65,095
02	Independence Creek	8,970
03	Lone Pine Creek	11,000
04	Owens Lake	27,085
1809020101	Southeast White Mountains	10,430
1809020501	Desert - China Lake	1,000
1803000201	Upper South Fork Kern River (Inyo Portion)	40,330
02	Middle South Fork Kern River (Inyo Portion)	11,440
1803000101	Upper Kern River (Inyo Portion)	45,575
	TOTAL	**1,094,335**

The communities of Mammoth Lakes and June Lake, both included within the Forest boundary, are quickly outgrowing their water supplies. The ultimate limits of expansion for both communities may well be set by the water supply.

In years with average or below-average precipitation, the water supply for Mammoth Lakes falls approximately 10 percent short of existing demand. The current community plan calls for a near-doubling of the population, with corresponding increases in demand for water. Although increased water storage capacity has been proposed for the Mammoth Lakes Basin, and although various options are being studied, wilderness designation and recreational considerations limit that opportunity. Wilderness and recreation also preclude the management of vegetation to increase water yield in the Lakes Basin. The community is exploring groundwater sources, but the volcanic geology of the area does not lend itself to highly productive wells. Other alternatives are very costly. There are several agreements and master operating plans for management of the Mammoth Lakes Basin water supply; these agreements and plans are updated every five years.

The population of the June Lake Loop is projected to increase 100 percent over the next twenty years. There are more opportunities for increasing

water supplies for June Lake than for Mammoth, but those opportunities are hindered by current litigation over Mono Lake, the distance between water sources and the community, and potential conflicts with existing downstream users.

Table 61
Miles of Stream Dewatered
Mono and Owens Basin Watersheds

Mean Diverted Amount as Percent of Undiverted Flow	Miles Impacted	Percent of Total Miles Impacted
0	63.4	12.0
0.1-10	141.5	26.7
10-20	67.9	12.8
20-30	27.2	5.1
30-40	10.5	2.0
40-50	21.7	4.1
50-60	5.3	1.0
60-70	12.3	2.3
70-80	26.0	4.9
80-90	23.1	4.4
90-99.9	24.2	4.6
100	105.9	20.0
TOTAL	**529.0**	**99.9**

Cumulative Effects (Water Yield)

Cumulative watershed effects associated with the Inyo National Forest are concerned far less with water quality than with quantity and/or availability. These cumulative effects center on the water needs of growing populations in water-deficient areas (both locally in the Eastern Sierra and in the City of Los Angeles). The major conflict has arisen between consumptive water uses and instream values.

Beginning in the 1880s, water diversion and channelization within, and export from the Mono and Owens Basins has had significant adverse impacts on water-dependent resources. As the above table illustrates, 105 miles of stream or 20 percent of the total in these watersheds have been completely dewatered. In addition, the dewatered streams are those that once had the heaviest flows, the most productive fisheries, and the most extensive riparian habitats.

One of the most significant measurable impacts of water removal has been the declining quantity and quality of waterfowl habitat. According to the Department of Fish and Game, in 1983 (a very wet year in which much of the local runoff was used to recharge the water table) more than 3,000 birds were raised in the Lower Owens Valley. In 1984 (an average water year) fewer than 300 birds were raised in the Valley.

Owens Lake is essentially dry, and Mono Lake is projected to stabilize at 45 percent of its original volume (before water diversions began in 1941). Mono Lake is considered a prime annual resting and feeding site for nearly two million migratory birds and a nesting site for approximately 20 percent of the world population of California gulls. If water diversions continue at current rates, the salinity of the lake could increase to the point of significant adverse impacts on native brine shrimp. These shrimp are the foundation of the food chain that supports both migratory and resident birds.

Within the present Forest boundary, nearly fifty miles of stream are dewatered, primarily for purposes of irrigation, municipal/domestic supplies, and hydroelectric power generation. There is an opportunity through the hydroelectric licensing process to partially rewater certain reaches of stream and to recover approximately 10 percent of the water-dependent resources that have been lost. Any additional rewatering could only be obtained by litigation.

The demand both for consumptive uses of water and for water-related recreation (the backbone of the local economy) are expected to increase over time, so the conflict and competition between consumptive and nonconsumptive needs will continue and intensify for the foreseeable future.

WILD AND SCENIC RIVERS

Issues, Concerns, and Opportunities

Public issues regarding wild and scenic rivers include the concerns that free flowing rivers be preserved, some rivers be maintained unspoiled in their natural state, rivers be considered for wild and scenic rivers status, and potential additions to the wild and scenic rivers system not be threatened.

Management concerns on the subject address the need to assess candidate rivers for possible inclusion in the National Wild and Scenic Rivers System.

Background

Congress established the National Wild and Scenic Rivers Program in 1968. In 1982, the Department of Interior completed the California Component of the nationwide inventory of rivers with potential for wild and scenic status. That inventory included three rivers on the Inyo National Forest: the North and South Forks of the Kern River and the Middle Fork of the San Joaquin River. No additional rivers on the Forest were identified as potential wild and scenic river candidates. The North and South Forks of the Kern River have subsequently been designated by Congress as Wild and Scenic Rivers.

The Inyo National Forest coordinated with the Sequoia National Forest (the lead unit for the Kern River), and the Sierra National Forest (the lead unit for the San Joaquin River system) in making recommendations for the South Fork of the Kern and the Middle Fork of the San Joaquin Rivers respectively.

The North Fork of the Kern River originates within Sequoia National Park and flows south through the Kern River Canyon until it empties into Lake Isabella. At the Kern River Ranger Station in the Park near Golden Trout

Creek, the North Fork of the Kern becomes the common boundary between the Inyo and Sequoia National Forests. The river is free-flowing dropping through rocky gorges with precipitous sidewalls. After the river leaves the Park, it flows through the Golden Trout Wilderness to just south of the Forks of the Kern, where it leaves the wilderness.

The North Fork of the Kern River borders the Inyo National Forest from its confluence with Golden Trout Creek to its confluence with Nine Mile Creek, all within the Golden Trout Wilderness. The Inyo National Forest side of this common boundary is trailless, except for a short section of trail going northwest from the junction of Nine Mile Creek. White water rafting is popular, with trips starting from the Sequoia National Forest side of the river.

The South Fork of the Kern arises on the Inyo National Forest at an elevation of 10,200 feet within the Golden Trout Wilderness. The river flows in a southerly direction for twenty miles through the wilderness, then for eight miles through Monache Meadows, and sixteen miles through the South Sierra Wilderness where it forms the boundary between the Inyo and Sequoia National Forests. The segment of the river that passes through the Inyo National Forest is approximately forty-four miles long. The river is free-flowing, descending through deep gorges with large granite outcroppings and domes interspersed with open meadows. The gorges have numerous waterfalls and rapids. Most of the surrounding lands lie in wilderness. The river supports dramatic and diverse riparian vegetation. The segment of the river on the Inyo is readily accessible by trail. An eight-mile stretch through Monache Meadows is accessible by four-wheel drive vehicle.

The South Fork of the Kern lies mostly on the Sequoia National Forest. The Sequoia, therefore, took the lead role in assessing the river. The Inyo has played a cooperating role in supplying information to the Sequoia. The Inyo will follow the Sequoia's lead in producing the management plan for the river.

The Middle Fork of the San Joaquin starts from Thousand Island Lake at an elevation of 9,800 feet within the Ansel Adams Wilderness on the Inyo National Forest. The river flows in a southerly direction for sixteen miles through the wilderness and Devils Postpile National Monument, then in a westerly direction for two miles until it enters the Sierra National Forest. The river segments on the Inyo total approximately fifteen miles.

The Middle Fork flows through a deep canyon with steep, rocky sides, sheer granite walls, and impressive domes. The river has numerous rapids and falls that are impassable by raft. The segment of the river on the Inyo is accessible by trail and the Reds Meadow Road.

The Middle Fork of the San Joaquin is included with the rest of the San Joaquin River in the Nationwide Rivers Inventory. The major part of this river, including some of the Middle Fork, lies on the Sierra National Forest. The Sierra has, therefore, taken the lead in conducting the assessment and will make recommendations for management of the river to the Regional Forester.

Wild and scenic river recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, Secretary of Agriculture, and the President of the United States. Congress has the authority to designate rivers to the National Wild and Scenic Rivers System.

WILDERNESS

Issues, Concerns, and Opportunities

Most public issues about existing wilderness involve administrative decisions that are made in wilderness management plans, not in the Plan.

The major planning issue raised by the public concerning wilderness is the amount and location of new wilderness areas. That issue is handled under the heading of Further Planning Areas.

Four of the five existing wildernesses on the Forest are managed under approved management plans. A plan for the South Sierra Wilderness has yet to be developed. Management is concerned that existing plans be examined for consistency and responsiveness to current conditions, that they be amended to include recent wilderness additions, and that a plan be developed for the South Sierra Wilderness. Specific concerns to be handled in management plans include limitation and dispersal of use, party size, camping and campfire restrictions, recreational livestock use, outfitter-guide operations, trails, ecologically sensitive areas, and wildfire management.

Background

The Inyo National Forest includes 565,142 acres within the Hoover, Ansel Adams (formerly Minarets), John Muir, Golden Trout, and South Sierra Wildernesses, and manages 25,201 acres of Sierra National Forest land within the John Muir. The Inyo shares management of all five Wildernesses with other Forests.

The Inyo manages about 9,500 acres of the Hoover Wilderness (out of 47,937 total acres). The prime attraction on the Inyo portion of the Hoover is the Twenty Lakes Basin, an extremely scenic area with gentle to rolling high-elevation terrain which receives extremely heavy day use. The services of a boat taxi from the trailhead to the north shore of Saddlebag Lake, and the proximity of campgrounds in the Saddlebag Lake and Tioga Pass Road areas contribute to the heavy use. The Hall Natural area, a Further Planning Area being considered for wilderness designation in the Planning process, is adjacent to the Hoover.

The Ansel Adams Wilderness (formerly the Minarets) is administered by the Inyo and Sierra National Forests. New additions to this wilderness were designated by the California Wilderness Act of 1984. Additions on the Inyo side are located above Grant Lake in the June Lake Loop and in the Reds Meadow-Devils Postpile area along the Middle Fork of the San Joaquin River. The Ansel Adams is mostly steep and rugged, and contains many scenic lakes and mountain peaks. Visitor use, including day use, is heavy. Trailhead quotas are needed during the summer season to manage overnight use within

established capacity limits. The many neighboring campgrounds in the Mammoth and June Lake recreation areas provide a user base for day hikes into the wilderness. Easy trail access facilitates wilderness travel. The Middle Fork of the San Joaquin River, which has its headwaters in the wilderness, is under consideration for wild and scenic river status.

The John Muir Wilderness encompasses an area known informally as the "High Sierra", characterized by hundreds of lakes, glaciated peaks, and a favorable climate during the summer. All these factors combine to attract more users in the summer than the area can accommodate. Consequently, most trailheads have use quotas on overnight travel during the summer months. The Forest has a substantial number of developed campgrounds near wilderness trailheads. People using these campgrounds are the principal source of day use in wilderness. Most major trailheads are serviced by commercial pack stations, which offer overnight and day trips into the wilderness. There are some conflicts between backpackers and stock users. Outfitter-guide use in the category of guided backpacking and mountaineering is increasing. The wilderness is easily accessed by trailheads, and sufficient trail mileage exists to provide needed access.

The Golden Trout Wilderness encompasses more than 197,600 acres on the Inyo National Forest on the Kern Plateau in the far southern Sierra Nevada. The Golden Trout is characterized by large, open meadows separated by rolling, timber-covered ridges. There is abundant feed for recreation stock to graze. Ongoing watershed and golden trout habitat restoration projects are restoring degraded meadows and fish habitat, enhancing the wilderness experience of visitors. Cattle grazing is also an important resource in this wilderness.

This wilderness provides excellent opportunities for stock-based trips and for less strenuous backpacking than is found in most of the other Inyo National Forest wildernesses. Use levels have not yet reached capacity, although campsites around the few lakes show signs of heavy use. The wilderness is adequately served by the existing trail system. The major trailhead providing access into the Inyo National Forest portion of the Golden Trout Wilderness is at Horseshoe Meadow, southwest of Lone Pine. Overnight camping at Horseshoe Meadows is restricted to short stays. There are no other developed overnight facilities near trailheads, so day-use crowding is not a problem. New or improved trailheads south and east of the wilderness would help encourage and increase use. If a paved road were constructed into the Monache Meadows area, use would also increase and stock-based opportunities (including outfitter-guide opportunities) would improve due to better access for horse trailers.

The portion of the South Sierra Wilderness on the Inyo National Forest is approximately 38,350 acres in size and is similar in geography and attractions to the Golden Trout Wilderness, which adjoins the South Sierra to the north. Cattle grazing is also important in the South Sierra. Some streams contain reproducing populations of golden trout. Portions of old four-wheel drive roads cross the wilderness, serving as access routes for foot and stock travel. The Pacific Crest Trail runs north and south through the wilderness. There are several trailheads, the most important of which is Sage Flat (for the Olancha Pass Trail), which is also the entry point for a

stock driveway for about 2,000 head of cattle each spring and fall. The existing trail system is adequate for user access.

Wilderness recreation amounted to 540,000 RVDs in 1982. Existing wildernesses are served by 705 miles of trail and twenty-nine trailheads with a capacity of 2,212 PAOTs (Persons-At-One-Time).

The demand for wilderness use exceeds capacity in the Ansel Adams and John Muir Wildernesses. As a result, trailhead quotas are imposed during the summer season. Any additional increases in use can occur only during the spring and fall months and during the midweek days in summer when quotas are not reached. Day use in the Twenty Lakes Basin part of the Hoover approaches capacity during the summer season. Use levels in the Golden Trout and South Sierra Wildernesses have not yet reached capacity. This situation may change as access improves and people become more familiar with the attractions of the areas.

The demand for wilderness use is somewhat dependent on the overall recreational appeal of an area. Scenic attractions, ease of access, lakes, campsites, destination points, and sources of drinkable water are all important. The amount of non-wilderness roadless land on the Inyo with those characteristics is limited; it is unlikely, therefore, that wilderness supply can ever meet demand on this Forest, unless the demand itself declines.

All wildfire in wilderness is presently controlled. It would be reasonable, based on the resource values and fire risk factors in wilderness on the Forest, to consider the confinement and containment suppression strategies unless life, property, or other emphasized values were threatened. Prescribed fire for enhancement of wilderness values is not needed at this time.

WILDLIFE

Issues, Concerns, and Opportunities

Public issues and management concerns have been raised regarding the following general topics: the diversity, amount, and distribution of wildlife habitat; the relative emphasis that should be given to habitat management for various species; the balancing of wildlife needs with the needs of competing resources; and the contribution management can make to meeting the growing demand for wildlife-related recreation. Issues and concerns specific to individual wildlife species or groups of species are discussed under the species subheadings below. Fish are discussed under the separate heading of Fish.

Most issues and concerns center on habitat protection and maintenance. Protection and maintenance are threatened by dramatic changes in habitat due to vegetation management; decreasing habitat diversity; and, in some cases, human intrusion.

The Forest Service is responsible for managing wildlife habitat, but not the animals themselves. Wildlife populations are the responsibility of the U.S. Fish and Wildlife Service (threatened and endangered species) or the

California Department of Fish and Game (all other species). The Forest has the opportunity to influence wildlife through its management of habitat in close cooperation with the CDFG and through the coordination of wildlife habitat needs with the management of other resources.

Background

The Inyo National Forest provides habitat for approximately 400 terrestrial vertebrate species of wildlife.

The overall supply of most habitat types is expected to change little during the next ten to fifteen years. However, the increasing demand to produce energy, timber, forage, and recreational opportunities could cause a reduction in some habitat types. In addition, wildfire prevention and suppression may allow more habitat to reach mature, less productive seral stages by reducing the amount of rejuvenation that would occur under natural conditions. Although the number of species on the Forest should not change, the populations of species dependent on snags, early seral stages of brush, late seral stage of timber, and riparian habitats could decline.

The demand for wildlife-related recreation should increase with increasing population in the state of California. Likewise, the aesthetic value of wildlife that is not related specifically to wildlife recreation (i.e., "just knowing they are there") should increase with increasing urbanization and the need to protect remnants of the national wildland heritage. Public issues related to selected species should increase as the public becomes aware of species-specific problems.

Management Indicator Species

Management Indicator Species (MIS) include key harvest species, threatened and endangered (T&E) species, key sensitive species, and species that represent the wildlife habitat types most likely to be affected by Forest Management activities.

Management Indicator Species are intended to represent all wildlife on the Forest. As such, they are used to determine the wildlife population capability of different habitats on the Forest and to evaluate management opportunities to enhance habitat. T & E, sensitive, special interest, and harvest species can also be used to represent key habitat types.

Determining the quantity and quality of habitat needed to maintain viable populations of MIS is one way to meet the requirement that the Forest Service maintain viable populations of all vertebrate species on the Forest.

The Forest presently manages wildlife with an emphasis on harvest species, threatened and endangered (T&E), and sensitive species; and special interest species. Harvest species are managed primarily to enhance recreational hunting opportunities. T&E species habitats are managed with an emphasis on recovery, or restoring the species to viable levels. Habitat for sensitive species is managed with the intent of preventing the species from becoming threatened or endangered as a result of management activities. Special interest species have values for scientific study or recreational

appreciation; their habitat is managed with the goal of maintaining or increasing populations on the Forest.

The Management Indicator Species selected for the Inyo National Forest are:

Harvest	- Mule deer, Blue grouse, Sage grouse.
Threatened and endangered	- Bald eagle, Peregrine falcon.
Sensitive	- Fisher, Sierra Nevada red fox, Goshawk, Pine marten, Great gray owl, Spotted owl, Sierra Nevada mountain sheep, Wolverine.
Special interest	- Golden eagle, Tule elk, Prairie falcon, Nelson mountain sheep.
Riparian areas	- Yellow warbler.
Snags	- Hairy woodpecker, Williamson sapsucker.
Early-middle seral stages of brush	- Sage grouse.
Older seral stages of coniferous forest	- Goshawk.

Carnivores: Four carnivores exist or potentially exist on the Inyo that are listed by the Forest Service or the California Department of Fish and Game. These are: fisher, Sierra Nevada red fox, pine marten and wolverine. The potential development of downhill skiing and associated activities could adversely affect these species. For the most part these species ranges are outside of areas under timber management.

Fishers are listed as sensitive by the Forest Service. Two recent records and a few unsubstantiated reports exist for this species in the Inyo. Dense forested habitat comprised of large trees are considered optimum habitat. West-side forests probably contain more suitable habitats than east-side counterparts.

The Sierra Nevada red fox is listed as sensitive by the Forest Service and threatened by the state. A few substantiated sightings have been reported in the June Lake area. This species is found in open forest, alpine shrub and riparian habitats at higher elevations. Rock crevices and logs are required for denning.

Pine marten are listed as sensitive by the Forest Service. Martens are a relatively common carnivore in dense stands of red fir and lodgepole pine at higher elevations.

The wolverine is listed as threatened by the state of California. Two recent reports and several unsubstantiated and old reports are documented for this species in the White Mountains and Sierra Nevada. Suspected habitats include subalpine forests for breeding and cover habitat and alpine shrub-herbaceous for foraging habitat.

Mule deer: A major public issue is the perceptible decline in deer numbers over the past twenty to thirty years. Management is also concerned with declining deer populations, especially in light of the RPA goal of increasing mule deer populations 20 percent. If the problems behind declining deer numbers are on Forest land, the Forest Service has the opportunity to correct

them. If, however, a given herd or a significant portion of a herd spends time on lands administered by others, the Inyo National Forest has less control of the situation.

Deer are found throughout the Forest. Eight herds spend at least part of the year on Forest land. The density of resident populations (those that live on the Forest year-round) is low. Six deer per square mile is an estimated average density on high-quality summer range.

Most of the deer on the Forest are migratory. They winter primarily in the Owens Valley, Pizona Hills, or Walker River drainage on Bureau of Land Management lands and spend the summers at higher elevations, both on the Inyo and west of the Sierra crest. Deer densities on the winter range are considerably higher (up to 120 deer per square mile) than on the summer range. The Inyo has 112,119 acres of key winter range, most of it on the east slope of the Sierra Nevada between 4,500 and 6,000 feet elevation. There is also winter range on land administered by the Bureau of Land Management, adjacent to National Forest land.

The current population of mule deer on the Forest and adjacent (primarily Bureau of Land Management) lands is estimated at 20,200. The current population of those deer that summer and/or winter on National Forest land is 12,000. The maximum potential habitat capability of Forest lands is roughly estimated at 16,000 animals. Any increases in habitat capability would result directly from habitat improvement or indirectly from the management of timber, recreation, and livestock grazing so that deer habitat quality is enhanced.

The reasons for declining deer numbers are not known, but the CDFG is studying the situation in cooperation with other agencies, including the Forest Service. Poor-quality fawning habitat, human disturbance of key deer habitat, and changes in vegetative diversity are possible contributing factors related to management activities. Predation may also be a factor, and there is some concern that bucks in some areas are over-hunted. Direct and social competition with domestic livestock have also been proposed as contributing factors. The factors that limit deer populations must be identified, and a coordinated effort made to correct problems, if deer numbers are to be maintained or increased.

Deer hunting amounted to 25,200 WFUDs in 1982; the demand for hunting has remained fairly stable from year to year, and is expected to follow that pattern if deer numbers remain constant. If, however, the deer population were to grow and hunter success were to increase, demand would be expected to increase accordingly. On the other hand, if the deer population were to decline, the demand for hunting would be expected to follow suit.

The California Department of Fish and Game has prepared deer herd management plans for each of the eight herds that use Inyo National Forest lands. Those plans and the goals they envision are as follows:

<u>Buttermilk Herd</u>: This herd also is almost entirely migratory. Winter range is located in the southern Round Valley and a majority of the deer cross the Sierra Nevada crest and summer on the west side. Approximately

35 percent of the combined Sherwin-Buttermilk deer cross the Sierra over Bishop and Paiute Passes.

Maintain the population near current levels (3,000 deer) to maximize recreational hunting opportunities by maintaining the current quality and quantity of habitat and preventing deleterious impacts from future land uses to winter, migration and staging habitats.

Casa Diablo Herd: The Casa Diablo herd winters in the Benton, Hammil and Chalfant Valley areas. The majority of this herd migrates around the south end of the Glass Mountains and moves north to a staging area in the upper Owens River. They then migrate to summer habitats on the east side of the Sierra between Deadman Creek and Lee Vining Canyon. Important fawning and summer habitats have been identified in the Parker-Walker, Lee Vining Creek, and Glass Creek drainages. A small portion of this herd summers west of the Sierra Nevada crest, in the Glass Mountains and White Mountains.

The current population is estimated at 1,500 deer; the goal is to increase that population to 2,245 deer by applying flexible harvest levels; and by improving habitat and reducing competition and disturbance on key summer, intermediate, and winter range habitats.

East Walker Herd: The 1984 pre-season population was approximately 3,040 deer; the goal for this herd would be approximately 5,050 deer. Most increases would be achieved through range enhancement and reduced competition for forage on lands outside the Inyo National Forest.

Goodale Herd: The Goodale herd winters along the Sierra Nevada front country and summers west of the Sierra Nevada, mostly in Sequoia-Kings Canyon National Park.

The current population is estimated at 2,600 deer; goals are expressed as buck, doe, and fawn ratios for the northern and southern subunits. The northern subunit will be maintained to maximize recreational hunting opportunities. The southern subunit will be managed with emphasis on older age-class bucks for viewing and late-season quota hunting. Habitat goals are to maintain the current quality and quantity of habitat and to prevent deleterious impacts of future land uses.

Inyo-White Mountains Herd: Maintain current landownership status, improve habitat conditions where possible, and prevent deleterious impacts from future land uses (there is insufficient census information for population goals).

Monache Herd: The Monache deer herd summers on the Inyo and Sequoia National Forests and the Sequoia-Kings Canyon National Park. One winter range is located on the Eastern Escarpment of the Sierra Nevada. Another is located in Long Valley adjacent to the Sequoia National Forest. The Monache Meadows area is considered an important staging area and summer area. In addition several migration routes pass through this area.

The primary management goal is to develop and maintain a spring population of 8,000 to 9,000 animals (an increase of approximately 2,000 deer over

current levels). This population could be achieved through habitat improvement and land-use priorities that favor deer.

Mono Lake Herd: Research on this herd is being initiated. The current fall population is estimated at 3,000 deer; the goal is to increase that number to 4,000 animals by improving key habitats, reducing competition with livestock and wild horses for forage, and improving sex and age ratios through flexible harvest levels.

Sherwin Grade Herd: The Sherwin Grade herd is almost entirely migratory. Winter range is located in Round Valley and summer range is predominantly west of the Sierra Nevada Crest. Important migration corridors extend north between Round Valley and the Sherwin staging area, Solitude Canyon, Mammoth Pass and Deadman Pass. A major staging area exists southwest of U.S. 395 between Sherwin Creek and Convict Creek. Approximately 65 percent of the combined Sherwin-Buttermilk herd migrate to the north and over various passes crossing the crest.

Maintain the current population (2,300 to 2,400 deer) by restoring the quality of winter range, acquiring key winter range now in private ownership, improving the sex and age ratios and maintaining the quality and quantity of winter, staging and migration habitats.

Bald eagle: The bald eagle is federally and state-listed as an endangered species in California. The Forest Service is concerned with managing its habitat so that the species can recover from endangered status. Opportunities focus on coordinating on-Forest activities, especially winter recreation, with the needs of this species. Management direction for the protection of bald eagle habitat in the Plan is required.

The Inyo and adjacent lands have a small amount of bald eagle wintering habitat. Approximately twenty to thirty birds winter on or near Inyo National Forest land. Winter bird counts are so variable that it is difficult to know whether the number is increasing or decreasing over the long term. Eagles use lakes prior to their freezing in the fall and after thaws in the spring. The heaviest used wintering areas are Crowley Lake, the Owens River and June Lake Loop. One roost site is suspected in the June Lake Loop that supports up to ten eagles. An additional roost site is suspected in the Owens River Gorge that is not on lands administered by the Forest. There is potential for conflict between bald eagle habitat needs and recreation development in wintering areas.

Peregrine falcon: The peregrine falcon is federally and state-listed as an endangered species; the Forest Service is concerned with managing its habitat so that the species can be recovered from endangered status. The Forest has completed a recovery plan for this species. Management direction for peregrine falcon protection in the Plan is required.

Although peregrine falcons have historically nested on the Forest, the nearest occupied nest sites are found in Yosemite Valley and Hetch Hetchy Canyon. Eight fledglings were reintroduced (by hacking) to the Forest in 1983 and 1984. A third hacking attempt failed in 1985. Birds that were hacked have been observed sporadically since this endeavor. Historic nest sites existed in the upper Owens River, June Lake Loop and Negit Island.

Excellent nesting habitat also exists in Lee Vining and Lundy Canyons. An additional hacking is scheduled to begin at Crowley Lake in 1988.

The maximum habitat capacity for peregrine falcons on the Forest is estimated at four nest sites. There are no apparent conflicts between peregrine falcon habitat needs and the management of other resources.

Goshawk: The goshawk is listed as a sensitive species in Region 5. The major management concerns are to determine the number of goshawk nest sites needed to maintain population viability, and the number of these sites that should be maintained in stands of suitable timber.

The number of sites maintained in suitable timber is a concern on the Forest because fifty acres of timber must be left standing around each protected nest site to meet management requirements. Inyo National Forest lands are located at the southeastern limit of goshawk range. Recreation use and consequent human disturbance are high, forests are sparse, and telemetric studies indicate that goshawks on the Forest require at least a 125-acre territory surrounding their nests. It would be more desirable, therefore, to provide 125 acres around each nest site. Each nest site can represent a significant cost in terms of timber unavailable for harvest. On the other hand, each nest site lost brings the population of goshawks on the Forest closer to the minimum management level. In some areas goshawks use open stands as nesting habitats. This is especially true in the White Mountains and portions of the Glass Mountains.

Goshawks are found in mature and old growth stands of forest. Surveys have located approximately 25 active nest sites on the Forest (15 in suitable timber, 10 elsewhere). These surveys have concentrated on suitable timber stands, as those are the areas in which conflicts are most likely to occur. Another 25 undiscovered sites are estimated to exist on lands in wilderness or noncommercial timber. Available data is insufficient to determine whether the goshawk population on the Forest is changing.

Factors limiting the amount and quality of goshawk habitat are lack of mature timber, human disturbance (an indirect result of improved access), and insufficient vegetative diversity in the forest surrounding the nest site.

The Forest has the opportunity to address the need for goshawk habitat management in the Plan.

Blue grouse: The primary concern is habitat protection for this species. Blue grouse on the Inyo are typically found in forest and shrub habitats associated with riparian areas at high elevations in the Sierra Nevada and White Mountains. Direction for the protection and maintenance of habitat may eventually be needed, but it is not of urgent concern.

Little is known about population numbers and trends. There is some demand on the Forest for this species as a game bird.

Sage grouse: The major issue and concern is that sage grouse populations are declining. The Forest has the opportunity in the Plan to identify research needs and to establish direction for the management of sage grouse habitat.

Sage grouse are found in the extensive sagebrush habitats on the Forest. Low sagebrush is interspersed with big sagebrush and wet meadows, both of which types appear to be important aspects of sage grouse habitat. Big sagebrush serves as a winter cover and food source; meadows provide summer feed and strutting grounds for courtship activities.

The population of birds on or near the Forest is estimated at 1,500, located primarily in the Lake Crowley basin and the White Mountains. The maximum current habitat capacity for sage grouse on the Forest is estimated at 2,000 birds.

The reasons for population decline are not completely understood. It is suspected that certain livestock grazing practices and wildfire suppression have contributed to the increasing density of sagebrush and a declining amount of herbaceous understory which are, in turn, reducing sage grouse habitat capability. Studies are currently being conducted to determine sage grouse habitat requirements. Hunting also appears to be a factor in sage grouse declines on the Inyo and adjacent lands. Between 1982 and 1986 the sage grouse population at Crowley Lake doubled in the absence of hunting from 500 to 1000 birds.

There is a demand for this species as a game bird, and that demand is expected to continue. However, with the decline of grouse populations, the CDFG closed the hunting season from 1983 through 1986. The hunt was opened under permit in 1987.

Spotted owl and great gray owl: There is little data about the occurrence of these species on the Forest. The Forest has the opportunity to identify inventory and research needs regarding these species and to establish in the Plan the need for habitat protection.

Spotted owls are considered sensitive in Region 5 of the Forest Service. Intensive spotted owl surveys were done in the Mammoth Lakes area during the summer of 1987. No responses were elicited. Potential spotted owl habitat does exist in the Monache area. Nest sites have been located on the Sequoia National Forest adjacent to the Inyo.

Two spotted owl sightings on the Mammoth Ranger District have been documented. The demand for spotted owl habitat is high, as its habitat is decreasing throughout the timbered areas of California and the Pacific Northwest. Spotted owls require large tracts of old growth timber, and old growth is also a prime potential source of wood products. There is considerable concern that, without special management, spotted owls could become threatened or endangered within the next 50 years. Red fir stands have the highest potential for spotted owl nesting habitat on the Inyo.

Great gray owls are listed as sensitive by the Forest Service in California and endangered by the state of California. Nesting records exist for lower elevation sites in Yosemite National Park. The southernmost breeding occurrence on the east side of the Sierra is documented on the Toiyabe National Forest.

Great gray owl sightings on the Forest have not been verified. There are few potential conflicts between the habitat needs of that species and the

management of other resources because most of the suitable habitats are in wilderness. Livestock grazing in mountain meadows may have an effect on the great gray owl prey base.

Nelson (desert) mountain sheep: The same parties that are interested in Sierra Nevada mountain sheep are also interested in the Nelson mountain sheep. There is also significant public interest in Nelson mountain sheep as a game species. In other states, permits to shoot a ram have been auctioned for bid prices exceeding $60,000. This interest is expected to continue.

The Forest has the opportunity in the planning process to address the habitat needs of Nelson mountain sheep and the possible trade-offs between these needs and other resource opportunities.

Nelson mountain sheep sheep are located in the White and Inyo Mountains. The White Mountain herd has approximately 100 sheep and appears to be growing. Little is known about the Inyo herd, but the population is roughly estimated at thirty animals.

Nelson mountain sheep numbers could be affected by human disturbance and disease transmission from domestic livestock. Mountain sheep seek the security of rough, steep terrain. In the White Mountains, however, they leave that kind of terrain to feed on the meadows and benches. If recreation use in the White Mountains were to increase, mountain sheep might confine themselves to the rough, steep slopes. That behavior would, in effect, reduce the amount of foraging habitat available. Increasing recreation use could also bring recreation stock into contact with sheep, involving the possibility of disease transmission.

A potentially significant source of human disturbance in the White Mountains is hang gliding. Mountain sheep have been observed to run for cover when a hang glider comes too close. The most likely stimulus for increased recreation use other than hang gliding would be wilderness designation for all or part of that range.

Nelson mountain sheep have been emphasized in recent years throughout their range in the western United States. Overall numbers are increasing as sheep are reintroduced into historical range and as human disturbance and livestock interactions are controlled. The demand for Nelson mountain sheep is reflected in the public issues cited above. As with Sierra Nevada mountain sheep, the establishment of several separate populations would help ensure protection from epizootic diseases. Total potential population is between 300 and 400 sheep.

Sierra Nevada (California) mountain sheep: This species is listed as sensitive by the Forest Service and threatened by the state of California. The public is interested primarily in the reintroduction of Sierra Nevada mountain sheep into historical range; that interest is expected to increase. Two sheep societies (The Society for the Conservation of Bighorn Sheep and the Desert Bighorn Sheep Council) and the CDFG emphasize sheep management. Articles appear regularly in the press concerning transplants and related topics. Forest Service management is also concerned with mountain sheep management and has participated extensively both in studies of sheep populations on the Inyo and in reintroduction efforts.

Current management emphasizes restrictions on recreation use in mountain habitat. An interagency recovery and conservation plan that identifies management opportunities for Sierra Nevada mountain sheep has also been written. The Forest has the opportunities to establish additional direction in the Plan addressing mountain habitat needs and to cooperate with the California Department of Fish and Game in recovery efforts.

Virtually all the Sierra Nevada mountain in California are found on the Inyo National Forest. The sheep winter on the Forest along the Eastern Escarpment of the Sierra Nevada; they summer at higher elevations of the Forest and inside Sequoia and Kings Canyon National Parks.

There are five herds on the Forest; two of these are naturally distributed, and the other three have been distributed by reintroduction. The total population of Sierra mountain sheep in these herds is estimated at 300 and is growing. If all existing and identified potential habitat were filled to capacity, there would be about 700 and 1,000 sheep on the Forest. These sheep would ideally be found in many separate populations to ensure protection from epizootic diseases.

There is potential for mountain sheep habitat needs to conflict with recreation and domestic livestock grazing. Human disturbance can affect the sheep by displacing them from important habitats. Domestic livestock represent the threat of disease transmission, as mountain are susceptible to certain diseases transmissible by domestic sheep. Additional study may show that cattle, horses, mules, and llamas can also transmit diseases to wild sheep. Other factors that may limit Sierra mountain sheep range are the reduced productivity of overmature forage, the obstruction of access routes by human developments, and a limited amount of suitable habitat for reintroduction.

The demand for Sierra mountain sheep is implicit in the issues and concerns listed above.

Other special interest species: Although the species in this category require a variety of habitats, the primary concern associated with each species is the protection of that habitat to ensure population viability.

There is an opportunity to establish direction for the protection and maintenance of habitat for these species in the Plan.

Population figures are known only for tule elk: there are approximately 600 elk in the Owens Valley, most of which spend at least part of the year on Forest land. Elk numbers are increasing, and animals are removed every few years for transplant to other areas.

Riparian area-dependent species (yellow warbler): The management of riparian habitat to assure the viability of dependent wildlife is both a public issue and a management concern.

Riparian vegetation (including wet meadows) covers less than two percent of the Inyo National Forest. The population and trend of riparian area-dependent wildlife species has been declining over the years due to the deterioration and exploitation of these habitats. The amount and condition

of riparian habitat declines where riparian vegetation is affected by ground disturbance, vegetation manipulation, or streamflow reduction. Approximately 20 percent of the original stream habitat in the Mono Basin and Owens Valley has been eliminated due to water diversions for hydroelectric generation, irrigation, and domestic use.

Snag-dependent species (Williamson sapsucker and hairy woodpecker): The primary concern about this group of species is with maintaining enough standing dead trees (snags), down logs, and habitat diversity to ensure population viability. The Forest has the opportunity to establish direction for snag management in the Plan.

Fuelwood gathering is the major threat to snag-dependent species. In areas where vehicle access is easy, many snags have already been removed illegally for fuelwood. The Forest Service can create snags, protect them, and educate the public about their importance, but some people will resist these efforts and continue to cut them. This problem is especially serious because natural snag recruitment on the Inyo is slow, and snags in many areas are in such short supply that the viability of snag-dependent wildlife populations may already be threatened.

In addition to standing dead trees, cavity-nesting wildlife rely on down and dead woody material for foraging and other needs. Although the Forest Service prohibits the cutting of snags, down and dead material is a legal source of public fuelwood. Increasing energy costs and the recreational value of wood gathering have resulted in the virtual elimination of dead and down wood in accessible areas.

The demand for snags on the Forest is high relative to supply. The availability of snags and down, dead wood could be a major factor limiting wildlife habitat capability of forested environments on the Inyo.

Maintaining the quality of riparian habitat is a critical wildlife habitat concern on the Forest. Since nearly all species are dependent on those areas at some time in their life cycle, the development or alteration of these resources probably has significant potential to adversely affect wildlife species.

The Forest Service is concerned with managing riparian areas not only for wildlife habitat, however. Riparian habitat receives attention in the Planning process as a resource in itself because riparian area-dependent resources are so important and diverse. A more detailed discussion is found under the separate heading of Riparian Areas.

Species dependent on early-middle seral stages of brush: (See sage grouse.)

Species dependent on older seral stages of coniferous forest: (See Goshawk.)

IV

ENVIRONMENTAL CONSEQUENCES

CHAPTER IV. ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This chapter describes the environmental consequences of implementing the various Forest planning alternatives. It also provides the scientific and analytical basis for the comparative discussion of alternatives in Chapter II.

The assessment of environmental consequences helps the Forest evaluate each alternative in terms of its contribution to net public benefit, a measure of the overall value to the American public of a given alternative. Both priced benefits (commodities) and non-priced benefits (amenities) are considered in the determination of net public benefit.

Environmental consequences are described in terms of changes from the base year 1982 situation, unless otherwise stated under individual resource headings.

The severity of environmental consequences is limited because the only alternatives considered were those that ensure long-term productivity of the land. Forest-wide Standards and Guidelines addressing the various indicators of long-term productivity such as soil stability, wildlife population viability, vegetative diversity were developed early in the planning process and guided the development of alternatives. A detailed discussion of Forest-wide Standards and Guidelines is in Chapter IV of the Plan.

Environmental consequences are discussed for each resource. Each resource section describes the Forest activities that have major effects on that resource, how the consequences of these activities are assessed, the indicators used to assess the effects, the cause/effect relationships between the indicators and the resource, the assumptions important to the analysis (including possible mitigation measures), and consequences common to all alternatives. Consequences of activities that vary by alternative are discussed by alternative.

Fifty-year output projections were developed both by application of the linear programming model, FORPLAN, and by analysis outside of that model. The FORPLAN analysis is described in Chapter II and in Appendix B, with more detail in the planning records. Information about methods used to generate figures outside the model are contained in the planning records.

Chapter IV concludes with discussions of mitigation measures, unavoidable impacts, short-term impacts vs. long-term land productivity, irreversible and irretrievable commitments of resources, potential conflicts with other agency management plans, and energy requirements and conservation potential by alternative.

DIRECT, INDIRECT, AND CUMULATIVE ENVIRONMENTAL CONSEQUENCES

ECONOMIC ENVIRONMENT

Introduction

The Inyo National Forest contributes to the revenues of each of the seven counties containing National Forest System land through budget expenditures, Receipts Act payments, and Payments in Lieu of Tax (PILT) fees. The Forest also adds dollars to the economy of each county by attracting tourists to the area and generating jobs.

Although the seven-county area is not economically dependent upon the Forest, Forest management decisions have direct economic effects on ranchers, recreation permittees, and others who use National Forest System lands for their livelihood. Indirect impacts are found in the support of the economic infrastructure through special-use permits, recreation opportunities, landownership adjustments, energy and mineral activities, and utility line rights-of-way.

The economic consequences of implementing the alternatives can be described in various ways. A summary of key economic indicators is discussed in the following section. For a more comprehensive list of economic variables see Chapter II. Appendix B discusses in depth the factors and methodologies used in the economic analysis.

Indicators

1. Present Net Value (PNV)
2. Area employment and income
3. Receipts Act payments
4. Forest budget
5. Net cash flow.

Present Net Value is a measure of relative economic efficiency. PNV represents the difference between all priced benefits and all management costs. The projected costs and benefits for future decades are discounted to the 1982 base level because the discounting of values to a common base facilitates the comparison of benefits and costs that occur at different times. The Forest planning model (FORPLAN) allocated land uses and scheduled activities with the objective of maximizing the PNV of each alternative, subject to the set of objectives and requirements unique to the alternative.

The production of goods and services from the Inyo National Forest stimulates the local economy by generating income and employment. The results shown include both direct employment by the Forest and employment in the private sector induced by Forest activities.

Twenty-five percent of Forest-generated revenues to the federal treasury are returned to the counties to provide support for roads and schools.

The projected Forest budget represents Congressional appropriations for Forest management, plus cooperative dollars such as Green-sticker money from

the state to build OHV routes. Green sticker money is derived from the California Department of Motor Vehicles in lieu of license plate fees for OHV registration.

The difference between Forest-generated revenues to the federal treasury and the federal costs of managing the Forest is called net cash flow. Returns to the treasury are generated by market resources such as minerals, timber, grazing, and developed recreation and from special use permit fees.

Assumptions

1. The basic economic structure of the Forest's primary zone of influence (Inyo and Mono Counties) will not change substantially; the retail sales and service sectors will maintain their relative importance and their close tie to recreation and tourism.

2. The population of Southern California will continue to grow, and its pattern of recreational use will not change substantially.

3. The broad existing landownership patterns in the Eastern Sierra will be maintained.

CEE is the most cost-efficient alternative because only the minimum management requirements and minimum implementation requirements were applied as constraints on maximizing PNV. CEE is, therefore, the basis for comparison of PNV by alternative.

Table 62
Summary of Economic Indicators
for the Planning Period

	Alternatives					
Indicator	PRF	CUR	RPA	CEE	AMN	AMB
PNV (MM$)	3170.8	2559.3	3310.7	3484.1	2922.4	3084.1
Employment, first decade (M person years)	1.3	1.1	1.4	1.5	1.1	1.1
Receipts Acts Payments ($MM)	1.0	1.0	1.4	1.0	0.7	0.9
Total Forest Budget ($MM)	12.5	10.0	12.4	11.9	12.9	12.6
Net Cash Flow ($MM)	-9.4	-6.9	-7.8	-8.6	-11.0	-9.9

Consequences That Vary by Alternative

PRF: (Preferred) Increased developed and dispersed recreation programs support the relatively large PNV. Limitations on full ski area development and increased costs of timber harvest because of uneven-aged timber management west of U.S. 395 and no harvest in the San Joaquin area cause most of the loss in PNV as compared to CEE. However, non-priced benefits such as improved wildlife habitat, reduced impacts on mule deer, and improved visual quality offset the the reduced PNV in contributing to net public benefit.

This alternative requires an increase from current budget levels to provide increased recreation opportunities at standard levels and additional investments in range, wildlife, and watershed programs to provide a broad range of public benefits.

The diverse and increased Forest outputs of this alternative represent increased returns to the treasury, higher Receipts Act payments to the local counties, and increased employment and benefits to the local economy. Indicators show this alternative to be economically efficient; however, increased costs and the emphasis on both market and non-market outputs would result in the largest fifth-decade negative cash flow of any alternative.

CUR: (Current Program) PNV is lowest in this alternative, as are returns to the treasury, Receipts Acts payments to the counties, and total Forest budget. The employment indicator is second-lowest among the alternatives; it is not the lowest only because of the relative emphasis on employment-generating market resources. Budget limitations are directly responsible for the low PNV. The primary factors contributing to the low PNV are the limitations on capital investment for increased recreation development and maintenance of recreation facilities at low-standard levels, and the maintenance of a programmed timber below above the most cost-efficient level. Non-market resources such as dispersed recreation and wildlife are provided well below the level of projected public demand. The low budget and high relative emphasis on market outputs, however, provide this alternative with the smallest negative cash flow of all alternatives.

RPA: (1980 RPA Program) This alternative provides a broad range of resource outputs at high levels with an emphasis on market resources. The total Forest budget is highest for this alternative. Potential conflicts among resources are also high, as most resources are managed at high intensity on the maximum available acreage. The timber harvest schedule requires cutting in some existing concentrated recreation areas, key wildlife areas, and visually sensitive areas. Alpine ski area development occurs in conjunction with timber harvest, and both activities conflict with mule deer migration corridors. The loss of non-priced benefits, such as visual quality and recreation quality, would reduce the net public benefit under such an intensive management program. The PNV of this alternative is, however, second only to CEE. The reduction in PNV relative to the CEE alternative is associated with the increased cost of timber harvest, reduced developed recreation opportunities, and the lack of recommended wilderness. Receipts Act payments to local counties are highest in this alternative, due primarily to increased timber sales and developed recreation receipts. The emphasis on market outputs also increases employment in the local economy. While this

alternative ranks high in many economic variables, it does so at the expense of important amenity values and to the detriment of net public benefit.

CEE: (Maximize Cost-Efficiency) Economic efficiency is maximized in this alternative by scheduling timber harvest at economically efficient levels and maximizing the recreation program. This alternative has the second-lowest first decade total budget, yet equals the PRF total budget in the fifth decade because of the large recreation program and the cost of providing standard-level recreational services. Employment projections for the local economy are highest in this alternative. There is some question, however, of the ability of the Mammoth and June Lake communities to expand to support the full development of potential ski areas as proposed in this alternative.

Receipts Act payments are second to RPA because RPA emphasizes market outputs while CEE emphasizes both market outputs and non-market priced outputs such as wilderness, wildlife-related, and other dispersed recreation opportunities. Even with this emphasis, however, some timber harvest would occur within concentrated recreation areas and in sensitive wildlife habitat in the Monache area. The CEE alternative would provide payments to the local Counties comparable to PRF and would incur a negative net cash flow second only to PRF.

AMN: (Maximize All Amenities) Amenity and non-market resource benefits are emphasized in this alternative at the expense of market resources and economic efficiency. PNV is the lowest of any but the CUR alternative. Limited ski area expansion, reduced timber harvest and livestock grazing, and the large acreage recommended for wilderness or limited access management account for most of the reduction in PNV relative to CEE. The large first-decade total budget is needed to provide increased wilderness opportunities through capital investments in trails and trailhead facilities. The second-lowest fifth period total budget represents the relatively low cost of the developed-recreation and timber-harvest programs. Employment and Receipts Act payments to the counties are lowest of any alternative in the first decade. The negative net cash flow drops from the largest in the first decade to the third-smallest in the fifth decade, primarily due to the smaller total budget rather than large returns to the treasury. The losses in economic efficiency and local income resulting from this alternative would offset the gains in visual quality, wilderness acreage, primitive and semiprimitive recreation opportunities, and wildlife habitat quality.

AMB: (Emphasize Wildlife and Recreation) The amenity emphasis of this alternative is offset by increases in priced recreation outputs; although the timber and range programs are reduced, the PNV of this alternative ranks higher than that of AMN. Timber, range, and developed-recreation outputs are, however, restricted to levels below the most economically efficient level represented by CEE. Local employment indicates no significant increase in numbers. Receipts Act payments to counties are slightly lower than CUR in the first decade. As in AMN, a large first-decade total budget and a lower fifth-decade total budget are the primary factors that contribute to improving the negative net cash flow from the second-largest to second-smallest between the first and fifth decades. The lower fifth-decade budget represents a reduction in costly market resource programs in favor of amenity and non-market values.

SOCIAL ENVIRONMENT

Introduction

The six local social groups most likely to be affected by alternative outputs, land allocations, management practices, and special uses of the Inyo National Forest are identified as long-term residents, regional recreationists, seasonal employees, special-use permittees, American Indians, and retirees. Other sensitive groups such as women, the handicapped, the elderly, and minorities are distributed within the six identified groups. None of the alternatives will discriminate against any particular group.

The alternatives do raise social issues, however. When social groups within the Forest's primary zone of influence differ significantly in their needs and expectations for Forest resource use, there is potential for conflict. For example, alternatives that emphasize non-recreation market outputs (timber harvest, grazing, and mineral and energy development) are most acceptable to the long-time residents, Native Americans, and others whose livelihood is linked to those resources. On the other hand, alternatives that emphasize non-market outputs (dispersed recreation, wilderness, scenic quality, wildlife, and a natural environment) are most acceptable to the special-use permittees, regional recreationists, seasonal employees, and retirees who relate to the Forest primarily as a source of aesthetic values. Alternatives that emphasize developed recreation are generally acceptable to most of the identified groups.

Indicators

The consequences of alternatives will vary by group. Social attributes, such as lifestyle and quality of life, are the variables used to evaluate these consequences. These variables, though significant, are not in themselves quantifiable or measurable. Forest activities associated with each social variable are, therefore, used as indicators of the effects of each alternative on social variables.

The relationship of the social variables and the indicators of effects on those variables are displayed in Table 63. Tables 64 through 67 display the effects of the alternatives on social variables by social group.

Table 63
Social Variables and Indicators

Variables (Social Attributes)	Indicators (Forest Activities)
Lifestyle Patterns of work and leisure, customs and traditions; relationships with family, friends, and others	Timber harvest Livestock grazing Recreation development Mineral and energy uses Game animal management
Attitudes, Beliefs, and Values Feelings, preferences, and expectations that people have for the land and its uses	Air quality Water quality Visual quality Wilderness Wildlife habitat diversity Cultural resources
Community Stability and Cohesion The degree of cooperation between segments of the community in approaching problems or realizing shared goals and the lack of social conflict. Stability depends upon the rate of change with which people can cope.	Landownership adjustments Special use permits Interpretive services Personal safety Fire protection Recreation development
Population and Land Use The size, rate of change, and composition of the population and their effects on land use	Roads Water yield Special use permits Recreation development Landownership adjustments

Table 64
Summary of Alternative Effects on Social Groups for the Lifestyle Variable

	Alternatives					
Social Group	PRF	CUR	RPA	CEE	AMN	AMB
Longtime Resident	GC	GC	SC	GC	LC	GC
Regional Recreationist	GC	LC	GC	SC	LC	GC
Seasonal Employee	GC	LC	GC	SC	LC	GC
Special use Permittee	GC	LC	GC	SC	LC	GC
American Indian	GC	GC	GC	GC	LC	GC
Retiree	GC	GC	LC	GC	LC	GC

LC - Least coincides with group's lifestyle.
GC - Generally coincides with group's lifestyle.
SC - Substantially coincides with group's lifestyle.

Table 65
Summary of Alternative Effects on Social Groups for the Attitude, Beliefs and Values Variable

	Alternatives					
Social Group	PRF	CUR	RPA	CEE	AMN	AMB
Longtime Resident	GC	GC	SC	GC	LC	GC
Regional Recreationist	SC	LC	GC	SC	LC	GC
Seasonal Employee	SC	LC	GC	SC	LC	GC
Special use Permittee	SC	LC	GC	SC	LC	GC
American Indian	GC	GC	GC	GC	LC	GC
Retiree	SC	GC	GC	GC	LC	GC

LC - Least coincides with group's attitudes, beliefs, and values.
GC - Generally coincides with group's attitudes, beliefs, and values.
SC - Substantially coincides with group's attitudes, beliefs, and values.

Table 66
Summary of Alternative Effects on Social Groups
for the Community Stability* and Cohesion Variable

	Alternatives					
Social Group	PRF	CUR	RPA	CEE	AMN	AMB
Longtime Resident	S	S	S	S	LS	S
Regional Recreationist	N/A	N/A	N/A	N/A	N/A	N/A
Seasonal Employee	S	LS	S	LS	LS	S
Special use Permittee	S	LS	LS	LS	LS	S
American Indian	S	LS	S	S	LS	S
Retiree	S	S	S	LS	LS	S

LS - Alternative would be less stable and reduce community cohesiveness by creating polarization between the community and the group.
S - Alternative would create stability and cohesiveness between the group and the community.
NA - Not applicable to the group since it is not part of the community.

*Communities are most stable and cohesive under alternatives that continue the modest rate of growth currently found within the primary Forest zone of influence. Alternatives that retard community growth or stimulate an increased rate of growth are considered less stable. The Forest activity most likely to affect community growth is alpine ski area development in the Mammoth and June Lake areas.

Table 67
Summary of Alternative Effects on Social Groups for Population and Land Use Changes*

	Alternatives					
Social Group	**PRF**	**CUR**	**RPA**	**CEE**	**AMN**	**AMB**
Longtime Resident	S	S	S	S	LS	S
Regional Recreationist	N/A	N/A	N/A	N/A	N/A	N/A
Seasonal Employee	S	LS	LS	LS	LS	S
Special use Permittee	S	S	LS	LS	LS	S
American Indian	S	S	S	S	LS	S
Retiree	S	S	S	S	LS	S

LS - Alternative would create less stable population growth than recent trends.
S - Alternative would maintain stable and manageable population growth conditions based on recent trends.
NA - Not applicable to the group since it is not part of the community.

*Population growth which is lower than or considerably higher than recent historic levels represents less stable population growth. Increased population growth often entails increased land use needs and conflicting land uses.

Assumptions

Social variables and indicators are used to evaluate the potential impacts of the Forest alternatives on the six identified social groups. The relationships of social variables and indicators with social groups are based on assumptions about shared activities, interests, concerns, and values. The social groups are not necessarily mutually exclusive, as individual persons may belong to more than one group, may support variables uncharacteristic of the group, or may move from one group to another. General statements of potential impacts on social groups are therefore used only as a basis on which to compare the the alternatives. They are not intended to indicate potential impacts on individuals within those groups.

Likewise, although the Forest activities selected as indicators provide opportunities to predict, measure, and monitor the effects of alternatives, these indicators can affect several different social variables.
It is assumed that continued growth in recreation use and diversity of recreational opportunities is important both to groups who live in the area and those who visit.

It is assumed that any potential effects of the alternatives on American Indian cultural or religious sites would be adequately mitigated by the coordination requirements found in the Forest-wide Standards and Guidelines common to all alternatives.

Consequences That Vary by Alternative

PRF: (Preferred) This alternative would produce high-level recreation outputs while maintaining or increasing wilderness, wildlife habitat, and visual quality. These factors would maintain the lifestyle and the attitudes, beliefs and values of people associated economically with the natural resources such as longtime residents, seasonal employees, and American Indians. Maintaining or increasing market outputs may concern those who depend on the area for recreational, visual, and environmental quality values.

Regional recreationists, special use permittees, and retirees would be served by the open space, scenic values, solitude, and recreational opportunities represented by 172,600 acres of new wilderness, increases in fish and wildlife programs, and increases in facilities for skiing and developed recreation.

Community stability and cohesion and population growth would be maintained or increased. All social groups would be accommodated by controlled increases in recreational opportunities and the maintenance of alpine ski area potential. Population increases would continue at current or slightly accelerated rates acceptable to affected communities (based on community plans).

This alternative could support recent historic rates of population growth, primarily stimulated by increases in recreation use. There would be a shift of approximately 13,000 acres from a primary emphasis on timber production to other resource uses. American Indians would find increased employment associated with the recreational increases.

CUR: (Current Program) Although the current management program is generally supported by all social groups, budget limitations over five decades would prevent increases and allow for declining levels of fuelwood, grazing, fire protection, recreation, and wildlife habitat. For this reason, this alternative presents some serious potential effects. The recreation program is currently managed at low-standard levels, and no new construction of summer recreation facilities is occurring. This situation would be projected across the next fifty years. Consequently, recreation-related employment opportunities would be reduced after the first decade and continue to decline through the planning horizon. Regional recreationists, seasonal employees, and special use permittees would find diminished recreational opportunities, facilities, services, and employment.

Long-term residents and others linked economically to the use of natural resources would be served by the slight increases in timber outputs, the maintenance of near-current livestock grazing outputs, and the potential for substantial increases in mineral development.

The needs of social groups who use the Forest primarily for recreation would not be met (regional recreationists, special use permittees, seasonal employees, and retirees). With the severe limitations on summer recreation growth levied by budgetary restraints, facilities would be crowded, recreation seasons would be shortened, and recreational quality would suffer.

Community stability and cohesion in communities based on timber, livestock grazing, or mineral and energy production should be maintained since these Forest outputs would be maintained or increased.

Community stability and cohesion in recreation-dependent communities would be enhanced by moderate ski area development, but those benefits would be offset by the deterioration of the summer recreation program. Community stability and cohesion would be reduced as summer recreation demand is not met and tourism subsides.

Population growth and land use changes would be maintained at historic levels through the first period, but would be expected to slow as recreational opportunities declined in the lated decades. American Indians would find future losses in seasonal employment and reduced overall employment opportunity.

RPA: (1980 RPA Program) High market and non-market Forest outputs would accommodate the employment needs of long-time residents and other individuals associated economically with Forest outputs. Significant increases in market outputs, however, would generally conflict with those in all social groups whose lifestyle, beliefs, and values are linked to scenic quality, open space, and opportunities for solitude. This is true primarily because timber harvest would be conducted on the steeper, more visible slopes and in some concentrated recreation areas, and because there would be no new wilderness recommendations. Increased market outputs would come at great loss to scenic quality and diversity of amenity values.

The needs of long-term residents and others associated economically with natural resources would be met due to the high-level production of Forest commodities. In addition, most seasonal employees and regional recreationists would be served by increases in alpine skiing opportunities and developed summer recreation facilities. Most regional recreationists, special use permittees, seasonal employees, American Indians, and retirees would also be served because of increased opportunities. However, the increased intensity of management would sharply contrast with historic management and would detract from open space, scenic, and general environmental quality values.

There would be population increases, land-use changes, and increased land-use conflicts associated with the increased outputs. Community stability and cohesion would be weakened by changes in Forest policies. Population growth and rate of change could exceed the ability of the recreationally oriented communities to adapt. American Indians could benefit from better employment opportunities.

CEE: (Maximize Cost-Efficiency) This alternative has the highest developed and dispersed recreation outputs in response to projected demand. Regional recreationists, seasonal employees, special use permittees, and retirees

would find increased recreational diversity and employment opportunity. Resident trout populations would be maintained or increased slightly to support the increased demand for fishing, benefitting long-time residents, regional recreationists, and American Indians.

The large acreage of recommended wilderness (339,800 acres) would serve those who valued open space, unmodified scenery, and solitude. The increase in grazing and fuelwood production and the maintenance of moderate-level timber production would meet the needs of long-time residents, special use permittees, and American Indians.

This alternative would induce the largest development of alpine ski areas in response to projected demand. Because of population increases, the Mammoth and June Lake areas could grow at rates and numbers beyond the capability of the community to adapt. Community services, traffic routes, and water supplies could be inadequate to support the projected number of skier-days. Loss of community stability and cohesion would occur with the large immigration of people. Increases in population would also result in many land-use and landownership changes. Finally, the proposed reduction in the fire protection program would represent an increased threat to personal safety and property values on lands adjoining the National Forest.

AMN: (Maximize All Amenities) Reduced market and non-market outputs would necessitate changes in the lifestyle and reduce the sense of self-sufficiency of those linked economically with the natural resources or the recreation market. Increased fish and wildlife numbers would benefit some members of all social groups. However, because of lower timber and range outputs and minimal increases in recreation, this alternative would not meet the needs of many regional recreationists, seasonal employees, and special use permittees. Some long-time residents, American Indians, and retirees would be affected by the loss of resource outputs and recreational opportunity. Those who valued open space and solitude would be served by the large acreage in recommended wilderness and limited access management.

The de-emphasis on commodity production and on increased visitation to the area would serve the needs of retirees and regional recreationists for open space, air quality, unmodified scenery, and solitude. American Indian access to Forest lands for traditional uses could become more difficult because of large areas recommended for wilderness, and employment opportunities for Indians would decline. This alternative would reduce growth, with a shift in land use from timber, range, and recreation to limited access and non-consumptive use.

The outputs of this alternative would induce the least amount of community growth. There would be a loss of community stability and cohesion associated with a static growth economy. There would be reductions in the number of regional recreationists and seasonal employees, and there would be unemployment problems resulting from limitations on developed recreation opportunities. Less fuelwood would be available, but more high-quality wilderness, nature study, and primitive recreation opportunity would be provided by this alternative.

AMB: (Emphasize Wildlife and Recreation) The output levels of this alternative would maintain community stability and cohesion with little

conflict between consumptive and non-consumptive uses. This alternative allows for population growth to closely resemble historic rates, yet provides the needed increase in summer recreation outputs that CUR was unable to provide due to budget limitations. Land uses would shift away from traditional timber and range uses and toward an emphasis on wildlife, visual quality, wilderness, and recreational opportunities.

Long-time residents and American Indians would find limited employment opportunity with the lower levels of resource outputs. Self-sufficiency needs could be met through the slight increases in the fuelwood supply. The attitudes and beliefs of those who favor open space and solitude would be accommodated by the proposed wilderness recommendations and lands allocated to non-consumptive uses.

RESOURCE ENVIRONMENT

AIR QUALITY

Introduction

Forest activities that could result in long-term changes in air quality are community expansion associated with alpine ski area development, geothermal development, and mining activities. Forest activities that have localized and temporary effects on air quality are wildfire, prescribed burning, construction activities, and vehicle travel on unpaved roads.

Consequences of these activities on air quality are assessed in terms of visibility and concentration of pollutants, standards for which are specified by the Clean Air Act.

Indicators

1. Indicators of long-term changes

   Alpine ski area capacity
   Energy and mineral production.

2. Indicators of temporary and local changes

   Wildfire
   Prescribed burning
   Construction activities
   Unpaved roads.

Alpine ski area developments are closely associated with the resident and transient populations of neighboring communities. These communities grow in response to the amount of skiing available to attract recreation dollars. The larger the communities, especially those near ski areas (as they are in the colder areas of the Forest), the more fuelwood burning would occur and the more air quality would deteriorate due to increased particulate matter, increased noxious gases (CO_x), and reduced visibility. Likewise, increased populations would represent increased vehicle use with associated exhaust emissions (NO_x).

Geothermal energy production would result in gaseous emissions (primarily SO_x) and dust from facility and road construction and unsurfaced roads. Mineral extraction, construction activities, milling emissions, tailing disposal, and the use of unpaved roads could produce enough dust to impair visibility or to affect other Air Quality Related Values (AQRVs).

Smoke from wildfires increases particulate air pollution and affects visibility. The same is true of prescribed burning. However, wildfires may occur during periods of poor air quality, while prescribed burning is conducted only under conditions favorable for minimizing air quality impacts. In addition, prescribed burning would have effects lasting one or two days at most; the duration of a wildfire could well be longer. On the other hand, as prescribed fires burn at low intensity, they result in more smoke from incomplete combustion than many higher-intensity wildfires.

Dust from construction and use of unpaved roads also impairs visibility.

Assumptions

The only substantial changes in air quality will be the long-term changes associated with community growth and geothermal/mineral development. The amount of air quality deterioration from community growth will be proportional to ski area capacity. The effects of mineral and energy development will be proportional to new acres disturbed for those activities.

A smoke management plan will be developed with each Fire Management Action Plan and prescribed burning plan to maximize smoke dispersion and minimize visibility deterioration.

Power plant and milling operations are regulated by the Air Resources Board; the application of Best Available Control Techniques (BACT) ensures compliance with ambient air standards most of the time.

Forest activities will be managed to meet state and federal air quality standards in all alternatives.

AQRVs will be developed for areas (such as Class I wilderness) that are especially sensitive to air quality deterioration. Air quality in such areas will be monitored whenever Forest activities or environmental conditions pose a threat to AQRVs.

Although vehicular emissions are generally a major source of pollutants, the number of vehicles utilizing the Forest road system (outside of communities) at any one time will be too small to measurably lower air quality.
Particulate matter generated by mineral and geothermal activities will vary by season of use and geographic location. Although local impacts could be generated, AQRVs are not expected to be severely affected, either by individual impacts or cumulative ones.

Consequences Common to All Alternatives

Although total acres of wildfire and prescribed burning vary by alternative, the net effects of these activities do not. The intermountain air basin has excellent dispersion during the fire season, and smoke management plans for

fire suppression and prescribed burning will minimize the effects of these activities on AQRVs.

Water mining (groundwater pumping) and water regulation, including diversions, are activities outside Forest Service control that impact air quality in both Class I and Class II areas on the Forest. The impacts of these activities arise when lake levels and/or water tables drop. Exposed lakebeds and soil that are losing vegetation due to lack of groundwater are major sources of airborne dust in the Owens and Mono Basins. The degradation of AQRVs from these activities peaks during the late winter, early spring, and fall seasons. The problem is currently under litigation, and the Forest is working with the local Air Resources Board to work toward a resolution.

Traffic on unpaved roads generates localized and temporary dust problems. The excellent dispersion qualities of the intermountain region and the small number of vehicles using Forest roads work together to keep impacts on AQRVs below measurable levels.

Geothermal development under current leasing agreements could amount to approximately six power plants on 300 acres in Lease Blocks I and II under all alternatives.

Consequences that Vary by Alternative

The following figure is helpful in understanding the effects of alternatives on air quality.

Table 68
Indicators of Projected Impacts on Air Quality
(end of the fifth decade)

	Alternatives					
Indicator	**PRF**	**CUR**	**RPA**	**CET**	**AMN**	**AMB**
New geothermal and mineral development (M acres disturbed)	6.1	6.1	7.0	3.9	3.1	4.8

PRF: (Preferred) and CUR: (Current Program). Any air quality deterioration will include increased levels of CO_x, NO_x, and particulate matter. The community of June Lake, which may be nearing the upper limits of ambient air standards for CO_x a few days a year, will experience the impacts of increased ski area capacity.

Mineral opportunities will be relatively high under these alternatives; projected air quality deterioration from mineral activities will also be high.

RPA: (1980 RPA Program) Projected air quality deterioration from mineral activities will also be the highest.

CEE: (Maximize Cost-Efficiency) Mineral opportunities will be moderate under this alternative. Projected air quality deterioration from mineral activities will also be moderate.

AMN: (Maximize All Amenities) Mineral opportunities will be lowest under this alternative. Projected air quality deterioration from mineral activities will also be low.

AMB: (Emphasize Wildlife and Recreation) Mineral opportunities will be moderate under this alternative. Projected air quality deterioration from mineral activities will also be moderate.

CULTURAL RESOURCES

Introduction

Forest activities that have effects on cultural resources include those which cause ground disturbance, change the amount or intensity of visitor use or grazing pressure, affect vehicle access, or otherwise result (directly or indirectly) in changing the physical character of a particular piece of land.

Consequences of these activities are assessed in terms of the relative potential threat to cultural values posed by each alternative. Data sources used for this analysis include Forest planning documents, previous environmental analyses (Forest Service and other), and professional judgment and past experience.

Indicators

1. Direct Indicators of Disturbance

   This indicator is determined from the total number of new acres disturbed by private and public developed summer recreation sites, alpine ski areas, roads (excluding mining roads), trails (excluding nordic trails), acres under high-level timber management, acres disturbed by geothermal and other mineral activities (including roads), and lands to be exchanged out of federal ownership over the next fifty years.

2. Indirect Indicators of Disturbance

   Summer recreation use
   Domestic livestock grazing.

3. Beneficial Impact Indicators

   Recommended wilderness
   Cultural resource program direction.

Ground-disturbing actions have the potential to destroy or adversely impact cultural resource properties. The greater the total area disturbed, the

greater the likelihood of sites being impacted. The acreage disturbed by new roads is calculated as a corridor one-half mile wide. Trails are calculated as a corridor one-quarter mile wide.

Recreation use (RVDs and WFUDs) and grazing (AUMs) represent a gross relative measure of the potential impacts on cultural resources resulting from increasing visitor use and grazing activities. Both types of use can affect cultural values by ground disturbance. Recreation use is also an indicator of artifact hunting and vandalism.

The larger the acreage in wilderness, the less likely it is that cultural values on those acres will be adversely impacted. The type and amount of use in wilderness is restricted, resulting a low density of visitation, prohibition of vehicle entry, and lack of ground-disturbing resource management.

Cumulative long-term impacts on cultural values can be mitigated not only by coordination with other resource management and Forest activities, but also by a formal program of monitoring, protection (other than project-related), enhancement, and interpretation. The degree to which these activities are implemented varies with the cultural resource program direction for each alternative. This variation is discussed by alternative in the narratives below.

Assumptions

There is not necessarily a one-to-one correspondence between the number of acres disturbed and the number of cultural resource sites potentially impacted. The density of cultural sites varies from one geographic location to another, and certain types of activities can be mitigated better than others. Due to this variation, the presence of cultural values does not necessarily imply a reduction in the land base available for resource management. Although there could be an impact on the acreage available for timber harvest, that impact will be mitigated by pending Memoranda of Agreement between the Forest and the California Office of Historic Preservation. Under these memoranda, piagi (Pandora moth larva) collection sites have been protected from timber harvest by implementing over-the-snow logging techniques. This type-of-site, type-of-undertaking approach has been studied for the past five years. Its success allows timber harvest to occur in areas not previously available for entry.

Recreation impacts are disproportionately distributed over the Forest, based on the differing density of use on different types of land. For example, recreation use averages 18.1 visitor days per acre in concentrated recreation areas, whereas it averages only .042 visitor days per acre on unroaded lands.

The adverse impacts resulting from trail construction and visitor use in wilderness are covered by the indicators for direct disturbance and recreation use.

Cultural resources are protected under all alternatives by the mandatory compliance requirements contained in 36 CFR 800 and the provisions of the Memorandum of Understanding (dated February, 1977), between the Forest Service and the Advisory Council on Historic Preservation. Implementation of

specific projects requires the preparation of individual environmental documents. These documents include formal consultation (as required by 36 CFR 800 and the Forest-wide Standards and Guidelines).

Consequences Common to All Alternatives

Regardless of the alternative chosen, there will be a number of cumulative long-term impacts on cultural resources. Cultural resource management currently has a negligible effect on other resources. However, the density of sites per acre is substantially higher on the Inyo than on many other Forests in the Region (one site per 59 acres as compared with one per 105 acres on the Angeles and one per 245 acres on the Tahoe National Forest). Given this situation, the long-term utility of mitigating direct impacts through avoidance of impacts will decline. In addition, site-by-site and project-by-project evaluation and mitigation will become less viable over time as they are labor-intensive and geared to short-term expediency. However, they will become more important as the ability to avoid impacts decreases. These considerations underline the need to emphasize studies directed to type-of-site and type-of-project compliance and management, and to increase the role played by those approaches.

Consequences that Vary by Alternative

Table 69 displays the effects of alternatives on cultural resources.

Table 69
Indicators of Effects on Cultural Resources
(by the end of the fifth decade)

	Alternatives					
Indicator	PRF	CUR	RPA	CEE	AMN	AMB
Direct Disturbance Indicator						
M acres direct ground disturbance (total)	195.1	227.5	366.6	326.2	149.7	188.6
Relative potential threat*	L	L	H	H	L	L
Indirect Disturbance Indicators						
MM RVDs & WFUDs (5th decade)	6.6	4.6	6.5	6.6	5.0	6.2
Relative potential threat*	H	L	H	H	L	H
M annual AUMs (5th decade)	41.4	39.1	55.6	46.5	35.1	39.4
Relative potential threat*	M	L	H	M	L	L
Beneficial Impact Indicator						
M acres recommended wilderness	172.6	107.6	0	339.8	510.8	222.7
Relative potential threat*	H	H	H	M	L	M
CUMULATIVE RELATIVE THREAT**	M	L	H	H	L	M

* Assigned values correspond to the lower (L), middle (M), and upper (H) thirds of the total range of variation.

** Cumulative relative threat was determined by assigning point values to relative potential threats (L = 1, M = 2, H = 3), summing total points by alternative, and determining corresponding placement in lower, middle, and upper third of the total range of variation.

PRF: (Preferred) Under this alternative, disturbed acres and summer recreation will increase 24 percent and 74 percent respectively as compared with 1982. Wilderness acreage will increase 31 percent. The relative potential threat to cultural values under this alternative will be moderate.

The direction for cultural resources under this alternative includes completing the Forest-wide, emphasizing type-of-site and type-of-project methods for completing project evaluation and mitigation work, and developing a balanced program of inventory, evaluation, protection, enhancement, and interpretation. This direction will offset the potential threat to cultural resources under the alternative.

CUR: (Current Program) Under this alternative, there will be an increase in disturbed acres and summer recreation use of 29 percent and 21 percent respectively. Livestock grazing will decline 6 percent. Wilderness acreage

will increase 19 percent. The relative potential threat to cultural values under this alternative will be low.

Under this alternative, cultural resources will be inventoried at the rate of approximately 12,000 acres per year, primarily in preparation for timber sales and other undertakings with potential to affect cultural values. Mandatory historic preservation requirements for project implementation will be met primarily through the avoidance of impacts. Recorded sites are evaluated; formal site testing and mitigation are undertaken only when impact avoidance is not feasible. Type-of-site evaluation studies are developed and implemented as the opportunity arises. There is a minimum of formal non-project site protection, interpretation, and enhancement. This direction will do little to offset the potential threat to cultural resources under this alternative.

RPA: (1980 RPA Program) Selection of this alternative will result in a 47 percent increase in direct ground disturbance, a 71 percent increase in summer recreation use, and a 34 percent increase in grazing. Wilderness acres will be the same as in 1982. The relative potential threat to cultural values under this alternative will be the highest of any alternative.

In response to RPA goals, the cultural resources program direction for this alternative requires the completion of a Forest-wide inventory by the year 1995, representing an average of 180,000 project and non-project acres per year. Additional cultural resource direction calls for supplementing a primary mitigation strategy of impact avoidance with type-of-site and type-of-project evaluations, initiating a formal site monitoring and protection program, and pursuing enhancement and interpretation activities as the opportunities arise. This direction will somewhat offset the potential threat to cultural resources under this alternative.

CEE: (Maximize Cost-Efficiency) Under this alternative, there will be a 42 percent, 76 percent, and 12 percent increase in disturbed acres, summer recreation use, and livestock grazing respectively. Wilderness acreage will increase 60 percent. The overall potential threat to cultural values will be high, second only to RPA.

Cultural resource program direction for this alternative includes conducting an average of 12,000 acres per year of project-related and non-project surveys; developing a balanced evaluation and mitigation program involving the avoidance of impacts, type-of-site and type-of-project approaches; and developing the formal monitoring, protection, enhancement, and interpretation aspects of the program. This direction will slightly offset the increased threat to cultural resources.

AMN: (Maximize All Amenities) Under this alternative, there will be a 19 percent increase in disturbed ground, a 32 percent increase in summer recreation use, and a 15 percent reduction in AUMs. Wilderness acres will increase 90 percent. The relative potential threat under this alternative will be the lowest of any alternative.

Under this alternative a formal non-project initiated survey program will be developed, resulting in an average of 45,000 acres per year of inventory, including project-related work. Evaluation and mitigation will be pursued

through a balanced program of impact avoidance, type-of-site, and type-of-project approaches; formal non-project site protection and monitoring efforts will be implemented. Enhancement and interpretive activities will be developed as opportunities arose. This direction will further reduce the low level of threat to cultural resources.

AMB: (Emphasize Wildlife and Recreation) This alternative will result in a 24 percent increase in disturbed acres, a 63 percent increase in summer recreation use, and a 5 percent reduction in livestock grazing. Wilderness acreage will increase 39 percent. The overall potential threat to cultural values will be low.

The specifics of the cultural resources direction for this alternative include the examination of 45,000 average annual acres of project and non-project inventory; an evaluation and mitigation program based on a balance of impact avoidance and type-of-site, type-of-project approaches; formal site protection and monitoring endeavors; and a special emphasis on cultural resource enhancement and interpretation. This direction will further reduce the low level of threat to cultural resources.

DIVERSITY

Introduction

Forest activities that have major effects on the diversity of vegetative seral stages include timber harvest, fire management, range management, wildlife habitat management, recreation management, and special designations such as wilderness, Research Natural Areas, and Special Interest Areas.

Consequences of these activities are assessed in terms of the amount and distribution of vegetation in different successional stages. Data sources for this analysis include studies of species and vegetation types, forest management principles, management experience, and field observations.

Effects on cliffs, caves, and rock outcrops are subject to minerals management and recreation. These elements are not tracked by alternative since impacts are hard to quantify. In general, however, alternatives with the least potential for land disturbance and the lowest levels of recreation use will least affect these elements.

Certain key diversity elements are addressed under other headings. Snags are discussed under wildlife. Streams are discussed under fish. Riparian areas have their own heading.

Indicators

1. Size of the commercial timber base

2. New ski areas

3. Existing old growth in suitable timber

4. Wildfire

5. Brush rejuvenation for range and wildlife

6. Brush subject to decadence

7. Watershed improvement (wet meadow protection)

8. Wet meadows subject to accelerated erosion

9. Special designations (wilderness, RNAs, SIAs).

The amount of existing old growth timber retained in each alternative will be related to the size of the commercial timber base and to the acreage developed for new ski areas. Both commercial timber management and ski area development entail the cutting of trees. In the case of timber management, maximum wood production retains forest lands in earlier seral stages. In the case of ski areas, harvested areas remain free of trees altogether. "Old growth" on the Inyo National Forest refers to trees more than 140 years old, with a diameter-at-breast-height (dbh) of approximately 28 inches. The Forest currently has 199,275 acres of timber that meet this criterion. 53,951 acres of that total are on lands capable of commercial timber production and not withdrawn for other reasons suitable timber lands.(the tentatively suitable timber base). Most of the remaining acres are in existing wilderness.

The amount of brush subject to maturation is inversely proportional to the amount of vegetation treatment and the amount of wildfire in that vegetation type. Vegetation treatment and wildfire both can have a rejuvenating effect, as they remove older, mature vegetation and stimulate vigorous new growth. Brush becomes mature after approximately 80 years. Currently the Forest has 679,000 acres of brush, of which approximately 136,000 acres is already mature. Without treatment, most of the remaining acres will be mature in 20 to 50 years. Approximately 6,800 acres will need rejuvenation annually to maintain a maximum of 20 percent in the oldest seral stage.

Large-scale brush vegetation treatments are not currently recommended on the Inyo. Prescribed burns and wildfire have had inconsistent results. The success of a project is dependent on the pre-burn vegetation conditions and climatic conditions following the burn.

Vegetation communities that have perennial herbaceous understories tend to respond favorably to vegetation treatments that remove the shrub overstory. Communities that have sparse perennial herbaceous understories do not, and are usually invaded by undesirable shrub or annual exotics. Areas that will be subject to treatment are existing stands that have well-developed understories of perennial herbaceous vegetation.

The amount of wet meadow subject to accelerated erosion is inversely proportional to watershed improvement work in wet meadows. Watershed improvement entails the protection of eroding soils by structural and vegetative armoring and the restoration of damaged soils with techniques that enable sediment to fill in scars from past erosion. There are approximately 26,000 acres of wet meadow on the Forest. Of these, approximately 23,500 acres (most of that in the Golden Trout Wilderness) have been identified for watershed improvement.

Areas with special designations favor older seral stages of timber and brush, as active vegetation management is not conducted in such areas.

Assumptions

All alternatives include direction to meet minimum management requirements for diversity on a Forest-wide basis.

Consequences Common to All Alternatives

The 400,100 acres of pinyon-juniper on the Forest will be affected very little by management activities in any alternative.

Despite vegetation treatment and wildfire, the amount of brush on the Forest is so large that most will be decadent by the end of the fifth decade under any alternative.

The 145,324 acres of identified old-growth coniferous forest in wilderness and RNAs will follow natural ecological processes under all alternatives. The 53,951 acres of old growth in the tentatively suitable timber base will be subject to a shift toward earlier seral stages due to timber management and/or ski area development (the amount varies by alternative).

Consequences that Vary by Alternative

The following figure is helpful in understanding the effects of alternatives on vegetative seral stage diversity.

Table 70
Indicators of Effects on Seral Stage Diversity
(by the end of the fifth decade)

	Alternatives					
Indicator	PRF	CUR	RPA	CEE	AMN	AMB
Commercial timber base (M acres)	75.2	89.1	99.2	97.6	61.8	69.8
Existing old growth in suitable timber (M acres)	33.0	5.0	4.2	7.6	33.2	22.1
Brush rejuvenation (M acres)	11.4	85.6	118.5	116.6	111.3	109.0
Wildfire (M acres)	53.2	52.9	53.2	64.5	48.2	51.4
Decadent brush (M acres)	615	541	508	498	519	519
Wet meadow treatment (M acres)	23.5	2.0	9.9	23.5	23.5	23.5
Wet meadow subject to accelerated erosion (M acres)	0	93.0	13.6	0	0	0
Wilderness/RNAs/SIAs (M acres)	864.4	769.2	661.6	982.1	1149.8	903.4

PRF: (Preferred) Shrubby vegetation will continue to mature and overall diversity to decline with the shift toward older seral stages, despite the effects of vegetation treatment and wildfire. Of total acreage in brush types, 75 percent will reach the oldest seral stage within five decades.

Suitable timber lands will shift toward earlier successional stages and greater diversity due to timber management.

CUR: (Current Program) Shrubby vegetation will continue to mature and overall diversity to decline with the shift toward older seral stages, despite the effects of vegetation treatment and wildfire. Of total acreage in brush types, 80 percent will reach the oldest seral stage within five decades.

Suitable timber lands will shift toward earlier successional stages and greater diversity due to timber management. A small amount of wet meadow improvement will have occurred, leaving 93 percent of meadow acres vulnerable to accelerated erosion.

RPA: (1980 RPA Program) Shrubby vegetation will continue to mature and overall diversity to decline with the shift toward older seral stages, despite the effects of vegetation treatment and wildfire. Of total acreage in brush types, 74 percent will reach the oldest seral stage within five decades.

Suitable timber lands will shift toward earlier successional stages and greater diversity due to timber management. A moderate to low level of wet meadow improvement will have occurred, leaving 60 percent of meadow acres vulnerable to accelerated erosion.

CEE: (Maximize Cost-Efficiency) Shrubby vegetation will continue to mature and overall diversity to decline with the shift toward older seral stages, despite the effects of vegetation treatment and wildfire. Of total acreage in brush types, 73 percent will reach the oldest seral stage within five decades.

Suitable timber lands will shift toward earlier successional stages and greater diversity due to timber management. The full program of wet meadow improvement will have occurred, leaving none vulnerable to accelerated erosion.

AMN: (Maximize all Amenities) Shrubby vegetation will continue to mature and overall diversity to decline with the shift toward older seral stages, despite the effects of vegetation treatment and wildfire. Of total acreage in brush types, 76 percent will reach the oldest seral stage within five decades.

Suitable timber lands will shift toward earlier successional stages and greater diversity due to timber management. The amount of existing old growth in suitable timber will have declined 38 percent since 1982 due to timber management. The greatest impacts on old growth will be found in Jeffrey pine, due to the large acreage managed.

The full program of wet meadow improvement will have occurred, leaving none vulnerable to accelerated erosion.

AMB: (Emphasize Wildlife and Recreation) Shrubby vegetation will continue to mature and overall diversity to decline with the shift toward older seral stages, despite the effects of vegetation treatment and wildfire. Of total acreage in brush types, 76 percent will reach the oldest seral stage within five decades.

Suitable timber lands will shift toward earlier successional stages and greater diversity due to timber management. The full program of wet meadow improvement will have occurred, leaving none vulnerable to accelerated erosion.

ENERGY

Introduction

The potential energy sources addressed under this heading are hydroelectric development and wind power development; geothermal energy development is discussed under the heading of Minerals. Forest activities that could affect opportunities for energy development are recreation management, visual resource management, fish habitat management, riparian area management, watershed management, and wilderness recommendations.

Indicators

1. Management direction

2. Wilderness recommendations.

Management direction can encourage and/or restrict energy development, affecting the opportunities for such development. Management direction is found in the Forest-wide Standards and Guidelines common to all alternatives, Management Prescription direction, and resource program direction unique to each alternative.

Wilderness recommendations have the potential to affect energy development opportunities, as new energy projects will not be considered inside wilderness.

Assumptions

The Forest-wide Standards and Guidelines common to all alternatives contain the management direction most likely to affect energy development. Standards and Guidelines for energy development encourage such development to the degree commensurate with other resource values, and they direct the Forest to consider energy proposals on a case-by-case basis. Key Standards and Guidelines for other resources (such as fish, water quality, soils, and visual quality) define the maximum acceptable impact levels for those resource values. Management Prescription direction and resource program direction unique to each alternative rarely apply more stringent standards to

those lands with identified energy potential than the Forest-wide Standards and Guidelines.

Wilderness recommendations will have little effect on energy potential. Only three hydroelectric proposals (out of a total of 36) lie within Further Planning Areas, and all three lie close enough to the Further Planning area boundary to be easily excluded by a boundary adjustment before wilderness designation if such exclusion were desirable. The only wind-power proposal received by the Forest addresses lands outside wilderness. Although there have been no additional proposals, potential has been suggested for the White Mountains. Even under the alternative with the largest wilderness recommendation, considerable high-elevation acreage in the White Mountains will remain outside wilderness.

Consequences Common to All Alternatives

Due to the assumptions discussed above, opportunities for new hydroelectric and wind power development are considered common to all alternatives.

FACILITIES

Introduction

Environmental consequences on facilities are discussed primarily in terms of roads and trails. Forest activities that affect Forest road and trail construction include timber management, recreation management, and wilderness recommendations. Consequences on other types of facilities are minor and will not vary from one alternative to another.

Indicators

1. Miles of new road
2. Miles of new trail
3. Maintenance level.

Forest roads provide access to the public for recreational use and for wood gathering. They also provide access for such Forest Service management activities as timber harvest, recreation development, fire suppression, and range administration.

Existing trails serve primarily to provide hiker/equestrian access to wilderness and other unroaded areas. Potential trails include minor additions in existing wilderness and improved access for recommended wilderness. There is an increased emphasis on non-wilderness trails to better distribute use and protect resources in concentrated recreation areas, to attract day use away from overcrowded wilderness trails, to expand on existing opportunities for nordic skiing and OHV use, and to initiate opportunities for cyclists and the handicapped. In addition to new trail construction, certain key user-maintained trails in recommended wilderness will be added to the Forest trail system, improved to meet standards, and assigned an appropriate maintenance level.

Forest roads and trails are assigned maintenance levels based on Road Management Objectives and the amount of use they receive. If assigned maintenance levels are not met, the road and trail network deteriorates, safety hazards arise, and carrying capacity declines.

Assumptions

Although roads constructed for mineral and geothermal activities will affect overall access to some degree, they are not included in this discussion. Mineral and energy roads are developed by private parties in response to specific mineral or energy opportunities. Consequently, their locations cannot be predicted and public use of the roads may be discouraged or prohibited.

Geothermal developers are required to maintain roads to existing standards within their lease areas. The use of roads by all mineral developers outside of their lease areas or claims requires a Special Use Permit which will contain language specifying road maintenance activities.

Consequences Common to All Alternatives

The need for a visitor center to serve the Mono Basin National Forest Scenic Area was identified in the legislation establishing that area. That site will be constructed under all alternatives.

Other facilities include airstrips and heliports, borrow and disposal sites, and dams. There are no major issues or concerns related to these facilities, nor are they expected to change from one alternative to another.

Thirteen miles of new trail will be constructed in existing wilderness under all alternatives.

Roads and trails will be reconstructed on a regular basis (approximately once every twenty years) under all alternatives.

There will be negligible local road construction under any alternative, as most logging on the Forest uses over-snow skidding methods and because a network of primitive vehicle routes already permeates most suitable timber lands.

Consequences that Vary by Alternative

Table 71 displays the effects of the alternatives on roads and trails by the end of the fifth decade.

Table 71
Indicators of Effects on Road and Trail Systems
(total miles - end of the fifth decade)

Indicators	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
New Road Construction						
-timber	0	6	21	21	0	0
-developed recreation	87	40	82	44	14	38
-Total	**87**	**46**	**103**	**65**	**14**	**38**
New Trail Construction						
-existing wilderness	13	13	13	13	13	13
-recommended wilderness	36	15	0	60	66	56
-concentrated rec. area	180	0	180	180	80	120
-open National Forest	20	0	20	20	20	20
-OHV	36	0	50	52	0	0
-nordic	350	150	275	400	250	300
-Total	**635**	**178**	**538**	**725**	**429**	**509**
Roads and trails maintained to assigned levels	yes	no	yes	yes	yes	yes

PRF: (Preferred) *A total of 87 miles of new Forest roads will be* constructed under this alternative. These will be built to provide for recreation site access. Most of the new road will be found in existing concentrated recreation areas, but some new sites will be developed outside those areas as well.

There will be 635 miles of new trails created for a variety of uses. Most trails will be constructed over the first two decades. There will be 36 miles of trail in recommended wilderness to provide for appropriate access while emphasizing the retention of each area's unique wilderness qualities. In addition to new trails, existing trails in recommended wilderness will be added to the Forest trail system and will receive regular maintenance. The 180 miles of trail in concentrated recreation areas and 20 miles in other areas of the Forest will serve primarily to disperse day users, protect resources, especially in riparian areas, to provide opportunities for cyclists and the handicapped, and to attract day use away from overcrowded wilderness trails. Nordic ski trails will triple, and OHV trails will increase moderately in response to increasing demand.

The condition of roads and trails will be excellent, as all facilities will be maintained to assigned maintenance levels.

CUR: (Current Program) A total of 21 miles of new Forest roads will be constructed under this alternative to facilitate timber management in the San Joaquin and Monache areas in the first two decades. Those roads will improve access to lands previously accessible only on foot or by four-wheel drive vehicle, changing the type and amount of use considerably. There will be no new developed recreation site access roads.

There will be 178 miles of new trails created for a variety of uses. Most new trails will be constructed over the first two decades. The 15 miles of traila in recommended wilderness will be located in the White Mountains, as that is the Further Planning Area with the greatest opportunities. The total trail mileage will be limited by budget restrictions in this alternative. In addition to new trails, existing trails in recommended wilderness will be added to the Forest trail system. There will be no new trails in concentrated recreation areas or in open National Forest to disperse day users, protect resources, provide opportunities for cyclists or the handicapped, or attract day use away from overcrowded wilderness trails. Nordic ski trails developed by the private sector under permit will nearly double in response to increasing demand. There will be no new OHV trails.

Roads and trails will not be maintained to assigned maintenance levels, as this alternative has budget limitations. Overall condition will decline, carrying capacity will drop, and safety problems will arise.

RPA: (1980 RPA Program) A total of 103 miles of new Forest roads will be constructed under this alternative. Timber management will require a total of 21 miles of new road in the San Joaquin and Monache areas in the first two decades. Those roads will improve access to lands previously accessible only on foot or by four-wheel drive vehicle, changing the type and amount of use considerably. New developed recreation site access will account for 82 miles of road. Most of the new roads will be found in existing concentrated recreation areas, but new sites will be developed outside those areas as well.

There will be 538 miles of new trail created for a variety of uses; most new trails will be constructed over the first two decades. The 180 miles of trail in concentrated recreation areas and 20 miles in other areas of the Forest will serve primarily to disperse day users, protect resources, especially in riparian areas, to provide opportunities for cyclists and the handicapped, and to attract day use away from overcrowded wilderness trails. Nordic ski trails will increase 150 percent and OHV trails will increase substantially in response to increasing demand.

The condition of roads and trails will be excellent, as all facilities will be maintained to assigned maintenance levels.

CEE: (Maximize Cost-Efficiency) A total of 65 miles of new Forest roads will be constructed under this alternative. Timber management will require a total of 21 miles of new road in the San Joaquin and Monache areas in the first two decades. Those roads will improve access to lands previously accessible only on foot or by four-wheel drive vehicle, changing the type and amount of use considerably. New developed recreation site access will

account for 44 miles of road; most of the new road will be found in existing concentrated recreation areas, but new sites will be developed outside those areas as well.

There will be 725 miles of new trail created for a variety of uses. Most trails will be constructed over the first two decades. The 60 miles of trails in recommended wilderness will mostly be located in the White Mountains and Coyote areas, as those are the Further Planning Areas with the greatest opportunities. In addition to new trails, existing trails in recommended wilderness will be added to the Forest trail system and will receive regular maintenance.

The 180 miles of trails in concentrated recreation areas and 20 miles in open National Forest will serve primarily to disperse day users, protect resources (especially in riparian areas), to provide opportunities for cyclists and the handicapped, and to attract day use away from overcrowded wilderness trails. Nordic ski trails will more than triple and OHV trails will increase substantially in response to increasing demand.

The condition of roads and trails will be excellent, as all facilities will be maintained to assigned maintenance levels.

AMN: (Maximize All Amenities) As only fourteen miles of new Forest recreation roads will be constructed under this alternative, vehicle access will be little changed from 1982.

There will be 379 miles of new trails created for a variety of uses. Most trails will be constructed over the first two decades. The 66 miles of trail in recommended wilderness will mostly be located in the White Mountains and Coyote areas, as these are the Further Planning Areas with the greatest opportunities. In addition to new trails, existing trails in recommended wilderness will be added to the Forest trail system and will receive regular maintenance. The 80 miles of trails in concentrated recreation areas and 20 miles in open National Forest will serve primarily to disperse day users, protect resources (especially in riparian areas), to provide opportunities for cyclists and the handicapped, and to attract day use away from overcrowded wilderness trails. Nordic ski trails will increase substantially in response to increasing demand for that use; there will be no new OHV trails.

Roads and trails will be in excellent condition. All facilities will be maintained to assigned maintenance levels, as this alternative has no budget limitations.

AMB: (Emphasize Wildlife and Recreation) A total of 38 miles of new Forest roads will be constructed under this alternative for new developed recreation site access. All of the new road will be found in existing concentrated recreation areas.

There will be 509 miles of new trails created for a variety of uses. Most new trails will be constructed over the first two decades. The 56 miles of trails in recommended wilderness will mostly be located in the White

Mountains and Coyote areas, as those are the Further Planning Areas with the greatest opportunities. In addition to new trails, existing trails in recommended wilderness will be added to the Forest trail system and will receive regular maintenance. The 120 miles of trails in concentrated recreation areas and 20 miles in other Forest areas will serve primarily to disperse day users, protect resources (especially in riparian areas), to provide opportunities for cyclists and the handicapped, and to attract day use away from overcrowded wilderness trails. Nordic ski trails will increase 171 percent in response to the increasing demand for that use; there WILL be no new OHV trails.

Roads and trails will be in excellent condition; all facilities will be maintained to assigned maintenance levels.

FISH

Introduction

Forest activities that have major effects on fish habitat include fish habitat management, watershed management, energy development, community development, summer recreation use, and range management.

Consequences of these activities are assessed in terms of resident fish habitat capability and consequent changes in fish production (number and size of fish). Data sources for this analysis include streambank stability surveys, fish habitat management principles, research, management literature, habitat capability models for selected indicator species, and professional judgment and experience. Habitat capability models were used to assess species response to management practices. Various resident trout (rainbow, brook, brown, and golden trout) were selected as indicator species for monitoring changes in fish habitat; the most sensitive species in a given stream will be the indicator for that stream.

Indicators

1. Fish habitat improvement
   - Threatened trout habitat
   - Golden Trout Wilderness habitat
   - Concentrated recreation areas
   - Rewatering of dewatered streams

2. Watershed improvement work in wet meadows

3. Domestic livestock grazing

4. Energy development (hydroelectric and geothermal)

5. Community growth (using alpine ski area capacity is an indicator)

6. Developed summer recreation use.

The effect of each alternative on fish habitat capability depends primarily on the amount of fish habitat improvement in streams. Fish habitat

improvement includes the removal of stream barriers, structural improvements (such as weirs and check dams), and the removal of undesirable fish (in the case of golden trout habitat).

Fish habitat improvement projects are proposed for streams in threatened trout habitat, in the Golden Trout Wilderness, and in concentrated recreation areas. The rewatering of streams currently dewatered for hydroelectric projects will reclaim additional fish habitat.

Watershed improvement in wet meadows reduces erosion and sedimentation, thereby improving fish habitat. Eroded streambanks and excessive sedimentation are primary fish habitat problems in the Golden Trout Wilderness. Watershed improvement complements the fish habitat improvement program in that wilderness, enhancing the amount and condition of fish habitat in associated streams.

While fish habitat improvement and watershed improvement can increase fish habitat capability; livestock grazing, energy devlopment, ski area development (as a stimulus for community growth), and developed summer recreation use have the potential to reduce that capability.

Livestock spend a disproportionate amount of time in riparian areas. Livestock can denude streambanks of protective vegetation, damage streambank structure, and cause sedimentation of stream channels with corresponding adverse effects on fish habitat quality and quantity. The magnitude of effects depends on the amount of grazing and the extent of protective mitigation measures applied.

Hydroelectric power development removes water from streams, thereby eliminating or reducing the amount of fish habitat. Concern about the impacts of new hydroelectric development is greatest where existing fishing use is greatest, primarily in concentrated recreation areas in the Sierra Nevada.

Some types of geothermal power plants rely on cold water to supply evaporative cooling towers. This cold water can be drawn from surface sources, groundwater sources, or recycled from cooling ponds. If geothermal facilities drew on surface water sources to meet all or part of those needs, the amount of geothermal development will be expected to affect water availability for fish (those effects will be mitigated to the extent that groundwater sources were used instead of surface water). There is also the possibility that spills from broken pipes could pollute surface water. The potential impacts of geothermal activities on Hot Creek are of particular concern, as Hot Creek is a designated wild trout stream in the general vicinity of proposed geothermal development.

Communities on the north end of the Forest are closely tied to the alpine ski industry. Increases in alpine ski area capacity stimulate population growth and, consequently, increase the demand for municipal water supplies. The amount of water available for fish declines to the extent that increased municipal demand is met by surface water sources. Due to the relationship between alpine skiing and community size, ski area capacity can be used as an indicator of impacts on fish habitat. (If groundwater is used as a domestic water source, impacts on fish habitat will be mitigated.)

Developed recreation sites are typically located near streams or lakes, and the amount of overall recreation use is concentrated in the area served by those sites. Developed site use is, therefore, an indicator of overall recreation use in the vicinity of lakes and streams. Heavy recreation use tends to result in trampled riparian vegetation, compacted soils, eroded streambanks, and increased stream channel sedimentation, all of which are detrimental to fish habitat capability. In addition, resident trout populations near developed recreation sites are subject to depletion by heavy fishing pressure.

Assumptions

The demand for water to serve geothermal activities in Lease Blocks I and II and for municipal use in Mammoth Lakes will have cumulative effects on designated wild trout waters in Hot Creek.

Rewatering of streams and fish habitat/watershed improvement projects have the greatest potential to improve the overall quality and quantity of resident fish habitat on the Inyo.

Habitat improvement projects will take place almost entirely in streams. Habitat improvement for lakes is not a major consideration since lake water quality is good overall, and most lakes on the Forest are within wilderness.

Activities associated with timber harvest will have few impacts on fish. There are few streams in suitable timber, and as most logging is conducted over the snow, soil erosion and sedimentation are minimized.

The vast majority of fishing on the Forest takes place in waters stocked by the California Department of Fish and Game. The stocking program is outside the control of the Forest Service. It is therefore assumed for analysis purposes that stocking will remain constant, and that only resident trout habitat, which is subject to Forest management, will change.

The effects of livestock on fish habitat can be mitigated by reducing the amount of time spent by livestock in streamside areas. This can be accomplished by fencing, salting, herding, water development, or deferring grazing.

All alternatives include Forest-wide Standards and Guidelines. Management Prescription and Management Area Direction which assure that, as a minimum, viable populations of all resident fish species will be maintained and that threatened trout will be managed to at least meet recovery levels. Best Management Practices (BMPs) and other protective measures are prescribed to control soil erosion and protect water quality, mitigating potential fish habitat losses due to Forest activities.

Habitat improvement in concentrated recreation areas is assumed to increase habitat capability. Those increases could, however, be offset by habitat losses due to increased recreation use of riparian areas.

Consequences Common to All Alternatives

Lake fish habitat capability will be constant under all alternatives; only stream habitat is considered for improvement.

All potential fish habitat improvement in the Golden Trout Wilderness (31 miles) will be accomplished under all alternatives.

Efforts will be made to rewater fifteen miles of stream when issuing new hydroelectric licenses under all alternatives.

The likelihood of energy development is assumed to be the same under each alternative. There are fifteen applications for new hydroelectric projects on Forest streams, some of which contain trout. Current agreements in Lease Blocks I and II north of Mammoth Lakes provide for geothermal exploration and development. Any development in that area poses a potential threat to Hot Creek wild trout fisheries. Additional proposals for geothermal leasing will be analyzed on a case-by-case basis.

Although overall grazing numbers vary by alternative, most increases are projected for lands located away from sensitive fish habitat. Grazing in the Golden Trout Wilderness, concentrated recreation areas, and threatened trout habitat are expected to be roughly equal for all alternatives.

Potential wild trout streams will not be adversely affected by management activities under any alternative.

Threatened Lahontan and Paiute cutthroat trouts will be managed to at least meet recovery under all alternatives.

Any activities that will affect water quality (see Watershed: Water) will also affect fish habitat.

Consequences That Vary By Alternative

Tables 72 and 73 display the effects of Forest activities on fish habitat capability by alternative over the next fifty years.

Table 72
Indicators of Consequences on Fish Habitat
(by the end of the fifth decade)

Indicator	Base Year 1982	Alternatives					
		PRF	CUR	RPA	CEE	AMN	AMB
Livestock grazing (M AUMs)	41.4	41.4	39.1	55.6	46.5	35.1	39.4
Summer developed recreation (M RVDs)	1.8	2.9	1.9	2.9	2.9	1.9	2.7
Watershed improvement (M acres)	0	23.5	2.0	9.9	23.5	23.5	23.5
Fish habitat improvement (acres)							
-direct improvement	0	243	178	286	317	257	279
-improvement induced from watershed work	0	227	27	131	304	304	304
-Total improvement	**0**	**470**	**205**	**417**	**621**	**561**	**583**

Table 73
Fish Habitat Improvement by Alternative
(by the end of the fifth decade)

Indicator	Base Year 1982	Alternatives					
		PRF	CUR	RPA	CEE	AMN	AMB
Direct stream fish habitat improvement (acres)							
-concentrated recreation areas	0	137	72	180	211	134	156
-Golden Trout Wilderness	0	56	56	56	56	56	56
-threatened trout habitat	0	23	23	23	23	40	40
-rewatering dewatered streams	0	27	27	27	27	27	27
Fish habitat improvement induced from watershed improvement in Golden Trout Wilderness (stream acres affected)	0	227	27	131	304	304	304
Stream trout (M pounds)							
- other than T&E	132.0	174.0	151.0	173.0	189.0	179.0	182.0
- (T&E)	0.1	0.7	0.7	0.7	0.7	1.2	1.2
Forest-wide change in stream fish habitat capability	N/A	+32%	+15%	+31%	+44%	+36%	+39%

PRF: (Preferred) Fish habitat and watershed improvement projects will increase stream habitat capability 32 percent. Fishing pressure and impacts on resident trout habitat will increase considerably on stream reaches in concentrated recreation areas in proportion to the 57 percent increase in summer developed recreation use.

Impacts related to livestock grazing will increase due to the nine percent increase in range outputs.

The net effect of beneficial and adverse effects on fish habitat will be a moderate improvement in habitat condition and a corresponding moderate improvement in recreational fishing quality.

CUR: (Current Program) Fish habitat and watershed improvement projects will increase stream habitat capability 15 percent. Fishing pressure and impacts on resident trout habitat will remain the same on stream reaches in concentrated recreation areas due to the lack of increased summer developed recreation use. Community growth in support of 39,000 SAOT will represent nearly double the current demand for domestic water supplies.

Impacts related to livestock grazing will increase slightly. Although outputs will decline over five decades, the adjustment of animal numbers will lag behind declining range condition, forcing livestock to graze in riparian areas more than they do at present.

The net effect of beneficial and adverse effects on fish habitat will be a moderate reduction in habitat condition and a corresponding moderate reduction in recreational fishing quality, due primarily to impacts associated with increased livestock grazing.

RPA: (1980 RPA Program) Fish habitat and watershed improvement projects will increase stream habitat capability 31 percent. Fishing pressure and impacts on resident trout habitat will increase considerably on stream reaches in concentrated recreation areas in proportion to the 57 percent increase in summer developed recreation use. Community growth in support of 46,000 SAOT will represent more than twice the current demand for municipal water supplies.

Impacts related to livestock grazing will increase due to the 34 percent increase in range outputs.

The net effect of beneficial and adverse effects on fish habitat will be a substantial reduction in habitat condition and a corresponding reduction in recreational fishing quality, due to impacts associated with dramatically increased commodity production.

CEE: (Maximize Cost-Efficiency) Fish habitat and watershed improvement projects will increase stream habitat capability 44 percent. Fishing pressure and impacts on resident trout habitat will increase considerably on stream reaches in concentrated recreation areas in proportion to the 57 percent increase in summer developed recreation use. Community growth in

support of 61,000 SAOT will represent three times the current demand for municipal water supplies.

Impacts related to livestock grazing will increase due to the 12 percent increase in range outputs.

The net effect of beneficial and adverse effects on fish habitat will be a slight improvement in habitat condition and a corresponding slight improvement in recreational fishing quality.

AMN: (Maximize All Amenities) Fish habitat and watershed improvement projects will increase stream habitat capability 36 percent. Fishing pressure and impacts on resident trout habitat will remain the same on stream reaches in concentrated recreation areas in proportion to the lack of increase in summer developed recreation use. Community growth in support of 31,000 SAOT will represent a 50 percent increase over the current demand for municipal water supplies.

Impacts related to livestock grazing will decline due to the 15 percent reduction in range outputs.

The net effect of beneficial and adverse effects on fish habitat will be a substantial improvement in habitat condition and a corresponding improvement in recreational fishing quality.

AMB: (Emphasize Wildlife and Recreation) Fish habitat and watershed improvement projects will increase stream habitat capability 39 percent. Fishing pressure and impacts on resident trout habitat will increase moderately on stream reaches in concentrated recreation areas in proportion to the 50 percent increase in summer developed recreation use. Community growth in support of 43,000 SAOT will represent more than twice the current demand for domestic water supplies.

Impacts related to livestock grazing will decline due to the five percent reduction in range outputs.

The net effect of beneficial and adverse effects on fish habitat will be a moderate improvement in habitat condition and a corresponding moderate improvement in recreational fishing opportunities.

FURTHER PLANNING AREAS

The Forest activity that has the greatest potential effect on Further Planning Areas is the recommendation of wilderness designation or non-wilderness resource management (including, for example, timber management, intensive range management, wildlife habitat management, vehicle-based recreation, and energy and mineral exploration and development) for specific Further Planning Areas.

The consequences of these recommendations are expressed in terms of the wilderness characteristics of Further Planning Areas (natural ecological integrity, natural appearance, opportunities for solitude, and opportunities for primitive recreation) and the non-wilderness management and development opportunities in those areas.

Data sources for this analysis include area-specific information collected as part of the RARE II study, planning records from the 1983-84 reevaluation of Roadless Areas, the Forest data base, memoranda and correspondence files, Forest resource inventories, the FORPLAN analysis, and professional knowledge and judgment about Further Planning Areas on the Forest.

The following discussion addresses the consequences of alternatives on the eighteen Further Planning Areas on the Forest, taken as a whole. Effects are examined in terms of effects both on wilderness characteristics and on non-wilderness resources and opportunities in those areas. The consequences of each alternative on individual Further Planning Areas are discussed in detail in Appendix C.

Indicators

1. Selected resource outputs
2. Management Prescriptions (Rx) applied.

Selected resource outputs are an indication of potential wilderness outputs (wilderness recreation RVDs) versus potential non-wilderness outputs (such as timber MMBF or non-wilderness recreation RVDs) for Further Planning Areas taken as a whole.

The various Management Prescriptions applied to Roadless Areas under different alternatives are a broad indication of potential consequences on the wilderness characteristics of those areas. Prescriptions describe the resources emphasized and the standards and guidelines that apply to specific areas of land. For purposes of this discussion, Management Prescriptions have been grouped into four categories:

1. Wilderness Prescriptions: The Proposed Wilderness Prescription (Rx #2) applied to recommended wilderness areas with the assumption that the Designated Wilderness Prescription (Rx #1) will be applied once Congress has acted on the recommendation. Rx #1 provides for primitive recreation use while ensuring the perpetuation of wilderness characteristics. Vehicular travel, motorized equipment, timber harvest, road building, new mineral claims, energy developments, and most vegetation manipulation will be prohibited in designated wilderness. Grazing and existing mineral claims will be regulated to minimize conflicts with wilderness values. Even the amount of wilderness recreation use will be limited as necessary to protect wilderness resources. Rx #2, an interim management prescription applied until Congress designates the area, provides for traditional uses of the area while protecting wilderness values until designation has occurred.

2. Management Prescriptions Emphasizing Amenity Values: Management Prescriptions #3, #4, #5, #6, #7, #8, and #17 will be expected to have few adverse effects on wilderness characteristics.

Natural ecological integrity will be affected only by vegetation treatment for wildlife habitat enhancement. Such treatments approximate natural processes, however, and the ecological effects are temporary (20 to 70 years) and localized. The natural appearance of acres in these areas is likely to change only slightly. The visible impacts of mineral activity and vegetation treatments will be temporary and/or localized.

Opportunities for solitude will be reduced in proportion to overall increases in dispersed recreation on the Forest. Those areas adjacent to concentrated recreation areas will receive the greatest impact. Opportunities for primitive recreation will not change much from the present. As no new roads will be built, the current mix of four-wheel drive and non-motorized recreation will be expected to continue.

3. Management Prescriptions Emphasizing Concentrated Recreation Use: Management Prescriptions #12, #13, #14, #15, and #16 allow for road and facility development and invite heavy visitation. They also provide a moderate-to-high level of visual quality protection.

   These prescriptions will have the greatest effects on opportunities for solitude, due to the intensity and density of recreation use. Effects on natural integrity and primitive recreation opportunities will also be noted as more roads and facilities were developed and land disturbed. Effects on natural appearance will be modified by stringent Visual Quality Objectives under most of these prescriptions. The alpine ski area prescription will have the greatest effect on natural appearance.

4. Management Prescriptions Emphasizing Commodity Production: Management Prescriptions #9, #10, #11 and #18 allow for road building, energy and mineral development, timber harvest, and vegetation manipulation for range improvement.

   Natural integrity and natural appearance will be affected to the extent that land-disturbing activities actually occur. The amount of actual acreage managed for timber production will represent a large percent of total acres under Timber Prescriptions. The amount of actual Range treatment under the Range Prescription or mineral development under the Multiple Resource Area Prescription will probably be small in comparison with the total acreage under those prescriptions. Opportunities for solitude will not be greatly reduced under these prescriptions. Commodity management does not tend to increase human use except in a temporary and localized manner. The greatest potential impacts of these prescriptions will be the loss of primitive recreation opportunities on any lands accessible by new roads. Once vehicle access is established or improved, the character of use in the area served by that access shifts noticeably away from the primitive.

The consequences of alternatives on Further Planning Areas are projected for the end of the fifth decade. The timing of changes leading up to that point are not especially important since significant effects on wilderness characteristice are irreversible, the long-term picture is the critical one.

Assumptions

It is assumed, due to the relationships discussed above, that Management Prescriptions that allow or provide for road building, land disturbance, vegetation manipulation, and/or concentrated human use will have the most adverse effects on the wilderness characteristics of Roadless Areas. It is also assumed that, if non-wilderness use and development oportunities are available in Roadless Areas, they will actually take place.

It is also assumed that prescriptions with an amenity emphasis represent a low probability of adverse effects on wilderness characteristices. The designated Wilderness Prescription is assumed to represent the highest level of protection for such characteristics. These assumptions apply only in general terms. There are always site-specific exceptions.

Although road building is allowed under many Prescriptions, the actual number of road miles will probably be limited by steep topography and economic considerations. The number of acres under such prescriptions is, therefore, only a broad and indirect indicator of total miles of road likely to be constructed on those acres.

Likewise, although vegetation manipulation for range or wildlife may be permitted or encouraged under a given prescription, the amount of treatment is likely to be limited by technical feasibility and economic considerations.

Although mineral development is permissible under most prescriptions, the amount and location of such development is very difficult to predict accurately. The location and extent of the resource and the relevant economic variable are highly speculative.

Consequences Common to All Alternatives

As shown in Table 74, commodity resource outputs from Further Planning Areas do not differ greatly from one alternative to another. This fact reflects a low level of commodity production potential in such areas on a Forest-wide basis. Individual areas have pockets of land suitable for timber management, intensive range management, or intensive wildlife management, but none of the Further Planning Areas have alpine ski area or summer developed site potential. See Appendix C for a display of outputs for individual areas.

Table 74
Selected Resource Outputs for Further Planning Areas Taken as a Whole
(average annual outputs - fifth decade)

	Alternatives					
Output	PRF	CUR	RPA	CEE	AMN	AMB
Recommended Wilderness (M acres)	172.6	107.6	0	339.8	510.8	222.7
Non-wilderness (M acres)	451.2	516.2	623.8	284.0	113.0	401.1
Developed Recreation (M RVDs)	0	0	0	0	0	0
Non Wilderness Dispersed Recreation (M RVDs)	35.5	37.0	46.4	7.9	2.5	15.7
Wilderness Recreation (M RVDs)	15.5	14.0	0	56.3	72.5	39.1
Wildlife and Fish User Days (M WFUDs)	42.8	42.6	43.7	36.3	34.5	35.1
Grazing (M AUMs)	9.6	10.3	10.4	8.5	8.1	9.6
Suitable Timber Land (M acres)	0	0	1.1	0	0	0
Timber Volume						
(MMCF)	0	0	0.1	0	0	0
(MMBF)	0	0	0.7	0	0	0
Gross Benefits (MM$)	1.9	1.9	2.0	2.2	2.1	2.0
Total Costs (MM$)	0.6	0.6	0.6	0.8	0.7	0.6
Net Benefits (MM$)	1.3	1.3	1.4	1.4	1.4	1.4

Table 75
Acreage Allocations by Prescription
Further Planning Areas Taken as a Whole
(M acres)

		Alternatives					
Management Prescription (Rx)		**PRF**	**CUR**	**RPA**	**CEE**	**AMN**	**AMB**
1.	Designated Wilderness	0	0	0	0	0	0
2.	Proposed Wilderness	172.6	107.6	0	339.8	510.8	222.7
3.	Mountain Sheep	30.1	27.1	0	0	0	27.1
4.	Mule Deer	13.8	0	0	9.0	12.1	13.0
5.	Research Natural Area*	11.8	11.8	11.8	3.3 (8.5)	0 (11.8)	8.5 (3.3)
6.	Mono Basin NF Scenic Area*	4.8	4.8	4.8	0 (4.8)	0 (4.8)	0 (4.8)
7.	Ancient Bristlecone Pine Forest*	22.3	22.4	22.41	16.4 (6.0)	16.4 (6.0)	22.4
8.	Wild and Scenic River	0	0	0	0	0	0
9.	Uneven-aged Timber Mgmt.	0	0	0	0	0	0
10.	High Level Timber Mgmt.	0	0	1.1	0	0	0
11.	Range	2.0	35.8	41.9	2.4	1.5	1.5
12.	Concentrated Rec. Area	0	0	0	0	0	0
13.	Alpine Ski Area	0	0	0	0	0	0
14.	Potential Alpine Ski Area	0	0	0	0	0	0
15.	Developed Rec. Site	0	0	0	0	0	0
16.	Dispersed Recreation	0	0	0	0	0	0
17.	Semi-Primitive Recreation	305.1	163.1	57.0	5.6	83.0	309.4
18.	Multiple Resource Area	121.2	251.2	484.89	247.3	0	24.3

*Acres with dual designation (proposed wilderness and RNA, Scenic Area, etc.) are displayed in the acreage total for Prescription #2 and indicated in parentheses under the other applicable prescription.

Consequences That Vary by Alternative

PRF (Preferred): In this alternative, 28 percent of total acres in Further Planning Areas will be recommended for wilderness, resulting in 38 percent of total Forest lands under wilderness designation.

Of the four Further Planning Areas recommended for wilderness the area most likely to be affected by wilderness designation will be the White Mountain area. Opportunities for wilderness recreation in that area are moderate, and trail-building opportunities are available. Recreation use will therefore be expected to increase, and opportunities for solitude to decrease somewhat under wilderness designation. The Tioga Lake and Table Mountain areas are already seen by the general public as part of existing wildernesses; use of those areas will be expected to increase under wilderness designation, but overall changes will be slight. The Paiute-Mazourka area currently receives little use, and due to the lack of water in that area little increase in use will be expected.

Management Prescriptions with an emphasis on amenity values will be applied to 52 percent of Further Planning Areas. Wilderness characteristics on such acres will be expected to change very little by the end of the fifth decade.

Management Prescriptions with an emphasis on commodity production and ease of access will be applied to 20 percent of Further Planning Areas. Wilderness characteristics in these areas could be reduced over the planning horizon; opportunities for solitude will be the characteristic that will be the least changed, as these prescriptions do not foster intense visitation.

CUR: (Current Program): In this alternative 17 percent of total acres in Further Planning Areas will be recommended for wilderness, resulting in 35 percent of total Forest lands under wilderness designation.

Of the two Further Planning Areas recommended for wilderness, the area most likely to be affected by wilderness designation will be the White Mountain area. Opportunities for wilderness recreation in that area are moderate, and trail-building opportunities are available. Recreation use will therefore be expected to increase, and opportunities for solitude to decrease somewhat under wilderness designation. The Paiute area currently receives little use, and (due to the lack of water in that area) little increase in use will be expected.

Management Prescriptions with an emphasis on amenity values will be applied to 37 percent of Further Planning Areas. Wilderness characteristics on such acres will be expected to change very little by the end of the fifth decade.

Management Prescriptions with an emphasis on commodity production and ease of access will be applied to 46 percent of Further Planning Areas. Wilderness characteristics in these areas could be reduced over the planning horizon; opportuties for solitude will be the characteristic that will be the least changed, as these prescriptions do not foster intense visitation.

RPA (1980 RPA Program): In this alternative, none of the acreage in Further Planning Areas will be recommended for wilderness. Existing wilderness represents 30 percent of total Forest lands.

Management Prescriptions with an emphasis on amenity values will be applied to 15 percent of Further Planning Areas. Wilderness characteristics in such acres will be expected to change very little by the end of the fifth decade.

Management Prescriptions with an emphasis on commodity production and ease of access will be applied to 85 percent of Further Planning Areas. Wilderness characteristics in these areas could be reduced over the planning horizon; opportunities for solitude will be the characteristic that will be the least changed, as these prescriptions do not foster intense visitation.

CEE (Maximize Cost-Efficiency): In this alternative 54 percent of total acres in Further Planning Areas will be recommended for wilderness, resulting in 47 percent of total Forest lands under wilderness designation.

Of the six Further Planning Areas recommended for wilderness, the areas most likely to be affected by wilderness designation will be Coyote Southeast and White Mountains. Current use in the Coyote Southeast area centers on four-wheel drive access. That type of use will be limited to road corridors in this alternative. Primitive recreation opportunities in the area are moderate, and will increase once vehicle-based recreation was excluded. Opportunities for wilderness recreation in the White Mountains are moderate, and trail-building opportunities are available. Recreation use will therefore be expected to increase, and opportunities for solitude to decrease somewhat under wilderness designation

The Laurel-McGee, Tioga Lake, Hall, and Log Cabin-Saddlebag areas are already seen by the general public as part of existing wildernesses; use of those areas will be expected to increase under wilderness designation, but overall changes will be slight.

Management Prescriptions with an emphasis on amenity values will be applied to 5 percent of Further Planning Areas. Wilderness characteristics on such acres will be expected to change very little by the fifth decade.

Management Prescriptions with an emphasis on commodity production and ease of access will be applied to 41 percent of Further Planning Areas. Wilderness characteristics in these areas could be reduced over the planning horizon. Opportuties for solitude will be the characteristic that will be the least changed, as these prescriptions do not foster intense visitation.

AMN (Maximize All Amenities): In this alternative 82 percent of total acres in Further Planning Areas will be recommended for wilderness, resulting in 56 percent of total Forest lands under wilderness designation.

Of the twelve Further Planning Areas recommended for wilderness, the areas most likely to be affected by wilderness designation will be the Coyote Southeast and White Mountain areas. (See the CEE effects on Coyote listed above.)

The Table Mountain, Wheeler Ridge, Tioga Lake, Hall, and Log Cabin-Saddlebag, areas are already seen by the general public as part of existing wildernesses; use of those areas will be expected to increase under wilderness designation, but overall changes will be slight.

The Buttermilk, Horse Meadow, Benton Range, Andrews Mountain, and Paiute areas currently receive little use. The lack of recreational attractions and/or lack of water will prevent use from increasing substantially under wilderness designation.

Management Prescriptions with an emphasis on amenity values will be applied to the remaining 18 percent of Further Planning Areas. Wilderness characteristics on such acres will be expected to change very little by the end of the fifth decade.

AMB (Emphasize Wildlife and Recreation): In this alternative 36 percent of total acres in Further Planning Areas will be recommended for wilderness, resulting in 41 percent of total Forest lands under wilderness designation.

Of the six Further Planning Areas recommended for wilderness, the area most likely to be affected by wilderness designation will be the White Mountain area. Opportunities for wilderness recreation in that area are moderate, and trail-building opportunities are available. Recreation use will therefore be expected to increase, and opportunities for solitude to decrease somewhat under wilderness designation.

The western third of Coyote Southeast, Laurel-McGee, Tioga Lake, and Log Cabin-Saddlebag areas are already seen by the general public as part of existing wildernesses; use of those areas will be expected to increase under wilderness designation, but overall changes will be slight.

The Paiute-Mazourka area currently receives little use, and (due primarily to a lack of water) little increase in use will be expected.

Management Prescriptions with an emphasis on amenity values will be applied to 61 percent of Further Planning Areas. Wilderness characteristics on such acres will be expected to change very little by the fifth decade.

Management Prescriptions with an emphasis on commodity production and ease of access could be applied to 3 percent of Further Planning Areas. Wilderness characteristics in these areas will be reduced over the planning horizon; opportunities for solitude will be the characteristic that will be the least changed, as these prescriptions do not foster intense visitation.

GEOLOGY

Introduction

Those elements of the geologic resource subject to consequences under the alternatives are groundwater, mineral materials, outstanding geologic features, and geologic processes active within the Forest boundary. Forest activities that could affect geologic resources include facility

construction, geothermal energy production, recreation management, and wilderness recommendations.

Consequences of these activities are assessed in terms of the availability of and consumption rate for groundwater, the protection afforded to outstanding geologic features, and the level of risk to Forest users from geologic processes. Mineral materials are discussed under the heading of Minerals. Data sources for this analysis include an inventory of geologic hazards on the Inyo National Forest, an inventory of consumptive water use on the Inyo National Forest, and the projected outputs for these elements under each alternative.

Indicators

1. Groundwater

   - Geothermal development

   - Ski area development

   - Recreation site development

   - Community size.

2. Outstanding geologic features

   - Special interest area candidates

   - Wilderness recommendations.

3. Geologic processes (slope stability and seismic processes)

   - New road construction

   - Geothermal development.

Recreational facility use, ski area use, geothermal power production, and home and business consumption within communities are the major sources of demand for groundwater consumption which could be expected on the Inyo National Forest during the next 50 years. The demand for groundwater to supply ski areas, recreation sites, and geothermal sites will be proportional to the amount of development. The demand for water to supply communities will be roughly proportional to alpine ski area capacity, as the communities with the greatest potential need for water from on-Forest groundwater sources are those with the greatest economic dependency on alpine skiing.

Geothermal power plants represent a wide range of possible water consumption. Consumption can range from none at all (for a small power plant) to approximately 3,100 ac-ft/year for a very large power plant supplying all of its water needs from outside sources. The consumption for most facilities will be less than the maximum possible because condensate from geothermal steam will supply some of the demand. The needed water could be supplied by either groundwater or surface sources, or a combination of the two. This discussion will assume that only groundwater sources are used.

Outstanding geologic features included in designated wilderness will be protected from inadvertant damage by heavy recreational use and land-disturbing activities. Features included in a special interest area will be managed for protection of the feature as well as for interpretation and public enjoyment.

Geologic processes can result in events such as earthquakes, landslides, rock falls, lava flows and ash falls. These events often dramatically change the land itself and adversely affect people, both during and after the event. Land uses are influenced by the location of geologic events and by the size of the area affected. Land uses also occasionally influence the location and timing of geologic events. For example, road and facility construction needed to support timber harvest, energy development and developed recreation could induce slope failure; geothermal energy production could increase earthquake activity or initiate ground subsidence.

People who use the land are subject to some level of risk when they enter areas where events occur naturally or have been influenced by previous land use. That level of risk could change with changes in land use. In addition, concentration of recreation use can increase risks by interfering with rapid evacuation in case of a geologic event.

Assumptions

Groundwater is considered a renewable resource since a yearly supply is available to replace or partially replace the water consumed. Over a long period of time, however, groundwater is a finite resource and availability will depend on the relationship of supply and demand.

Outstanding geologic features are considered a nonrenewable resource. Once a feature is altered so that its uniqueness is gone, the resource is irretrievably lost.

None of the alternatives will have any effect on volcanic processes. The alternatives will affect neither the forces that cause a volcanic eruption nor the surface effects of an eruption.

Forest-wide Standards and Guidelines deal with the need to consider risks from geologic processes, the need to assess groundwater supplies on a Forest-wide basis, the need to evaluate and make recommendations for geologic Special Interest Area candidates, and the need to consider geologic Research Natural Areas as a component of the Regional RNA program. There are however, no standards or guidelines that directly protect outstanding geologic features from the impacts of Forest activities.

Table 76
Estimated Demand for Groundwater
by the end of the fifth decade
(acre-feet/year)

Indicators	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
Developed recreation site use						
-existing use	105	105	105	105	105	105
-conversion from surface sources for existing needs	43	43	43	43	43	43
-new sources for projected needs	81	0	99	81	3	47
Community use						
-conversion from surface sources for existing needs	1480	1480	1480	1480	1480	1480
-new sources for existing needs	1480	1480	1480	1480	1480	1480
-new sources for projected needs	3000	3000	3000	6000	750	3000
Ski area use						
-existing use	300	300	300	300	300	300
-new sources for existing needs	300	300	300	300	300	300
-new sources for projected needs	600	600	600	1200	300	600
Total existing use	**405**	**405**	**405**	**405**	**405**	**405**
Total increased use	**6984**	**6903**	**7002**	**10584**	**4356**	**6950**
TOTAL PROJECTED USE	**7389**	**7308**	**7407**	**10989**	**4761**	**7355**

Consequences Common to All Alternatives

The Forest Service currently uses 105 ac-ft/year of groundwater to support existing facilities. An additional 43 ac-ft/year currently being supplied to existing facilities by surface sources will be converted to groundwater sources under all alternatives.

Identified geologic Special Interest Area candidates will be evaluated, and recommendations made by 1990 under all alternatives.

A number of outstanding geologic features will be protected by their location in existing wilderness, Research Natural Areas, the Ancient Bristlecone Pine Forest, and the Mono Basin National Forest Scenic Area under all alternatives.

The Town of Mammoth Lakes will improve its existing water-supply base by withdrawing 2,960 ac-ft of groundwater per year that are not currently withdrawn. The remaining current demand will be supplied from surface sources. Mammoth Mountain ski area will withdraw 600 ac-ft/year to support existing needs under all alternatives.

The amount of estimated geothermal development (six power plants in Lease Blocks I and II) and the amount of groundwater potentially used by those plants (from 0 to 18,600 ac-ft/year) will be common to all alternatives. Geothermal development will also include increased potential for slope failure from facility development and for seismic activity induced by fluid injection.

The development of geothermal resources, which could occur under all alternatives, could affect the thermal features in the Hot Creek Gorge. These features are identified as special geologic features and are candidates for a Special Interest Area classification.

Consequences That Vary by Alternative

PRF: (Preferred) The demand for groundwater relative to existing needs will nearly double by the end of the fifth decade due to new recreation facilities, ski areas, and increased community demand.

Four recommended wilderness additions (172,600 acres) will constitute a moderately low level of protection for outstanding geological features.

The potential for increased slope failure in areas with steep slopes will be relatively high, due to the construction of 87 miles of new road (including geothermal access), increased ski area capacity of 9,000 SAOT, and construction of recreation facilities to support 14,000 new PAOT. The rapid evacuation of concentrated recreation areas will be more difficult with increased use, increasing the risk to Forest visitors represented by geologic events.

CUR: (Current Program) The demand for groundwater relative to existing needs will nearly double by the end of the fifth decade due to new ski areas and increased community demand.

Two recommended wilderness additions (107,600 acres) will constitute a moderately low level of protection for outstanding geological features.

The potential for increased slope failure in areas with steep slopes will be moderate-to-low, as only 33 miles of new road (including geothermal access) and no new recreation facilities will be constructed; ski area capacity will, however, increase by 19,000 SAOT. Opportunities for rapid evacuation of concentrated recreation areas will not change, as recreation use will not increase from current levels; the risk to Forest visitors represented by geologic events will, therefore, remain the same.

RPA: (1980 RPA Program) The demand for groundwater relative to existing needs will nearly double by the end of the fifth decade due to new ski areas, new recreation developments, and increased community demand.

As there will be no recommended wilderness additions, outstanding geologic features outside of existing wilderness or candidate Special Interest Areas will be unprotected.

The potential for increased slope failure in areas with steep slopes will be relatively high, due to the construction of 115 miles of new road (including geothermal access), new alpine ski area capacity amounting to 26,000 SAOT, and new recreation facilities to serve 17,000 PAOT. Opportunities for rapid evacuation of concentrated recreation areas will be reduced by increased use of those areas; the risk to Forest visitors represented by geologic events will, therefore, increase.

CEE: (Maximize Cost-Efficiency) The demand for groundwater relative to existing needs will nearly triple by the end of the fifth decade due to new ski areas, new recreation developments, and increased community demand.

As six Further Planning Areas (339,800 acres) will be recommended for wilderness, the level of protection for outstanding geologic features will be moderately high.

The potential for increased slope failure in areas with steep slopes will be highest under this alternative, due to the construction of 77 miles of new road (including geothermal access), new alpine ski area capacity amounting to 41,000 SAOT, and new recreation facilities to serve 14,000 PAOT. Opportunities for rapid evacuation of concentrated recreation areas will be reduced by increased use of those areas; the risk to Forest visitors represented by geologic events will, therefore, increase.

AMN: (Maximize All Amenities) The demand for groundwater relative to existing needs will increase by a third by the end of the fifth decade due to increased ski area capacity and increased community demand.

As twelve Further Planning Areas (510,800 acres) will be recommended for wilderness, the level of protection for outstanding geologic features will be high.

The potential for increased slope failure in areas with steep slopes will be relatively low, as only 26 miles of new road (including geothermal access), 600 PAOT of new recreation sites, and 11,000 new SAOT will be developed. Opportunities for rapid evacuation of concentrated recreation areas will be unchanged, as use of those areas will remain the same; the risk to Forest visitors represented by geologic events will also, therefore, remain the same.

AMB: (Emphasize Wildlife and Recreation) The demand for groundwater will nearly double by the end of the fifth decade due to new ski areas, new recreation developments, and increased community demand.

As six Further Planning Areas (222,700 acres) will be recommended for wilderness, the level of protection for outstanding geologic features will be moderate.

The potential for increased slope failure in areas with steep slopes will be moderate due to the construction of 50 miles of new road (including geothermal access), new alpine ski area capacity amounting to 23,000 SAOT, and new recreation facilities to serve 8,300 PAOT. Opportunities for rapid evacuation of concentrated recreation areas will be reduced by increased use of those areas; the risk to Forest visitors represented by geologic events will, therefore, increase.

LANDS

Forest activities that have major effects on the lands program include recreation management, minerals management, wildlife management, and energy development.

Lands administration activities occur in response to resource needs, laws, regulations, and policies regarding boundary adjustments, landline surveys, occupancy trespass, landownership adjustments, special land uses, rights-of-way, transportation and utility corridors, and withdrawals.

Consequences of these resource management activities on the lands program are assessed in terms of changes in landownership adjustments and land uses under special use permit. The Forest planning alternatives will not affect most other aspects of the lands program. Withdrawals are discussed under the heading of Minerals.

Indicators

1. Ski area capacity
2. Alternative theme.

Landownership adjustments on the Forest focus heavily on lands surrounding the communities of Mammoth Lakes and (to a lesser degree) June Lake. The amount of landownership adjustment associated with community needs is related directly to the size of those communities and to ski area development as the major economic stimulus for community growth.

The demand for community service land uses under special use permit is also affected by community size and, therefore, by ski area capacity.

Certain private lands within the Forest boundary have significant recreation development or wildlife habitat values. Although such lands are a high priority for acquisition under any alternative, that priority is emphasized under alternatives with a recreation or wildlife emphasis.

Consequences Common to All Alternatives

Overall priorities for land acquisition and land disposal are stated in the Forest-wide Standards and Guidelines common to all alternatives.

Land acquisition will always be subject to the landowner's interest in disposing of lands and the availability of funds for purchase (or National Forest land suitable for exchange).

Rights-of-way and landline surveys will not differ appreciably between alternatives except for the RPA alternative, which proposes to meet the RPA goal for landline surveys.

Geothermal development within existing or future leased areas could require powerline rights-of-way for low voltage powerlines should power production facilities be built. It may not be possible to co-locate these powerline rights-of-way with existing rights-of-way.

Consequences that Vary by Alternative

PRF: (Preferred) This alternative envisions moderately high levels of demand for landownership adjustment and special use permits related to community needs. The emphasis on increased summer recreation opportunities places special importance on the acquisition of lands with recreation potential.

CUR: (Current Program) This alternative envisions nearly twice the ski area capacity as in 1982 and moderately high levels of demand for landownership adjustment and special use permits related to community needs. As there are no projected increases in summer recreation opportunities, there will be no special emphasis on acquiring lands for that purpose.

RPA: (1980 RPA Program) This alternative envisions more than twice the ski area capacity as in 1982 and moderately high levels of demand for landownership adjustment and special use permits related to community needs. The emphasis on increased summer recreation opportunities places special importance on the acquisition of lands with recreation potential. In addition, landline surveys are projected at a rate of 33 miles per year in order to meet the RPA goal.

CEE: (Maximize Cost-Efficiency) This alternative envisions nearly three times the ski area capacity as in 1982 and extremely high levels of demand for landownership adjustment and special use permits related to community needs. The emphasis on increased summer recreation opportunities places special importance on the acquisition of lands with recreation potential.

AMN: (Maximize All Amenities) This alternative envisions a 50 percent increase in ski area capacity over 1982 and moderate levels of demand for landownership adjustment and special use permits related to community needs. As few new recreation developments are proposed, there is no special emphasis on the acquisition of lands with recreation potential. The amenity emphasis, however, increases the importance of acquiring private lands with wildlife habitat value.

AMB: (Emphasize Wildlife and Recreation) This alternative envisions more than twice the ski area capacity as in 1982 and moderately high levels of demand for landownership adjustment and special use permits related to community needs. As increased summer recreation opportunities are moderate, the importance of acquiring lands with recreation potential will also be moderate. The wildlife emphasis will increase the importance of acquiring lands with habitat value.

MINERALS

Introduction

Forest activities that have major effects on locatable mineral opportunities include mineral withdrawals and wilderness recommendations. The Forest emphasis on aminity values, such as visual quality, wildlife habitat, and recreation, and on other resource values, such as water quality, soil productivity, and vegetation may affect specific mineral exploration or development proposals and site access. Activities with effects on saleable mineral (mineral material) management include facility and road construction and community growth.

Consequences of these management activities are assessed in terms of lands suitable for mineral exploration and development, geothermal development scenarios, and the supply of mineral materials as it relates to demand.

Data sources for this analysis include mineral potential ratings in the Forest data base, approved environmental assessments for geothermal leasing in Lease Blocks I and II, and the Forest-wide inventory of mineral materials.

Indicators

The following indicators were used to assess the effects of each alternative.

1. Locatable minerals
   - Mineral withdrawals
   - Wilderness recommendations.

2. Leasable minerals
   - Geothermal leasing decisions.

3. Mineral materials
   - Road construction/reconstruction
   - Geothermal power plants
   - New alpine ski area capacity
   - New developed recreation site capacity
   - Other uses (county, state, private, etc.).

Designated wilderness areas and lands that are withdrawn from mineral entry both represent a loss of mineral opportunity, as new mining claims cannot be filed and developments on valid existing claims could be prohibited or restricted. The relative importance of overall opportunity loss is indicated by the mineral-potential rating of the lands withdrawn. The loss of lands

with low mineral-potential ratings is of less concern than those with high or medium mineral-potential ratings.

Decisions to issue leases for geothermal exploration and development are based on site-specific environmental analyses and documentation. The decisions to offer geothermal leases in Lease Blocks I and II of the Mono-Long Valley KGRA (north and east of Mammoth Lakes) have already been made. Surface occupancy stipulations and other mitigation measures will limit development in those lease blocks to approximately 300 acres (an estimated six power plants). Any additional leasing proposals will be evaluated on a case-by-case basis.

The volume of mineral materials consumed will be proportional to the amount of projected construction. Roads, power plants, ski areas, recreational facilities, and uses by other private and government entities represent the major types of construction which will be expected on the Forest over the next 50 years.

1. Roads are constructed and reconstructed for timber management, developed recreation site access, and geothermal power developments.

2. Ski areas, other developed recreation sites, and geothermal plants require mineral materials for facilities (such as parking areas and base facilities) in addition to roads.

3. The urban growth associated with new alpine ski area development will place an additional demand on mineral materials for county and private sector construction within Mammoth and June Lake.

Depletion of construction material sources will occur faster on some areas of the Forest than others because neither supply nor demand are uniformly distributed. Alternatives will differ in the availability of materials from new sources by imposing different patterns of Management Prescriptions with different constraints. The effects of this difference will be reflected in the costs of constructing facilities and roads in areas adjacent to depleted sources. Management Prescriptions could also change the availability and utilization of existing sites.

Assumptions

The public demand for locatable mineral exploration and development is projected to change little from the 1982 base year level for all alternatives.

Most locatable mineral exploration and development will take place in the White and Inyo Mountains.

Exploration for oil and gas is not expected to take place on the Forest.

The following assumptions are used in the calculation of mineral material supply figures:

1. The average new or reconstructed road is defined as a single lane with turnouts, 12-foot top width, 3-foot shoulder and 6-inch aggregate thickness requiring 2,640 tons of aggregate per mile.

2. The average weight of construction material is 1.8 tons per cubic yard.

3. Average annual consumption is defined as tons-per-year needed to support road reconstruction and construction.

4. Supply life is defined as the inventoried supply (1.98 million tons) divided by the average annual consumption in tons per year.

Consequences Common to All Alternatives

Mineral exploration and development proposals result from sources beyond the control of the Forest Service in response to somewhat unpredictible minerals market conditions. These conditions are outside the scope of the plan and will occur regardless of alternative. All forest land not specifically withdrawn from mineral entry is open to mineral activity including the right of the claimant to reasonable entry.

Existing wilderness (565,100 acres), the Ancient Bristlecone Pine Forest (28,887 acres), the Mono Basin National Forest Scenic Area (45,000 acres), and all existing and recommended Research Natural Areas (14,900 acres outside wilderness) will be closed to mineral entry under all alternatives. Only recommended wilderness acreage will vary by alternative.

Geothermal development will take place in Lease Blocks I and II in all alternatives. Full development is projected as six power plants; 300 acres will actually be occupied by facilities, while approximately 4,000 acres will be affected.

Consequences that Vary by Alternative

The following figures are helpful in understanding the effects of alternatives on minerals management. Table 77 displays acres available for mineral entry by mineral-potential rating for each alternative. Table 78 displays the relative demand for mineral materials under each alternative.

Table 77
Lands Available for Mineral Entry
(M acres)

Indicator	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
Lands withdrawn from mineral entry (M acres)						
-Mineral potential high	26.6	26.3	23.5	50.6	10.7	72.3
-Mineral potential medium	34.5	32.4	5.0	78.7	101.6	34.2
-Mineral potential low	195.0	132.3	55.0	289.1	381.0	194.9
-Existing wilderness*	565.1	565.1	565.1	565.1	565.1	565.1
-TOTAL	**761.2**	**756.2**	**648.6**	**983.5**	**1158.4**	**866.5**
Lands available for mineral entry (M acres)						
-Mineral potential high	108.2	107.5	110.4	84.3	28.1	62.6
-Mineral potential medium	174.5	176.6	204.1	130.3	107.4	174.8
-Mineral potential low	825.8	888.4	965.8	731.6	639.7	825.9
-TOTAL	**1168.5**	**1172.5**	**1280.3**	**946.2**	**775.2**	**1063.3**

*Mineral-potential ratings are not available for existing wilderness.

Table 78
Demand for Mineral Materials
(end of the fifth decade)

	Alternatives					
Type of Demand	PRF	CUR	RPA	CEE	AMN	AMB
Road construction (including geothermal access roads) (miles)	87	33	115	77	26	50
Road reconstruction (miles)	750	830	1280	1050	650	850
Supply life (years - if materials were used only for roads)	41	43	27	33	56	42
Geothermal power plants (number)	6	6	6	6	6	6
New developed summer recreaton capacity (M PAOT)	14.0	0	14.1	14.0	0.6	10.7
Adjusted supply life, including other uses (years)	22	31	20	23	39	28

PRF: (Preferred) Opportunities for mineral exploration and development will be relatively high under this alternative, as 90 percent of lands outside of existing withdrawals with high or moderate mineral-potential ratings will be available for mineral entry.

Road reconstruction and construction will deplete the current inventoried supply of mineral materials in 41 years. Additional demand for materials will come from an increase in developed recreation, the construction of six geothermal plants, increased ski area capacity, and other uses. The additional demand could shorten the supply life by as much as 11 years. The emphasis on developed and dispersed recreation will restrict the location and development of replacement sites.

CUR: (Current Program) Opportunities for mineral exploration and development will be relatively high under this alternative, as 90 percent of lands outside of existing withdrawals with high or moderate mineral-potential ratings will be available for mineral entry.

Road reconstruction and construction will deplete the current inventoried supply of mineral materials in 43 years. Additional demand for materials will come from the construction of six geothermal power plants, increased alpine ski area capacity, and other uses. The additional demand could shorten the supply life by as much as 12 years.

RPA: (1980 RPA Program) Opportunities for mineral exploration and development will be highest under this alternative, as all lands outside of existing withdrawals with high or moderate mineral-potential ratings will be available for mineral entry.

Road reconstruction and construction will deplete the current inventoried supply of mineral materials in 27 years. Additional demand for materials will come from an increase in developed recreation, the construction of six geothermal plants, increased alpine ski area capacity, and other uses. The additional demand could shorten the supply life by as much as seven years. The emphasis on developed recreation will restrict the location and development of replacement sites in areas of concentrated use. On the other hand, new areas could be available for mineral material site development as new roads will be allowed in most previously unroaded areas.

CEE: (Maximize Cost-Efficiency) *Opportunities for mineral exploration and* development will be moderate under this alternative, as 76 percent of lands outside of existing withdrawals with high or moderate mineral-potential ratings will be available for mineral entry.

Road reconstruction and construction will deplete the current inventoried supply of mineral materials in 33 years. Additional demand for construction materials will come from an increase in developed recreation, the construction of six geothermal plants, increased alpine ski area capacity, and other uses. The additonal demand could shorten the supply life by as much as 10 years. The emphasis on developed recreation will restrict the location and development of replacement sites in areas of concentrated use. On the other hand, new areas could be available for mineral material site development as new roads will be allowed in most previously unroaded areas.

AMN: (Maximize All Amenities) Opportunities for mineral exploration and development will be relatively low under this alternative, as only 66 percent of lands outside of existing withdrawals with high or moderate mineral-potential ratings will be available for mineral entry.

Road reconstruction and construction will deplete the current inventoried supply of mineral materials in 56 years. The additional demand for construction materials for recreational development, the construction of six geothermal plants, increased alpine ski area capacity, and other uses will shorten the supply life by as much as 17 years. The emphasis on wilderness, scenic values, and dispersed recreation will restrict the location and development of replacement sites.

AMB: (Emphasize Wildlife and Recreation) Opportunities for mineral exploration and development will be moderate under this alternative, as 86 percent of lands outside of existing withdrawals with high or moderate mineral-potential ratings will be available for mineral entry.

Road reconstruction and construction will deplete the current inventoried supply of rock and earth construction materials in 42 years. Additional demand for construction materials will come from an increase in developed

recreation, the construction of six geothermal plants, increased alpine ski area capacity, and other uses. Additional demand could shorten the supply period by as much as fourteen years. The emphasis on recreation and wilderness will restrict the location and development of replacement sites.

MONO BASIN NATIONAL FOREST SCENIC AREA

Introduction

There are no Forest activities subject to the Forest planning process that have the potential to substantially affect scenic, recreational, or scientific values within the Mono Basin National Forest Scenic Area. Planning for the Scenic area, including a complete and detailed analysis of alternatives and environmental consequences, is being conducted outside the Forest planning process. Activities on National Forest lands neighboring the Scenic Area have some potential for indirect impacts. However, less than half of the area boundary adjoins lands under Forest Service control; the rest are administered by the Bureau of Land Management.

Indicators

Management Prescriptions for National Forest lands neighboring the Scenic Area are an indication of the resource management emphasis, including permitted activities and Standards and Guidelines for lands to which the prescriptions are applied.

Assumptions

As the Scenic Area is a congressionally designated area with specific values protected by law, management activities within the area and those on adjoining National Forest land will be managed with consideration for protecting those values.

Consequences Common to All Alternatives

The Management Prescriptions applied to Forest lands adjoining the Scenic Area are virtually the same for all alternatives. The Jeffrey pine forest south of the area boundary will be managed with a primary emphasis on timber production. Shrublands along the southwest boundary will be managed with a primary emphasis on livestock grazing. Lee Vining Canyon will be managed for concentrated recreation use. The steep slopes of Lee Vining Peak will either be recommended for wilderness or managed under the Limited Access prescription.

None of these Management Prescriptions will be likely to generate major impacts on the Scenic Area. As fuelwood gathering is permitted within the Scenic Area, the likelihood of that activity occurring on adjoining timber-emphasis lands will not be a problem. As grazing is currently permitted within the Scenic Area, the potential for livestock drifting into the area from adjoining rangelands will not represent a problem (if grazing were eventually excluded from or limited within the Scenic Area, a conflict could arise). Wilderness, limited access management, and concentrated recreation use are all compatible with Scenic Area values.

PEST MANAGEMENT

Introduction

Forest activities with the greatest potential to influence the pest management program include vegetation management and recreation management.

Consequences of pest-related damage in forested ecosystems are measured in terms of tree mortality, reduced growth, top-kill, and defoliation. Such damage could result in understocking, failure and/or delay of regeneration, reduced site productivity, recreation site degradation, increased numbers of hazardous trees, and other undesirable vegetation changes. Pest-related damage could ultimately have quantitative and qualitative effects on Forest outputs and services.

Indicators

Opportunities to prevent or reduce pest-related damage and the potential need for direct pest control are indicated by the following factors.

1. Timber-related: acres regenerated
2. Recreation-related
   - Developed site use
   - Developed site capacity.

Vegetation management, by creating and maintaining healthy, vigorously growing stands of trees, provides the best opportunity to prevent pest-related damage. In general, increased opportunities to bring timber stands under management (including control of stocking levels and species composition and the timely removal of stressed and/or diseased trees) should reduce the incidence of insect and disease damage.

The appropriate use of regeneration harvest is a means of removing stands that are especially susceptible to, or currently experiencing, unacceptable levels of pest-related damage. As harvested areas are regenerated, the need to protect plantations from animal damage and competing vegetation is offest by the opportunity to maintain pest damage at accepable levels throughout the life of the stand by silvicultural means. Intermediate harvest and selective cutting can also prevent or reduce damage by removing stressed individuals or groups of trees and by reducing the stocking (density) of the stand to biologically appropriate levels.

While the overall health and vigor of forested land is generally greater under timber management than under natural conditions, the value of the timber (and importance of losses to pest-related damage) is also greater where trees are managed for commercial wood production than where they are not. The intensity of pest management in timber will, therefore, be roughly proportional to the number of forested acres regenerated over the planning horizon. Although silvicultural practices will be adequate to maintain pest-related damage at acceptable levels in most cases, direct action against pests could be necessary in specific situations.

Pest control efforts needed to protect visitor health, safety, and enjoyment is roughly proportional to the amount of visitor use in developed recreation

sites. New developed site capacity indicates the addition of new areas not now managed for intensive recreation use and the need to evaluate pest-related hazard situations associated with those new areas.

Assumptions

The Integrated Pest Management (IPM) approach will be used under any alternative. However, the intensity of pest management will vary according to the objectives of each alternative, potentially resulting in different levels of Forest-wide pest damage by alternative.

The likelihood of pest-related damage depends both on climatic and environmental factors outside Forest Service control and on Forest prevention and mitigation activities.

Forest pests are managed primarily through silvicultural treatments which improve the health, vigor, and diversity of the forest. These practices reduce the susceptibility of the forest to pest infestation and resource loss. Direct control is usually limited to areas with high-value improvements such as administrative facilities, areas where public safety is a concern such as developed recreation sites, and plantations where rodent control and site preparation are needed to protect seedlings.

Consequences That Vary by Alternative

Table 79 displays the effects of alternatives on the pest management program.

Table 79
Indicators of Pest Management Intensity
and Pest-related Damage
(by the end of the fifth decade)

	Alternatives					
Indicators	PRF	CUR	RPA	CEE	AMN	AMB
Timber regeneration harvest (M acres)	10.0	40.6	65.0	29.4	16.7	20.8
Developed site recreation use (average annual MRVDs)	2900	1940	2901	2903	1944	2675
New developed site capacity (MPAOT)	14.0	0	14.1	14.0	0.6	10.7
Tentatively suitable timber not managed for maximum health and vigor (M acres)	35.5	21.6	11.5	13.1	48.9	40.9

PRF: (Preferred) The relative intensity of pest management on the Forest will be high due to the moderate amount of timber management and the major increases in developed recreation site capacity and use. The relative

overall amount of pest-related damage will be moderate, as 37 percent of tentatively suitable timber land will not be managed for maximum health and vigor.

Timber-related pest management will be relatively low, as only 10,000 acres will be regenerated in the first 50 years.

The level of pest management required in developed recreation sites in the first decade will be similar to that experienced in 1982. By the end of the fifth decade, pest management needs will have increased in proportion to the 55 percent increase in developed recreation capacity and 57 percent increase in use.

CUR: (Current Program) The overall intensity of pest management on the Forest will be moderate due to the moderate amount of timber management and the decline of developed recreation site use. The overall amount of pest-related damage will be moderate, as 20 percent of tentatively suitable timber land will not be managed for maximum health and vigor.

Timber-related pest management will be moderate, as 40,600 acres will be regenerated in the first 50 years.

The level of pest management required in developed recreation sites for this alternative will be similar to that experienced in 1982.

RPA: (1980 RPA Program) The overall intensity of pest management on the Forest will be high due to the high level of timber outputs and the major increases in developed recreation site capacity and use. The overall amount of pest-related damage will be low, as only 10 percent of the tentatively suitable timber base will not be managed for maximum health and vigor.

Timber-related pest management will be relatively high, as 64,990 acres will be regenerated within the first 50 years.

The level of pest management required in developed recreation sites in the first decade will be similar to that experienced in 1982. By the end of the fifth decade, pest management needs will have increased in proportion to 55 percent increase in developed recreation capacity and 57 percent increase in use.

CEE: (Maximize Cost-Efficiency) The relative intensity of pest management on the Forest will be moderate, due to the moderate amount of timber management and the major increases in developed recreation site capacity and use. The relative amount of pest-related damage will be low, as only 12 percent of the tentatively suitable timber base will not be managed for maximum health and vigor.

Timber-related pest management will be relatively low, as only 29,370 acres will be regenerated in the first 50 years.

The level of pest management required in developed recreation sites in the first decade will be similar to that experienced in 1982. By the end of the fifth decade, pest management needs will have increased in proportion to 55 percent increase in developed recreation capacity and 57 percent increase in use.

AMN: (Maximize All Amenities) The relative intensity of pest management on the Forest will be low due to the low level timber management and the minimal increases in developed recreation site capacity and use. The relative amount of pest-related damage will be moderate to high as 44 percent of the tentatively suitable timber base will not be managed for maximum health and vigor.

Timber-related pest management will be relatively low, as only 16,660 acres will be regenerated in the first 50 years.

The level of pest management required in developed recreation sites will be similar to that experienced in 1982.

AMB: (Emphasize Wildlife and Recreation) The overall intensity of pest management on the Forest will be moderate, due to the moderate amount of timber management and the moderate increases in developed recreation site capacity and use. The overall amount of pest-related damage will be moderate, as 37 percent of tentatively suitable timber will not be managed for maximum health and vigor.

Timber-related pest management will be relatively low, as only 20,840 acres will be regenerated in the first 50 years.

The level of pest management required in developed recreation sites in the first decade will be similar to that experienced in 1982. By the end of the fifth decade, pest management needs will have increased in proportion to 42 percent increase in developed recreation capacity and 44 percent increase in use.

PROTECTION (FIRE MANAGEMENT)

Introduction

Forest activities that can have major effects on the fire protection program include fire management, recreation management, timber management, wilderness designation, road construction, and prescribed fire projects for other resources.

Consequences of these activities are assessed in terms of the expected changes in the number of fires, acres burned, damages, benefits, and costs. Data sources for this analysis include historical fire data and the application of the National Fire Analysis System (USDA Forest Service, 1982), which predicts fire management costs and resource damage under various fire management organizations.

Indicators

While most activities within and adjacent to the Forest have the potential to affect the fire management operation, only the following indicators were used to compare the environmental consequences of the alternatives.

1. Fire management organization
2. Appropriate suppression strategies used
3. Summer recreation use
4. Timber harvest
5. Wilderness recommendations
6. Prescribed fire for other resource management
7. New access roads.

The fire organization has a major effect on the number of fires and acres burned by alternative. The primary elements of the fire organization that vary by alternative are staffing level relative to 1982 and the relative emphasis placed on prevention versus suppression.

Another major potential factor is the combination of fire supression strategies applied. If the control strategy is applied on a Forest-wide basis, overall acres burned will be greater than if the confinement and containment strategies were applied where appropriate.

There are two reasons for this:

1. When individual fires are allowed to burn larger acreage under confinement or containment, the result is reduced fuels accumulation and reduced likelihood of a later, larger fire.

2. When the fire suppression forces are focusing their attention most closely on those lands with the highest fire risk factors and highest resource values, they are more likely to limit the size of fires on those lands (and, consequently, on overall acres burned) than if they were to focus equal attention on all lands, regardless of risk and value considerations.

The amount of recreation use is the third major determinant of wildfire in general, and the primary determinant of human-caused fires. Historic patterns demonstrate that the number of fires and the acreage burned increase in proportion to increased recreation use of the Forest. The need for fire prevention programs and considerations of public safety during suppression actions are additional factors affected by the amount of recreation use.

An increased emphasis on regeneration harvest in suitable timber will result in timber plantations requiring intensive and well planned fire protection. The level of timber harvest and associated vegetation treatment will also determine the fire hazard resulting from fuels accumulation on tentatively suitable timber land (approximately 100,000 acres Forest-wide). Finally, untreated logging debris and tree plantations will affect the rate at which fires spread, fire resistance to control, and the economic value of potential timber losses.

As wilderness designation restricts the use of mechanized equipment for fire management, the mix of fire-protection resources and management options may change as the acres of land under wilderness designation changes.

The amount of prescribed fire for resource objectives such as wildlife habitat improvement, range betterment, and timber site preparation can affect fuel types, resource protection needs, and costs.

Improved road access both increases the risk of human-caused fires and facilitates fire suppression.

Assumptions

The economic analysis of fire management costs and benefits on Inyo National Forest land indicates that the most cost-effective fire organization will entail a reduction relative to the 1982 organization. However, the range of desirable options for fire management on the Forest is limited by the fact that the Forest surrounds, adjoins, or neighbors the communities of Lee Vining, June Lake, Mammoth Lakes, Crowley Lake, Swall Meadows, Paradise Estates, Starlight Estates, Aspendell, and Aberdeen. Much of this community land is developed with valuable improvements. The desire to prevent wildfire originating on National Forest land from damaging or destroying these improvements must be considered, along with economic efficiency, when selecting a fire organization.

Consequences Common to All Alternatives

Although the level of timber harvest varies by alternative, the public fuelwood program and fuel treatment as part of each timber sale are expected to minimize fuels buildup and associated fire hazards; consequently, no fuels treatment for fire hazard reduction in timber is proposed under any alternative. The fire analysis indicates that costs and values related to timber harvest vary little from one alternative to another.

Although wilderness recommendations vary considerably by alternative, their effects on fire management do not vary. Further Planning Areas on the Forest generally rate low in fire risk and resource values. Most of the vegetation is sparsely distributed brush, there are large barren areas, and most of the acreage is located at high elevations low in oxygen and temperature. The effects of different wilderness recommendations on overall recreation use are included in the recreation-use indicator.

The acreage of vegetation treated with prescribed fire for other resource management purposes will not be great enough to significantly affect fuel conditions from a wildfire management point of view under any alternative.

Although improved road access will aid with fire suppression, any gains will be offset by the increases in recreation due to improved access and consequent increases in human-caused fires on more accessible lands.

Lightning accounts for about sixty percent of all wildfires on the Forest. These fires will continue to require some kind of suppression action in all alternatives.

Consequences That Vary by Alternative

The management activities, objectives, and program direction for each alternative are discussed in comparison with base year 1982. The primary sources of variation between alternatives are the fire management program chosen, suppression strategies applied, and amount of recreation use. The primary variable affected will be acres burned by wildfire.

Table 80 displays the effects of alternatives on fire management.

Table 80
Indicators of Consequences on Fire Management

	Alternatives					
Indicators	**PRF**	**CUR**	**RPA**	**CEE**	**AMN**	**AMB**
Fire management program selected:						
-staffing relative to 1982	1982	1982	1982	reduced	1982	1982
-percent prevention	17%	24%	17%	17%	17%	17%
-percent suppression	83%	76%	83%	83%	83%	83%
Suppression strategies applied	all	control only	all	all	all	all
Average annual developed recreation use (M RVDs - 5th decade)	2900	1940	2901	2903	1944	2675
Average annual dispersed recreation use (M RVDs - 5th decade including wilderness)	3225	2290	3217	3279	2601	3101
Average annual acres burned by wildfire (5th decade)	1224	1069	1224	1410	972	1080

PRF: (Preferred) This alternative staffs the fire organization in accordance with the Forest Work Force Plan. Suppression will receive increased emphasis relative to prevention. The suppression strategies of confinement, containment, and control will be applied when and where appropriate. Summer recreation use will increase approximately 80 percent over five decades, accounting for most of the 64 percent increase in acres burned.

CUR: (Current Program) This alternative will select the 1982 fire organization, with a 24 percent to 76 percent relative emphasis on prevention

and suppression. Control will be the only suppression strategy applied. Summer recreation use will increase 16 percent over five decades, accounting for most of the increase in wildfire acres burned. Fire organization and suppression strategies will also be contributing factors. The potential of the Forest to protect the resources of neighboring communities from fires originating on Forest land will be the same as in 1982.

RPA: (1980 RPA Program) This alternative will select the 1982 fire organization in response to community protection needs. The emphasis on suppression will increase relative to prevention. The suppression strategies of confinement, containment, and control will be applied when and where appropriate. Recreation use will increase approximately 80 percent over five decades, accounting for most of the 64 percent increase in wildfire acres burned.

CEE: (Maximize Cost-Efficiency) This alternative will select a fire organization reduced from base year in response to the theme of maximizing cost efficiency. There will be an increased emphasis on suppression relative to prevention. The suppression strategies of confinement, containment, and control will be applied when and where appropriate. The 89 percent increase in wildfire acres burned over base year is associated both with increased recreation use and a reduced fire organization. The protection of neighboring communities from wildfires originating on Forest land will be least effective under this alternative.

AMN: (Maximize All Amenities) This alternative will select the 1982 fire organization in response to community protection needs. Suppression will receive increased emphasis relative to prevention. The suppression strategies of confinement, containment, and control will be applied when and where appropriate. As summer recreation use will increase only 33 percent over five decades, increases in acres burned will be offset somewhat by reductions arising from the application of all appropriate suppression strategies. The net effect will be a 30 percent increase in acres burned relative to 1982.

AMB: (Emphasize Wildlife and Recreation) This alternative will select the 1982 fire organization in response to community protection needs. Suppression will receive increased emphasis relative to prevention. The suppression strategies of confinement, containment, and control will be applied when and where appropriate. Summer recreation use will increase approximately 50 percent over five decades, accounting for most of the 45 percent increase in acres burned.

RANGE

Introduction

Forest activities that have major effects on the range resource include range management, timber management, geothermal development, wildlife management, watershed management, and fire management.

Consequences of these activities are assessed in terms of changes in grazing outputs, acres available for range management, rangeland condition and trend, and effects on range permittees. Data sources for this analysis include range management principles, professional literature, and the Forest data base.

Indicators

1. Range vegetation treatment
2. Wildfire
3. Suitable rangelands on which grazing is reduced, limited, or eliminated due to another primary resource emphasis:
   - Timber management
   - Mule deer winter range
   - Geothermal development
4. Suitable rangelands on which forage production declines due to physical or biological processes:
   - Wet meadows susceptible to accelerated erosion
   - Brush susceptible to decadence
5. Suitable rangelands outside allotments on which grazing is introduced
6. Percent utilization of forage by livestock
7. mountain sheep reintroductions
8. Grazing outputs.

Range vegetation treatments increase overall forage production by type conversion (from less palatable and nutritious types to more palatable and nutritious types) or rejuvenation (stimulating vigorous young growth in place of decadent stands). Vegetation treatments will typically use prescribed burning or mechanical methods.

Wildfire increases forage production on suitable range by rejuvenating shrubby vegetation. The effect is enhanced if the burn is seeded with palatable species.

When suitable rangelands are not managed with a primary emphasis on grazing, the amount of grazing on those lands may be reduced or lost entirely by the fifth decade. For example, rangelands managed primarily for timber production undergo vegetation changes. On the Inyo, the understory of a managed forest is less abundant and represents less desirable forage species than the understory of an unmanaged forest. Consequently, if timber lands that are currently managed primarily for grazing were brought into intensive timber management, grazing outputs will gradually decline to the point of being economically infeasible.

Mule deer and domestic livestock may compete or conflict on deer winter range. If deer winter range is managed with a primary emphasis on deer,

cattle grazing under some alternatives is held to current levels; in other alternatives, livestock are removed entirely from winter range to benefit deer.

Where geothermal plants are built on rangelands, grazing declines in proportion to the amount of land occupied by facilities such as buildings, wellsites, roads, fuelbreaks, pipelines, and equipment staging areas.

Forage production also declines due to physical and biological processes. Wet meadows are the most productive range types on the Forest; however, most of those meadows are damaged or threatened by accelerated erosion. The Forest Watershed Improvement Needs (WIN) plan has identified meadows in need of restoration or protection. The wet meadow acreage subject to erosion at the end of the fifth decade is inversely proportional to the watershed improvement work accomplished in the same time period.

Brush is the other main forage type for livestock on the Forest. Many brush stands are mature and approaching decadence, resulting in a loss of forage production. Decadence can be offset by vegetation treatment for rejuvenation purposes (discussed above). The brush acreage susceptible to decadence at the end of the fifth decade is inversely proportional to the rejuvenation acreage accomplished in the same time period.

Those suitable rangelands that are not in current grazing allotments can be brought into livestock management for an increase in AUMs.

Grazing outputs are proportional to the percent utilization of forage by livestock (e.g., 60 percent utilization represents a one-fifth increase in forage over 50 percent utilization).

Grazing outputs are primarily a function of acres available and range condition.

Assumptions

Virtually all of the suitable range on the Forest (388,848 acres of public land and 10,448 acres of waived private land) is currently contained in range allotments and managed for livestock grazing. The remaining 6,600 acres of suitable range are not grazed due to the difficulty of distributing livestock to small, scattered units; inability to control drift; difficult access; and lack of water.

Potential competition between domestic livestock, recreation pack and saddle stock, and wildlife are addressed by controlling seasons of use, livestock distribution, and utilization standards that provide at least the minimum of reserve forage even under maximum livestock-management scenarios.

Consequences Common to All Alternatives

The amount of grazing in existing wilderness will continue at current levels under all alternatives. Although opportunities to increase grazing are lost in Further Planning Areas recommended for wilderness, those opportunities are not great enough to make noticeable differences in the overall grazing program by alternative.

Although watershed improvement will actually increase forage production in damaged meadows as well as preventing further deterioration, the majority of wet meadows treated are in wilderness. As grazing in wilderness is limited to current levels, outputs will not increase with increased forage; they will, however, drop with continuing loss of forage. The opportunity to increase grazing in wet meadows outside of wilderness is not great enough to noticeably affect Forest-wide outputs differently by alternative.

The effects of geothermal development on livestock grazing will be the same for all alternatives. Three-thousand eight-hundred acres will be removed from the suitable range base for this purpose.

Consequences that Vary by Alternative

Table 81 displays the effects of the alternatives on domestic livestock grazing. Most of the grazing outputs in this table represent 50-year averages; only total outputs are also displayed in terms of the projected fifth decade average taken by itself.

Table 81
Indicators of Effects on Livestock Grazing
(by the End of the Fifth Decade)

Indicators	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
Base year 1982 outputs (M AUMs)	41.4	41.4	41.4	41.4	41.4	41.4
Range vegetation treatment						
-Total (M acres)	42.9	27.4	76.6	62.4	34.8	41.5
-Effect on outputs (M AUMs)	+7.3	+4.4	+12.5	+10.3	+5.9	+7.1
Suitable rangelands burned by wildfire						
-Total (M acres)	9.1	10.6	9.1	12.9	8.3	8.8
-Effect on outputs (M AUMs)	+1.1	+1.3	+1.1	+1.6	+1.0	+1.1
Rangelands managed for timber production						
-Total (M acres)	21.9	21.4	43.0	10.0	6.2	0
-Effect on outputs (M AUMs)	-1.3	-1.3	-2.7	-0.6	-0.4	0
Rangelands occupied by geothermal energy plants						
-Total (M acres)	3.8	3.8	3.8	3.8	3.8	3.8
-Effect on outputs (M AUMs)	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
Management of mule deer winter range (cattle vs. deer)						
-Total (M acres)	0	0	96.4	0	96.4	96.4
-Effects on outputs (M AUMs)	0	0	+1.9	0	-9.6	-9.6
Wet meadows subject to accelerated erosion						
-Total (M acres)	6.4	21.5	13.6	0	0	0
-Effect on outputs (M AUMs)	-1.1	-3.6	-2.3	0	0	0
Brush in allotments subject to maturation						
-Total (M acres)	78.6	71.6	71.6	75.3	79.0	67.7
-Effect on outputs (M AUMs)	-1.6	-1.4	-1.4	-1.5	-1.6	-1.4
Suitable rangelands added to allotments						
-Total (M acres)	0	0	6.6	6.6	6.6	6.6
-Effects on outputs (M AUMs)	0	0	+0.4	+0.4	+0.4	+0.4
60 percent utilization applied						
-Total (M acres)	0	0	257.0	0	0	0
-Effects on outputs (M AUMs)	0	0	+5.1	0	0	0
Mountain sheep reintroductions						
-Effects on outputs (M AUMs)	-0.6	-0.6	0	0	-0.6	-0.6
Net Change from 1982 (M AUMs)	0	-1.6	+14.8	+10.5	-4.7	-3.4
Total outputs						
(M AUMs: 50-year average)	41.4	39.8	55.6	51.2	36.1	38.0
(M AUMs: fifth decade)	41.4	39.1	55.6	46.5	35.1	39.4

PRF: (Preferred) Grazing outputs will remain at current levels. There will be some loss of grazing potential because of timber management, geothermal development, increasing decadence of range vegetation, a loss of wet meadows due to accelerated erosion, and the reintroduction of mountain sheep.

The overall condition and trend of rangelands will improve on the 52,000 acres of treated or burned brush and the 23,500 acres of treated wet meadow. Condition and trend will remain static or decline elsewhere due to increasing decadence or accelerated erosion.

As many as nine existing permittees could be affected by reduced grazing capacity on allotments associated with timber and geothermal development. Although some of the affected permittees could be moved to areas of increased forage, others could be put out of business by the change. The overall increase in forage will allow some existing permittees to be relocated and others to expand.

CUR: (Current Program) Grazing outputs will drop 6 percent below the 1982 base year level, over 50 years. Reductions in outputs will be due to timber management, geothermal development, wet meadow erosion, brush decadence, and mountain sheep reintroduction. Overall losses will be offset to some degree, primarily by minor gains from vegetation treatment and wildfire. Opportunities to implement an extensive vegetation treatment program and to fully implement the watershed improvement plan for wet meadows will be limited by the budget restrictions of this alternative.

Range condition and trend will decline as efforts to reduce livestock use in response to reductions in capacity will fall behind range condition analysis. As many as ten existing permittees could be affected by reduced grazing capacity on allotments associated with timber, geothermal and wet meadow erosion. As few, if any, of the affected permittees could be relocated, most will be put out of business by the change. The overall drop in range capacity will result in fewer permittees; any expansion of existing operations could result only where other operations went out of business.

RPA: (1980 RPA Program) Grazing outputs will increase 34 percent over the 1982 base year level by the end of the fifth decade. The President's target of a 46 percent increase over the specified base level of 38,500 AUMs will be met, and the 1980 RPA target of 44,500 AUMs will be exceeded.

Increases in grazing will result primarily from vegetation treatment, including rejuvenation of bitterbrush and widespread conversion of big sagebrush, pinyon pine, and noncommercial Jeffrey pine to desirable forage types; the application of a 60 percent utilization standard in place of 50 percent utilization; and a reduction of deer habitat capability on key winter range. Smaller gains will come from other sources. Overall increases will be offset by the loss of grazing to timber management, geothermal development, wet meadow erosion, and range decadence.

The overall condition and trend of rangelands will improve on the 85,700 acres of treated or burned brush and the 9,900 acres of treated wet meadow.

Condition and trend will remain static or decline elsewhere due to increasing decadence or accelerated erosion.

As many as ten existing permittees could be affected by reduced grazing capacity on allotments associated with timber, geothermal development, and wet meadow erosion. Although some of the affected permittees could be moved to areas of increased forage, others could be put out of business by the change. The overall increase in forage will allow some displaced permittees to be relocated, others to expand, and perhaps some new permittees to be added.

CEE: (Maximize Cost-Efficiency) Grazing outputs will increase 12 percent above the 1982 base year over 50 years. Most of that increase will result from vegetation treatment in bitterbrush and big sagebrush. Additional gains will come from other sources. Overall increases will be offset by losses of grazing due to timber management, geothermal development, and range decadence.

The overall condition and trend of rangelands will improve on the 75,300 acres of treated or burned brush and the 23,500 acres of treated wet meadow. Condition and trend will remain static or decline elsewhere due to increasing decadence or accelerated erosion.

As many as seven existing permittees could be affected by reduced grazing capacity on allotments associated with timber and geothermal development. Although some of the affected permittees could be moved to areas of increased forage, others could be put out of business by the change. The overall increase in forage will allow some existing permittees to be relocated, others to expand, and perhaps new permittees to be added.

AMN: (Emphasize All Amenities) Grazing outputs will decline 15 percent from the 1982 base year level over fifty years. Most of that loss will result from removing cattle from mule deer winter range; the remainder will be lost to timber and geothermal management, range decadence, and mountain sheep reintroduction. Overall losses will be offset somewhat due gains from range vegetation treatment and other sources.

The overall condition and trend of rangelands will improve on the 43,100 acres of treated or burned brush and the 23,500 acres of treated wet meadow. Condition and trend will remain static or decline elsewhere due to increasing decadence or accelerated erosion.

As many as fourteen existing permittees could be affected by reduced grazing capacity. Few, if any, displaced permittees could be relocated, as forage improvements will be scattered and absorbed by permittees on affected allotments; consequently, most of the displaced permittees will go out of business.

AMB: (Emphasize Wildlife and Recreation) Grazing outputs will drop five percent below the 1982 base year level over fifty years. Most of that loss will result from removing cattle from deer winter range. The remaining

losses will be associated with geothermal development, range decadence, and mountain sheep reintroduction. Overall losses will be offset somewhat by vegetation treatment, wildfire, the maintenance of current grazing levels in suitable timber, and other minor sources.

The overall condition and trend of rangelands will improve on the 50,300 acres of treated or burned brush and the 23,500 acres of treated wet meadow. Condition and trend will remain static or decline elsewhere due to increasing decadence or accelerated erosion.

As many as seven existing permittees could be affected by reduced grazing capacity on allotments associated with deer winter range and geothermal development. Few, if any, displaced permittees could be relocated, as forage improvements will be scattered and absorbed by permittees on affected allotments; consequently, most of the displaced permittees will go out of business.

RECREATION

Introduction

Forest activities that have major effects on the recreation resource include recreation management, energy development, timber management, and wilderness management.

Consequences of these activities are assessed in terms of changes in the capacity for developed and dispersed recreation, changes in the amount of various types of recreation use, and changes in the number of acres available for different types of recreation. Data sources for this analysis include the Recreation Information Management (RIM) system, the recreation demand analysis for Forest planning, Forest inventories of potential recreation sites, preliminary studies of potential ski areas, and the Forest data base.

Recreation has been divided into four categories to facilitate the discussion of consequences: developed recreation, alpine skiing, dispersed recreation, and the Recreation Opportunity Spectrum.

Indicators

1. Developed Recreation
   - Developed recreation site capacity
   - Developed recreation use.

2. Alpine Skiing
   - Acres available for ski area development
   - Developed ski area capacity
   - Skiing use.

3. Dispersed Recreation
   - Acres available
   - Dispersed recreation use
   - Acres and miles of roads and trails available only for OHV use.

4. Recreation Opportunity Spectrum (ROS)
   - Forest-wide distribution of ROS classes
   - Change in ROS class distribution.

Developed recreation site capacity is measured by the Persons-At-One-Time (PAOT), the number of people a facility is designed to serve. Recreation use is measured in recreation visitor days (RVDs) estimated use. Discussions of developed recreation do not include alpine skiing, as skiing is addressed separately. Developed alpine ski area capacity is measured as Skiers-At-One-Time (SAOT); skiing use is measured in Recreation Visitor Days (RVDs). Acres available represent the total acres of existing and potential alpine ski areas, including at least the full development of Mammoth Mountain and June Mountain and at most the Sherwin Bowl, Mammoth Knolls, Minaret Summit, San Joaquin, and White Wing potential ski areas.

Dispersed recreation areas are expressed in terms of the acres available in each Recreational Opportunity Spectrum (ROS) class. Definitions for the ROS classes are found in Chapter VIII, Glossary. Recreation use is measured in (RVDs). Miles of OHV roads and trails are not displayed because the Plan requires that a new updated Motor Vehicle Use Plan be prepared.

The type of developed and dispersed recreation opportunities vary depending upon the Recreation Opportunity Spectrum (ROS) class of the lands on which they are found. The seven ROS classes are Urban (U), Rural (R), Roaded Modified (RM), Roaded Natural (RN), Semi-Primitive Motorized (SPM), Semi-Primitive Non-Motorized (SPNM), and Primitive (P). The consequences of alternatives were measured by the percent distribution of Forest lands by ROS class.

The projected changes in ROS Class acreage over time applied the following assumptions:

1. New alpine ski area development will represent an increase in the Rural ROS class.

2. New recreation developments and new concentrated recreation areas will represent an increase in the Roaded Natural, Roaded Modified, or Rural ROS classes.

3. New road access for timber management or mineral development will represent an increase in the Roaded Natural ROS class.

4. Acres of recommended wilderness or motor vehicle closure will represent an increase in the Primitive or Semi-Primitive Non-Motorized ROS classes.

The following tables display the consequences of alternatives on Forest recreation opportunities.

Table 82
Indicators of Consequences on Developed Recreation
(Public and Private) (Does not include alpine skiing)

	Alternatives					
Indicators	PRF	CUR	RPA	CEE	AMN	AMB
Developed site capacity (M PAOT)						
Base Year 1982	25.5	25.5	25.5	25.5	25.5	25.5
Decade 1	25.5	25.5	25.5	25.5	25.5	25.5
Decade 2	30.7	25.5	30.9	30.1	25.1	30.8
Decade 3	36.5	25.5	36.5	36.5	26.1	36.2
Decade 4	39.5	25.5	39.6	39.5	26.1	36.2
Decade 5	39.5	25.5	39.6	39.5	26.1	36.2
Developed recreation site use (M RVDs)						
Base Year 1982	1849	1849	1849	1849	1849	1849
Decade 1	2229	1944	2325	2423	1944	2099
Decade 2	2517	1944	2708	2903	1944	2099
Decade 3	2708	1944	2900	2903	1944	2386
Decade 4	2900	1940	2900	2903	1944	2483
Decade 5	2900	1940	2901	2903	1944	2675

Table 83
Forest Lands Available for Dispersed Recreation
by ROS Class (by the end of the fifth decade) (M acres)

		Alternatives					
ROS Class	1982	PRF	CUR	RPA	CEE	AMN	AMB
Primitive	870.6	867.1	867.1	836.2	865.7	869.8	867.8
Semi-Primitive Non-Motorized	392.6	404.9	402.7	380.6	418.9	490.4	442.2
Semi-Primitive Motorized	189.2	215.4	238.1	230.7	183.8	152.7	195.9
Roaded Natural	383.6	335.6	319.1	381.0	343.1	325.7	308.5
Roaded Modified	35.1	47.0	43.3	39.8	48.1	36.6	51.5
Rural	11.6	13.1	13.0	14.3	22.0	10.2	16.5
Urban	2.0	1.6	1.4	2.1	3.1	1.3	2.3

Table 84
Changes in ROS Class Distribution
by the end of the fifth decade (M acres)

		Alternatives					
ROS Classes	1982*	PRF	CUR	RPA	CEE	AMN	AMB
Primitive (P)	870.6	-3.5**	-3.5	-34.4	-4.9	-0.8	-2.8
Semi-Primitive Non-Motorized (SPNM)	392.6	+12.3	+10.1	-12.0	+26.3	+95.8	+49.6
Semi-Primitive Motorized (SPM)	189.2	+26.2	+48.9	+41.5	-5.4	-36.5	+6.7
Roaded Natural (RN)	383.6	-48.0	-64.5	-2.6	-40.5	-57.9	-75.1
Roaded Modified (RM)	35.1	+11.9	+8.2	+4.7	+13.0	+1.5	+16.4
Rural (R)	11.6	+1.5	+1.4	+2.7	+10.4	-1.4	+4.9
Urban (U)	2.0	-0.4	-0.6	+0.1	+1.1	-0.7	+0.3

* 1982 acreage is adjusted to reflect the California Wilderness Act of 1984
** Acreage changes are relative to 1982

Consequences Common to All Alternatives

Developed Recreation: The quality of the recreational experience and the opportunities provided by developed facilities are, in part, related to specific attractions and desirable site characteristics. Under all alternatives, the quality of the experience and the number and variety of recreational opportunities are greatest in existing concentrated recreation areas where streams, lakes, spectacular scenery, and screening vegetation are most abundant. Although attractions and opportunities in the Owens River potential concentrated recreation area are similar to existing areas, the Buttermilk and Parker Lake-Sawmill Canyon areas rate lower on those factors.

Outside of concentrated recreation areas, attraction and recreation opportunity levels range from moderate in areas with screening vegetation to low in areas of open brush. There are few, if any, water-related attractions. Although many potential developed sites with limited attractions and poor site characteristics could be added to the inventory, use levels in such sites will be extremely low. The BLM operates many campgrounds on such sites. Those campgrounds are virtually vacant most of the year. By the third to fifth decades, as recreational equipment, technology, and user interests change, these uninventoried potential sites could become more desireable. If so, they should be added to the inventory at that time.

It is expected that increasing numbers of recreationists will recreate outside of peak use seasons due to the development of motorhomes and campers designed for year-round use. As seasons of use lengthen, the demand for

year-round operation of many overnight facilities will increase. Extended seasons could provide for considerable additional use without greatly expanded site capacity. This opportunity will be available for all alternatives under which facilities and services are provided at standard. Below-standard operation will entail the shortening of use seasons.

Developed sites neighboring the Mammoth Lakes and June Lake communities will become more valuable for day use and open space as ski areas develop, communities increase in size, and summer community occupancy rates increase. Recreation outputs and opportunities related to overnight facilities will decline in proportion to increased day use.

Geothermal development in Lease Blocks I and II will not directly affect any existing recreation sites. However, the attractiveness and use levels of sites near geothermal developments will be expected to drop due to the presence of large industrial facilities in the area.

New hydroelectric developments will also affect developed recreation opportunites and use, even though none of the existing proposals will actually eliminate recreation sites. The recreation loss associated with hydroelectric development could be even greater than that associated with geothermal, due to the popularity of water-oriented recreational facilities. Hydroelectric projects reduce stream flows, affecting fisheries, scenic values, water play, and other riparian area-related recreational values. The likelihood of new hydroelectric development is common to all alternatives.

Alpine Skiing: In all alternatives the approved development plans for Mammoth Mountain and June Mountain will be implemented. These plans call for Mammoth Mountain to be developed to a capacity of 24,000 SAOT and June Mountain to a capacity of 7,000 SAOT. Any additional developed beyond these levels will require a cumulative impacts study that will be outside the purview of this Plan.

Dispersed Recreation: In all alternatives, the ability of the Inyo National Forest to meet the demand for dispersed recreation is closely linked to meeting the demand for developed recreation. The amount of Forest-wide dispersed recreation use is roughly proportional to the amount of developed overnight capacity on both public and private lands in the area. Only wilderness use and hunting are mostly independent of developed overnight facilities, as wilderness users and hunters typically camp in dispersed areas.

The general types of dispersed activities and opportunities will not change between alternatives. All alternatives will offer a full range of activities in balanced proportions with no one type of activity dominating the others. Although some activities may increase considerably, they will not exclude or substantially reduce opportunities for other activities.

Most of the changes that will occur under a given alternative will affect only small acreages representing a fraction of the total Forest land base. For example, a five-fold increase in nordic skiing over current levels on 10,000 acres will not affect the activities taking place on the other 99.5 percent of the Forest. In addition, as only 30,000 acres of suitable timber lie in currently unroaded areas, less than 2 percent of the Forest will be

affected by improved access for timber management, even under alternatives that maximized timber production. Major changes in acreage in the different ROS classes, and thus in dispersed activities and opportunities Forest-wide, are not likely to change substantially over the next 50 years.

Driving for pleasure will be expected to increase a minimum of 400,000 to 500,000 RVDs under all alternatives in response to community growth and the widening of U.S. 395, facilitating travel between the Los Angeles metropolitan area and the Forest.

The combination of recreational activities and opportunities in concentrated recreation areas will remain the same under all alternatives. Water-oriented activities will continue to be central for most summer recreationists.

Nordic skiing opportunities will be expected to increase a minimum of 140,000 RVDs under all alternatives as the demand for that activity expands. Additional increases in demand will be associated with increased alpine ski area capacity, due to the nordic skiing associated with the attraction of more alpine skiers to the Forest.

Opportunities for wilderness recreation on the Forest will not come close to meeting demand under any alternative, as the management of wilderness within capacity limits places a ceiling on use that is unrelated to demand, and as new wilderness areas will not have the attractions or the capacity to contribute substantially to recreation opportunities. The amount of recreation use varies very little by alternative, even though the acreage proposed for wilderness varies widely.

Geothermal development will eliminate dispersed recreation use on the acres actually occupied by facilities under any alternative. In addition, a far greater area could be impacted, depending on the location of developments, the road system designed, the configuration of pipelines and powerlines, and the security measures deemed necessary by industry. The effects of geothermal development in Lease Blocks I and II north and east of Mammoth will be the same for all alternatives.

New hydroelectric development could also affect dispersed recreation under any alternative. The effects could be even greater than the effects of geothermal development, as hydroelectric plants will conflict with popular water-oriented recreation. Sections of stream affected by hydroelectric projects will no longer be considered concentrated recreation areas, due to the reduced density of use levels that will result. The likelihood of such development is considered common to all alternatives.

Recreation Opportunity Spectrum (ROS): The demand for recreation opportunities in the primitive (primarily wilderness) ROS class will not be met under any alternative. The supply available is limited by established wilderness capacity limits and the limited potential of Further Planning Areas on the Forest to provide for additional use. The management of wilderness within capacity limits helps to ensure a high quality experience for the user and reduces the overcrowding that often leads to resource degradation. Such management also, however, limits the amount of use and the ability of the Forest to meet wilderness recreation demand.

The Forest will not meet the demand for recreation in the Rural ROS class (primarily alpine skiing) under any alternative due to the management of alpine ski areas within established capacity limits to ensure a quality experience for the skier.

The supply of Semi-Primitive Motorized and Roaded Natural opportunities will exceed demand under all alternatives. The demand for activities in these ROS classes is limited by the availability of overnight lodging, both public and private, to provide a population base for dispersed activities.

Sixty-six percent of the Inyo is already classified as Primitive or Semi-Primitive Non-Motorized; another 11 percent is classified Semi-Primitive Motorized. There will be little change in these ROS classes Forest-wide over 50 years, even under alternatives with little or no wilderness.

The distribution of lands in the various ROS classes will generally shift in the direction of more development under most alternatives. ROS shifts toward to less development will be more difficult to achieve. It is unlikely, for example, that a given area will change from Rural to Roaded Natural, or Roaded Natural to Semi-Primitive Motorized within five decades without specific administrative controls. On the other hand, Semi-Primitive Motorized acres will shift to the Semi-Primitive Non-Motorized ROS class as a result of wilderness designation or motor vehicle closure.

Consequences That Vary by Alternative

PRF: (Preferred)

Developed Recreation: This alternative will provide a wide range of high-quality developed recreation activities and opportunities. The user could expect well-maintained facilities in both rehabilitated and newly constructed sites. The density of use in concentrated recreation areas will increase. Developed site operating seasons will be longer, and a greater variety of sites will be available. The projected demand for developed recreation will be met during the first through third decades. 81 percent of demand will be met by the fifth decade, with approximately 2.9 million developed site RVDs. Approximately 90 percent of inventoried potential sites will have been developed.

The opportunities provided will shift from the current campground-dominated situation to a more balanced one with additional day use facilities, especially interpretive sites. Most new developments will still occur in the public sector. However, privately developed recreational vehicle park opportunities and nordic ski resort opportunities will increase on the Forest. All existing sites will be brought to standard service levels in the first two decades. Sixty-six percent of new facilities will be located in existing concentrated recreation areas, 16 percent will be built in newly created concentrated recreation areas, and 18 percent will be built elsewhere on the Forest.

Developed recreation in existing concentrated recreation areas will not be affected by other resource activities, except that recreation developments will have to meet standards for water quality and riparian area protection. In the proposed concentrated recreation areas for the Owens River and the

Walker Lake-Sawmill Canyon areas, existing grazing allotment direction will determine the amount, location, and design of recreational facilities. Recreation sites located in key deer habitat will be subject to seasonal closures.

Dispersed Recreation: The quality of dispersed recreation activities and opportunities will increase due to a full complement of well-maintained facilities which will disperse use, lessen concentrations of people, and reduce adverse impacts on sensitive riparian areas. Users will find moderate levels of control and enforcement to reduce conflicts between activities. OHV users will find less freedom of movement because of greater restrictions on travel, especially on lands adjacent to communities. Fishing opportunities will increase slightly, while hunting opportunities will decline slightly under this alternative.

The projected demand for dispersed recreation will be met in the first through the third decades, while only 76 percent of demand will be met in the fifth decade with 2.4 million dispersed non-wilderness RVDs.

An 81 percent increase in dispersed RVDs in concentrated recreation areas will be facilitated by the addition of 180 miles of trail, which will encourage a broader range of activities and opportunities.

Dispersed use on open-roaded lands will increase 182 percent over 50 years. Vehicle-based opportunities will increase where new timber access roads entered the lands east of San Joaquin Ridge. Dispersed recreation use in unroaded areas will increase slightly due to local community growth.

OHV opportunities will be defined in the update of the 1977 Interagency Motor Vehicle Use Plan. OHV opportunities on the Forest are managed under this plan, developed by the Bureau of Land Management, Department of Water and Power of the City of Los Angeles and the Forest. There will be extensive public participation in the update of this Plan, which will display opportunities for both OHV and OSV use.

All dispersed recreation areas will be managed at standard levels of operation. Trails and trailheads will be maintained to levels identified in trail maintenance plans.

Recreation Opportunity Spectrum: Demand will be met and exceeded in the SPM and RN classes, and will nearly be met in the SPNM and RM classes throughout the next fifty years. Opportunities in the Primitive and Rural ROS classes, on the other hand, will fall far short of meeting demand. Wilderness in the Primitive class and alpine skiing in the Rural class will both be highly regulated under this alternative to ensure a quality recreational experience. The development of additional trails for hiking outside wilderness on SPNM lands and nordic skiing on RN lands will provide additional opportunities to offset use limitations elsewhere.

ROS class acreage will increase mainly in the SPNM and SPM portion of the spectrum because of additional wilderness and areas managed with an emphasis on primitive recreation opportunities. An increase in concentrated recreation areas and some additional ski area development will represent substantial increases in roaded modified and Rural ROS classes with

corresponding reductions in Roaded Natural acreage. The total acres shifting between ROS classes will represent 5.5 percent of the Forest.

CUR: (Current Program)

Developed Recreation: This alternative will emphasize overnight camping. Day use facilities such as interpretive sites, trails, parking, and information signs will be minimal. User densities will remain at current levels, but user dissatisfaction will increase as sites deteriorated. Use of many facilities will be restricted to peak seasons only.

Developed recreation outputs will be maintained near current levels throughout the planning horizon. In the fifth decade, only 54 percent of estimated demand will be met with 1.9 million developed site RVDs. Approximately 59 percent of the total potential supply will have been developed, with no new construction over the planning horizon.

Management of Forest Service campgrounds will continue at low-standard levels for most sites. Facilities will deteriorate to the point that maintenance could not provide needed repairs. The quality of services, facilities, and site condition will decline to unsatisfactory levels. Use will be expected to drop below existing levels in the more poorly maintained sites. A minimal rehabilitation program will keep facilities open while preventing excessive resource damage.

Most resorts and commercial uses will remain, with a slight increase in private RV facilities offsetting the declining use of public sites to some degree.

The management of existing developed sites will not be affected by other resource management objectives except for the need to meet water quality, riparian area, and visual quality standards.

Dispersed Recreation: The quality of dispersed recreation activities will decline. Lack of controls and facilities will lead to overcrowding, conflicts between activity groups, deterioration of sensitive riparian zones, and user inconvenience. Hunting and fishing opportunities will decline with deteriorating habitat capability for game species.

Dispersed RVD outputs will increase slightly in this alternative, meeting demand through the first decade. This increase will result from increased nordic skiing and driving for pleasure, though even those opportunities will be provided at low-standard levels. By the fifth decade, only 49 percent of projected demand will be met, with approximately 1.6 million non-wilderness dispersed RVDs.

By the fifth decade, dispersed recreation use in concentrated recreation areas will drop approximately 20 percent due to the deterioration of developed sites. No new non-wilderness trails will be built under this alternative.

Dispersed recreation use in roaded areas of the Forest will increase about 65 percent due to the upgrading of U.S. 395 and the building of new timber roads into the now-unroaded Monache and San Joaquin areas.

The opportunities available to OHV users will basically remain unchanged, except that 107,600 additional acres in new wilderness will add some closed areas both summer and winter. Timber management in Monache will reduce the opportunity for OHV recreation in that area. Illegal OHV use will probably increase over time with a lack of effective law enforcement. Physical and visual disturbances, conflicts with other users, and general polarization of feelings and loss of enjoyment by other user groups will result, especially on lands adjacent to local communities.

Nordic skiing will increase 115 percent by the fifth decade. Approximately 325 miles of marked trail and tracks will provide for 366,000 RVDs. All nordic ski trails and facilities will be developed privately under special use permit. Most will be located in the Mammoth area.

Recreation Opportunity Spectrum: Demand will be met and exceeded in the SPM and RN classes, but opportunities in neither the SPNM or RM classes will meet demand. Some overcrowding will be experienced during peak use periods in the RM class. Both Primitive and Rural class opportunities will fall far short of meeting demand due to capacity limitations placed on wilderness use and alpine skiing. However, as wilderness quotas will not be enforced with reduced services, the quality of the Primitive recreation experience will decline. There will be no additional trails built in other ROS classes to offset crowding in the Primitive class.

ROS class acreage in SPNM, SPM, and RM will increase. The largest increase in SPM will result from the large number of acres in the White, Inyo, and Excelsior Mountains that will be open to primitive roading or motorized trail developments. The slight increase in RM acres will not result in increased use, as there will be no new recreation developments. The Rural class will increase in response to ski area development. The total acres shifting between classes will represent 7.2 percent of the Forest.

RPA: (1980 RPA Program)

Developed Recreation: This alternative will provide a wide range of high-quality developed recreation activities and opportunities. The user could expect well-maintained facilities in both rehabilitated and newly constructed sites. The density of use in concentrated recreation areas will increase. Developed site operating seasons will be longer, and a greater variety of sites will be available. There will, however, be potential for reduced recreational quality in forested settings due to a heavy emphasis on timber production. Conflicts and user dissatisfaction will focus on the suitable timber lands between the Mammoth Lakes and June Lake Loop recreation areas.

The projected demand for developed recreation will be met during the first through third decades. 81 percent of demand will be met by the fifth decade, with approximately 2.9 million developed site RVDs. Approximately 90 percent of inventoried potential sites will have been developed.

The opportunities provided will shift from the current campground-dominated situation to a more balanced one with additional day-use facilities, especially interpretive sites. Most new developments will still occur in the public sector. However, privately developed RV parks and nordic ski resorts will increase on the Forest. All existing sites will be brought to standard service levels in the first two decades. Fifty percent of new facilities will be located in existing concentrated recreation areas, 11 percent will be built in newly created concentrated recreation areas, and 31 percent will be built elsewhere on the Forest. The overall quality of developed sites will be slightly lower than under the PRF alternative, as more of the new sites will be located away from water.

Although developed sites in the existing Deadman and Inyo Craters concentrated recreation areas will be maintained, there will be no expansion or development of potential sites in those areas due to the heavy emphasis on timber management. Opportunities for full development of the potential Owens River concentrated recreation area will also be foregone.

The expansion of alpine ski area development in the Mammoth area will result in a community more than twice the current size. Much more day use will be expected in developed sites during the summer, as the community continued to develop as a full four-season destination resort. Direction for existing grazing allotments in the proposed Buttermilk, Owens River, and Walker Lake-Sawmill Canyon concentrated recreation areas will determine the amount, location, and design of recreation facilities in those areas.

Dispersed Recreation: The quality of dispersed recreation activities and opportunities will increase due to a full complement of well-maintained facilities which will disperse use, lessen concentrations of people, and reduce adverse impacts on sensitive riparian areas. Users will find moderate levels of control and enforcement to reduce conflicts between activities. OHV users will find more freedom of movement due to a increase in open areas and in open roads and trails. Fishing and hunting opportunities will decline considerably under this alternative, due to impacts on game species by intensive commodity production.

The projected demand for dispersed recreation will be met in the first through the third decades, while only 76 percent of demand will be met in the fifth decade with 2.4 million dispersed non-wilderness RVDs.

An 81 percent increase in dispersed RVDs in concentrated recreation areas will be facilitated by the addition of 180 miles of trail, which will encourage a broader range of activities and opportunities. A timber management emphasis will eliminate the Deadman and Inyo Crater concentrated recreation areas, reducing RVDs in those areas.

Dispersed use in the roaded portions of the Forest will increase by 210 percent during the next 50 years, the highest of any alternative. Vehicle-based opportunities will increase where new timber access roads entered the lands east of San Joaquin Ridge and the Monache area. Dispersed use of unroaded lands will increase due to day use associated with local community growth.

Nordic skiing opportunities will be expected to expand, with a 200 percent increase in use by the fifth decade. Approximately 450 miles of marked trail and track will be in use, accommodating 382,000 RVDs.

Summer open-OHV areas will increase by 62,200 acres to include the north end of the Inyo mountains and part of the Excelsior range. The portions of the Jeffrey pine forest currently open will become restricted to protect plantations. The closed areas will remain the same as the current OHV plan. The expected growth in Mammoth Lakes and other local communities will trigger an increase in OHV activities. OHV use could become a major summertime recreational activity, requiring additional Motorized trails and activity areas. Winter open-OHV areas will be reduced by more than 40,000 acres to reduce conflicts with developed ski areas.

All aspects of dispersed recreation will be administered at standard levels of operation.

Recreation Opportunity Spectrum: Demand will be met or exceeded in the SPM and RN classes, but will not be met in any other ROS class, as capacity will be reached in all cases before the fifth decade. Primitive and SPNM opportunites in particular will be affected by the lack of additional wilderness and the low level of acreage retained for Non-Motorized forms of recreation. The greatest potential will be found for activities relating to the Roaded Natural ROS class, as use of lands in that class will not conflict with intensified timber management. Increased hiking trails in RN and SPM classes will help offset the limited capacity in Primitive and SPNM, but user conflicts could occur with greater frequency due to increased density of use.

Timber management will cause a reduction in RM ROS class acreage. Use on these acres will not be transferred to non-timbered RN acres, as most of the activities and uses in RN are day-use and dispersed rather than developed.

The greatest increase in acres will be found in the SPM class, with small additions in the RM and R classes. The addition of acres to Rural, though small, will represent large increases in RVDs, as alpine skiing will be the major activity represented on those lands. The greatest losses in acreage will be found in the Primitive and SPNM classes, as no new wilderness is added and because large unroaded areas in the White and Inyo Mountains and the Coyote plateau will be made available for increased vehicle-based opportunites. The major shift Forest-wide will be towards the Rural end of the spectrum. However, only 5.2% of the total Forest acres will change classes.

CEE: (Maximize Cost-Efficiency)

Developed Recreation: This alternative will provide a wide range of high-quality developed recreation activities and opportunities. The user could expect well-maintained facilities in both rehabilitated and newly constructed sites. The density of use in concentrated recreation areas will increase. Developed site operating seasons will be longer, and a greater variety of sites will be available. The Mammoth and June Lake areas will be much more crowded, and users will be subject to more controls and regulations to reduce conflicts between activity groups.

The projected demand for developed recreation will be met during the first through third decades. 81 percent of demand will be met by the fifth decade, with approximately 2.9 million developed site RVDs. Approximately 90 percent of inventoried potential sites will have been developed.

The opportunities provided will shift from the current campground-dominated situation to a more balanced one, with additional day-use facilities, especially interpretive sites. Most new developments will still occur in the public sector. However, privately developed RV parks and nordic ski resorts will increase on the Forest. The type of use in the Mammoth and Deadman areas will shift markedly toward day use and away from overnight use in response to the greatly increased summer population of Mammoth Lakes.

All existing sites will be brought to standard service levels in the first two decades. Seventy-one percent of new facilities will be located in existing concentrated recreation areas, 16 percent will be built in newly created concentrated recreation areas, and 13 percent will be built elsewhere on the Forest. The quality of the developed site experience will be high due to the attraction level and site conditions found in concentrated recreation areas.

In this alternative, developed recreation opportunities will be affected primarily by the substantial alpine ski area development in the Mammoth and upper Deadman Creek areas. The population of Mammoth Lakes will be expected to triple in support of a comparable increase in alpine skiing, and the private land base for community needs will also expand. Private development will most likely expand to the east and north into the Shady Rest area, eliminating the use of that concentrated recreation area. Most of the new recreation facilities in the Mammoth Lakes Basin and Reds Meadow area will serve day-use activities in response to an increased year-round resident population base. Overnight facilities will be reduced accordingly.

The developed site potential in the Deadman Creek area will be precluded by access routes and base facility developments associated with San Joaquin and White Wing ski areas.

<u>Dispersed Recreation:</u> The quality of dispersed recreation activities and opportunities will increase due to a full complement of well-maintained facilities which will disperse use, lessen concentrations of people, and reduce adverse impacts on sensitive riparian areas. Users will find moderate levels of control and enforcement to reduce conflicts between activities. OHV users will find more freedom of movement with new open areas in the Inyo Mountains, the base of the Sierra Escarpment south of Big Pine, and the Excelsior area. OHV use will be more regulated and controlled on lands adjacent to communities. Fishing opportunities will increase under this alternative, while hunting opportunities will decline.

The estimated demand for dispersed recreation will be met in the first through the third decades, but only 77 percent of demand will be met in the fifth decade with 2.4 million annual non-wilderness RVDs.

An 85 percent increase in dispersed RVDs in concentrated recreation areas will be facilitated by the addition of 180 miles of new trails and new concentrated recreation areas in the Owens River and Parker Lake-Sawmill

Canyon areas. It is possible, however, that most of the Shady Rest-Sherwin concentrated recreation area will have to be eliminated due to community growth.

Dispersed use in roaded portions of the Forest will increase 165 percent during the next fifty years. The San Joaquin and upper Deadman Creek-Dry Creek areas will become much more accessible due to intensive alpine ski area development. Timber harvest will stimulate the development of new roads into the San Joaquin and Monache areas. Dispersed recreation activities in Monache will shift toward the use of two-wheel drive vehicles with improved access. Use of the unroaded areas of the Forest will increase slightly with local community growth.

Nordic skiing use will be greatest under this alternative with a 300 percent increase by the fifth decade. Approximately 575 miles of trails and track will accommodate 500,000 RVDs of skiing use. Increased use will be supported by the greatly expanded ski resort community inherent in this alternative. Most expansion will take place in the Deadman and Dry Creek areas north of Mammoth.

OHV open areas will increase by 45,800 acres. Although portions of the Jeffrey pine forest now open will be restricted, new acreage in the Inyo Mountains, Sierra foothills, and northern Inyo Mountains will be open to use. Closed OHV areas will increase by 339,000 acres due to recommended wilderness areas. OHV use on the rest of the Forest will be restricted to roads and trails. Thirty-seven miles of OHV-only routes in the Monache area will be eliminated due to improved access required for timber harvest. Open areas for snowmobile use will decrease due to new wilderness and ski developments.

Recreation Opportunity Spectrum: Demand will be met or exceeded in SPM, RN, and RM ROS classes throughout the 50-year period. Opportunities in the Rural class will come closest to meeting demand under this alternative. Opportunities in the Primitive and SPNM classes will not meet demand. However, with the addition of trails of all types in SPM and RN classes, use could be shifted from SPNM to those classes. Opportunities in the Primitive class, as in all other alternatives, will be limited by capacity controls in wilderness.

Users will find both the RM and Rural ROS classes intensively developed. User contact will be high, and opportunities for solitude will be low. Extensive trail systems will facilitate the dispersal of people and activities. Activities in these classes will be highly regulated with visible controls, particularly as related to motorized activities.

Forest-wide acreage will shift mainly toward the Rural end of the spectrum. However, the SPNM class will also increase with wilderness recommendations for the Coyote Plateau area and most of the northern White Mountains. Even though there will be more acreage in established OHV open areas, the SPM ROS class will be reduced due to wilderness recommendations and alpine ski area development. Substantial shifts of Roaded Natural towards RM and R will also occur. The total acres shifting between classes will represent only 5.4 percent of the Forest.

AMN: (Maximize All Amenities)

Developed Recreation: This alternative will provide a wide range of high quality developed recreation activities and opportunities, but in limited quantities. The user will enjoy uncrowded conditions and well-maintained and totally rehabilitated facilities, including a full package of day-use and interpretive facilities. Although controls and enforcement will rarely be visible, conflicts between users will be low. Chances to find solitude, even for developed site users, will be the greatest under this alternative. However, many people will not be able to find a recreation site during the peak season and will have to vacation elsewhere or schedule their visit for a different time of year.

In this alternative, developed recreation will increase very slightly over current output levels over five decades. By the fifth decade, 60 percent of inventoried potential sites will have been developed and 53 percent of estimated demand will be met with approximately 1.9 million annual developed site RVDs.

The opportunities provided will be similiar in quantity to the existing situation, but a better balance will be achieved between overnight and day use due to increases in interpretive site development and other day-use facilities. The attraction level and site conditions of existing facilities will be improved under standard levels of operation for a higher quality recreational experience.

Developed recreation management will be limited by the emphasis on riparian, visual, and wildlife objectives. No new concentrated recreation areas will be developed under this alternative, in order to avoid impacts on wildlife and riparian values. These values include key deer winter range, key deer holding areas, the unroaded character of the San Joaquin area, and small riparian areas that currently receive little recreation use.

Dispersed Recreation : Because this alternative has a low level of developed site capacity, it will also have a low levels of dispersed use. However, with full development of dispersed trails, parking, and information facilities, the quality of the experience will be the greatest of any alternative on all areas of the Forest. Primitive forms of recreation will be at their highest levels, due to the vast acreage of additional wilderness and limited access management. Capacity controls on wilderness and the topography of recommended areas will not, however, provide for substantial increases in use. Solitude, challenge, and isolated camping situations will be emphasized. Users will find only limited evidence of on-the-ground controls. Fishing and hunting opportunities will be at their highest due to improved habitat conditions for fish and deer. OHV use will be the most severely restricted under this alternative, and controls and enforcement will be readily apparent. OHV enthusiasts will not come to this area, but will go elsewhere, particularly for major events.

The estimated demand for dispersed recreation will be met through the first decade and most of the second decade. By the fifth decade, however, only 54 percent of demand will be met with 1.7 million annual dispersed non-wilderness RVDs.

As the slight reduction of developed sites in concentrated recreation areas will be offset by increases in local community use, dispersed recreation in those areas will remain at current levels over the planning horizon. At least 80 miles of new trails will be constructed to better disperse use and protect resources.

Some development in roaded portions of the Forest, as well as improved highway access to the Eastern Sierra, will generate a 77 percent increase in dispersed use on roaded lands. Dispersed recreation use in unroaded areas will increase slightly.

Nordic skiing will increase 220 percent by the fifth decade. Approximately 425 miles of additional trails and track, most of that privately developed, will accommodate 405,000 annual RVDs.

Off-highway vehicle use will be de-emphasized in this alternative. Most existing and potential open areas will be recommended for wilderness or will be managed under limited access guidelines with an emphasis on wildlife, visual, riparian, or primitive recreation opportunities. This alternative will have the largest acreage closed to summer OHV use, and most of the rest of the Forest will be restricted; only 14,500 acres will be open. Winter open-OHV areas also will be reduced because of wilderness recommendations, conflicts with nordic skiers, and potential impacts on wildlife. OHV use of the Monache area will be retained to the degree compatible with deer habitat management in that area.

All forms of dispersed recreation will be managed at standard levels of operation.

Recreation Opportunity Spectrum: Demand will be met or exceeded in the SPNM, SPM, and RN ROS classes. As the Primitive class will be limited by capacity controls, projected demand could not be satisfied. Even the 510,800 acres of new wilderness will contribute little in the way of recreation opportunity, as these acres have limited capacity for use. The slight decline in Rural and increase in RM reflect the low level of new development key to this alternative.

The major shift of acres is from RN and SPM to SPNM due to wilderness recommendations. This shift represents the greatest change of acres under any alternative, but still involves only 10.3 percent of the Forest.

AMB: (Emphasize Wildlife and Recreation)

Developed Recreation: This alternative provides a wide range of activities and opportunities. The user will find well-maintained sites, available space during most seasons, and little resource damage due to overuse. Densities in concentrated recreation areas will have increased over base year.

The estimated demand for developed recreation will be met into the third decade. By the fifth decade, although 80 percent of inventoried sites will be developed, only 74 percent of estimated demand will be met with 2.7 million annual developed site RVDs.

The opportunities available will represent a quality balance of overnight and day-use facilities and activities provided by both the public and private sectors. RV parks and nordic ski resorts will increase. All sites will be brought to standard levels of service in the first two decades. Of the newly constructed facilities, 75 percent will be located in existing concentrated recreation areas and the other 25 percent will be in other roaded portions of the Forest. No new concentrated recreation areas will be created. The upper Deadman Creek potential concentrated recreation area will be reserved for future use, but will not be developed in the first 50 years. Full recreation development in concentrated recreation areas will not occur because of potential impacts on riparian area-dependent wildlife.

Dispersed Recreation: Moderate levels of dispersed recreation will be available in concentrated recreation areas and roaded portions of the Forest. The concentrated recreation areas could have periods of high-density use, with increased rates of contact between users. Well-defined trail, parking, and information systems will help to pull use away from developed sites and to increase convenience for the users.

Semi-primitive and primitive forms of recreation opportunities will be at high levels of use due to the large amount of acreage under the wilderness and limited access prescriptions. Even though most of the acres on the Forest will be available for primitive forms of recreation, however, the total amount of use in those categories will not increase greatly due to capacity controls on wilderness and limited physical capacity elsewhere.

Opportunities for solitude, challenge, and isolated camping situations will be emphasized, with little evidence of on-the-ground controls. OHV users will be severely restricted during the summer, with major reductions in open areas. Restrictions and enforcement will be highly visible. Organized motor vehicle events will be discouraged. Fishing and hunting opportunities will be enhanced by the emphasis on game species habitat management.

The estimated demand for dispersed recreation will be met in the first decade through the third decade, but only 70 percent of demand will be met in the fifth decade with 2.3 million annual non-wilderness dispersed RVDs.

By the fifth decade there will be a 51 percent increase in dispersed RVDs in concentrated recreation areas. Approximately 120 miles of trail will be built to help accommodate increased use and to broaden the range of activities and opportunities.

Dispersed recreation use in other roaded portions of the National Forest will increase 131 percent by the fifth decade. Dispersed recreation use in unroaded areas will increase slightly due to local community growth.

Nordic skiing will expand, resulting in a 180 percent increase by the fifth decade. Approximately 475 miles of trail and track will accommodate 360,000 RVDs of dispersed skiing, mostly in the Dry Creek-Deadman area.

OHV use will continue in all existing open areas except the southern White Mountains. As no new areas will be added, open acreage will be reduced 50,100 acres Forest-wide. The Monache area will still be oriented towards dispersed OHV recreation. Closed areas will increase by 222,700 acres

because of wilderness recommendations. Snowmobile use will be restricted due to wilderness recommendations, nordic and alpine ski areas, and potential impacts on wildlife.

All dispersed recreation will be managed to standard levels of operation.

Recreation Opportunity Spectrum: All ROS classes except Primitive and Rural will meet or exceed demand in the fifth decade. Primitive opportunities will be capped by quotas in wilderness, as in all other alternatives. Rural ROS class needs could be partly absorbed in the RM class where there is some excess of supply over demand. This will not be true for the alpine skier, however.

Primitive acres remain essentially the same. Other classes will have substantial increases generated by reductions in the Roaded Natural ROS class. The total shift in acres represents 8.3 percent of total Forest acres.

RESEARCH NATURAL AREAS

Introduction

There are no Forest activities that have direct effects on the seven Research Natural Areas (RNAs) on the Forest. Those RNAs are: Harvey Monroe Hall, Indiana Summit, Sentinel Meadow, McAfee Meadow, White Mountain, Whippoorwill Flat, and Last Chance Meadow.

Different alternatives could, however, have different indirect effects on RNAs. Since RNAs are managed with the objective of maintaining natural ecological processes, any activity that altered those processes will represent an impact.

Indirect effects will typically be generated by the Forest activities occurring on lands immediately surrounding an RNA. If activities on surrounding lands had the potential to affect natural ecological processes, and if there were a reasonable chance of those activities illegally or inadvertently occurring within the RNA, the risk of indirect effects will be present.

Indicators

The indirect effects of alternatives on RNAs are examined in terms of the following indicators of land uses immediately surrounding RNAs:

1. Domestic livestock grazing
2. Wilderness designation
3. Public fuelwood gathering
4. Mineral activities.

Grazing animals could trample native vegetation; and due to the tendency of grazing animals to favor palatable species over unpalatable ones, natural vegetative species distribution and abundance could be altered.

Wood gathering removes dead, down logs, which are an important component of natural forest ecosystems.

Dispersed recreation could involve the trampling of vegetation, soil disturbance, and/or an increased risk of human-caused fires. The primary potential source of increased dispersed recreation will be wilderness designation superimposed on RNA designation. As most RNAs are located in Further Planning Areas, wilderness designation is an option considered in the planning process.

Mineral activities include the use of Motorized equipment, ground disturbance, and increased human use of an area, including the increased risk of fire.

Assumptions

Forest-wide Standards and Guidelines and the RNA Prescription will apply to these areas under each alternative. It is assumed that these sources of direction will minimize the possibility that any alternative will have a noticeable direct effect on any individual RNA or on RNAs considered as a group.

Grazing, camping, wood gathering, and mineral activities are prohibited in RNAs; daytime dispersed use is discouraged. Although there is no reasonable means of enforcing those prohibitions perfectly, it is assumed that the RNAs on the Forest are unlikely to attract such uses. Where RNAs are contained within grazing allotments, they lie on the edge of the allotment or on steep, high-elevation lands with poor forage. The few RNAs with fuelwood sources are mostly inaccessible by vehicle. All but the Hall RNA are located away from recreational destination points and travel routes. Mineral-potential ratings for most RNAs and surrounding lands are low.

Consequences Common to All Alternatives

In the Forest planning process, candidate RNAs have been treated as if they were already established. The number of RNAs does not, therefore, vary by alternative. For this reason, and because of the assumptions discussed above, environmental consequences will not be expected to vary by alternative for RNAs. The following figure illustrates the low level variation between alternatives in terms of overall effects on RNAs, when considered collectively.

Table 85
Indicators of Effects on Research Natural Areas

Research Natural Area	Potentially conflicting uses of surrounding lands*						
	1982	PRF	CUR	RPA	CEE	AMN	AMB
Harvey Monroe Hall	M	M	M	M	W	W	M
Indiana Summit	F	F	F	F	F	F	F
Last Chance Meadow	W	W	W	W	W	W	W
McAfee Meadow	G	G	G	G	G,W	G,W	G
Sentinel Meadow	F	F	F	F	F	F	F
Whippoorwill Flat	F,M	F,M	F,M	F,M	F,M	F,W	F,W
White Mountain	-	-	-	-	W	W	-
Net change from base year	-	-	-	-	+3W -1M	+4W -2M	+1W -1M

* G=grazing; W=wilderness; F=fuelwood gathering; M=mineral activities.

RIPARIAN AREAS

Introduction

Forest activities that have major potential effects on riparian areas include livestock grazing, energy development, recreation, stream rewatering, and watershed management.

Consequences of these activities are assessed in terms of surface water availability, amount of riparian acreage lost or gained, and overall condition of riparian vegetation.

Indicators

1. Livestock grazing
2. Energy development (hydroelectric and geothermal)
3. Developed summer recreation use
4. Alpine ski area development
5. Stream miles rewatered
6. Watershed improvement (wet meadow restoration).

Livestock spend a disproportionate amount of time in riparian areas. The amount of grazing affects the quality of riparian areas, primarily due to the

trampling of vegetation, soil disturbance, and stream sedimentation. The primary impacts of grazing on riparian areas will be associated with the 1,000 to 2,000 acres of scattered wet meadows found in areas on which grazing increases under some alternatives. Areas with the greatest potential for increased grazing are along the base of the Sierra Escarpment and in the Glass Mountain area, most of which have little in acreage in stream or lake-related riparian vegetation. The effects of livestock on riparian areas can be mitigated by reducing the amount of time animals spend in those areas. This can be accomplished by fencing, salting, herding, water development, or deferring grazing. Range management guidelines for riparian area protection will be incorporated in allotment management plans as they are updated. It is unlikely that potential livestock impacts can be completely mitigated, however, so potential inadvertent impacts are represented by the overall level of grazing on the Forest.

Given the soils on the Inyo, when headcutting and streambank cutting occurs as a result of grazing or other impacts, the water table drops and the characteristics of the meadow change to more dry-site communities. When this occurs, removal of livestock will not suffice in the restoration of meadows. Watershed restoration work can raise the water level and shift the meadow back to more wet-site plant communities. Methods that can be used include fencing, revegetation, gabion check-dams and modified grazing practices or reduced use.

Hydroelectric projects remove some or all of the water from affected reaches of stream, reducing the amount available to support riparian vegetation. Geothermal development requires water for cooling and recharge, reducing water availability for riparian area-dependent resources. Although the use of either surface water or groundwater sources could affect riparian areas, the depletion of surface water will have the most immediate and direct effects. In addition to water depletion, spills from broken pipes could pollute nearby water sources, potentially affecting riparian values.

Summer recreation use is typically greatest in concentrated recreation areas associated with lakes and streams. Heavy recreation use tends to result in trampled riparian vegetation, eroded streambanks, increased stream channel sedimentation, and disturbance of riparian area-dependent wildlife. The overall amount of recreation use is difficult to control. The potential impacts of that use can be mitigated by developing facilities, such as trails and signs, that improve the resistance of riparian areas to heavy use or that direct and educate the user. As dispersed use of riparian areas is proportional to developed site use in concentrated recreation areas, developed site use is an indicator of total use.

Alpine ski areas consume water for domestic uses and irrigation. The amount of water consumed, and the consequent reduction in water available to support riparian vegetation, is proportional to ski area capacity.

Where dewatered streams are rewatered, riparian habitat can be reestablished. The opportunity to rewater streams arises when new licenses are issued for existing hydroelectric projects.

Of the 26,000 acres of wet meadows on the Forest, 23,500 acres have been damaged or are threatened with damage triggered by the mismanaged grazing of

30 to 100 years ago. Although grazing has been dramatically reduced, and range management practices have improved, the accelerated erosion resulting from past abuses continues to be a problem needing attention. Watershed improvement work in wet meadows arrests the process of accelerated erosion and enables eroded areas to heal. Wet meadows that are not treated are susceptible to continued erosion, resulting in the eventual lowering of the water table and replacement of riparian vegetation with dryland species.

Assumptions

Rewatering of streams and watershed improvement work have the greatest potential to maintain, enhance, and/or increase riparian vegetation on the Forest.

The relationship between impacts on riparian areas and impacts on fish habitat (discussed separately) are closely related. However, in some cases the impact can seriously affect riparian areas without affecting fish, as the riparian areas affected do not support fish habitat. On the other hand, fish habitat improvement within the stream channel itself does not have noteworthy effects on the riparian area.

The relationship between impacts on riparian areas and impacts on soil and water are closely related. However, some activities that affect soil stability do so away from water, minimizing the effects on riparian habitat.

The potential impacts of timber management on riparian habitat are minor since few riparian areas are located within suitable timber, and those within suitable timber are protected by Forest-wide Standards and Guidelines.

Implementation of the Forest-wide Standards and Guidelines will minimize the long-term impacts of new activities on riparian areas under all alternatives.

Impacts from energy development can be mitigated by moderating the size and location of development.

The cumulative effects of geothermal fluid removal on surface groundwater supplies are poorly understood and difficult to predict at this time.

Consequences Common to All Alternatives

The likelihood of energy development is assumed to be the same under all alternatives. There are 33 applications for new hydroelectric projects on approximately 60 miles of stream. Six power plants in Lease Blocks I and II represent geothermal development under all alternatives.

Fifteen miles of stream will be rewatered under all alternatives; 345 acres of riparian vegetation will result from rewatering.

Consequences that Vary by Alternative

Table 86 displays the effects of alternatives on riparian areas.

Table 86
Indicators of Effects on Riparian Areas
(end of the fifth decade)

Indicator	Base Year 1982	Alternatives					
		PRF	CUR	RPA	CEE	AMN	AMB
Livestock grazing (M AUMs)	41.4	41.4	39.1	55.6	46.5	35.1	39.4
Developed summer recreation use (M RVDs)	1.8	2.9	1.9	2.9	2.9	1.9	2.7
Wet meadows subject to accelerated erosion (M acres)	23.5	0	21.5	13.6	0	0	0
Watershed improvement work (M acres)	0.04	23.5	2.0	9.9	23.5	23.5	23.5
Streams rewatered (miles)	0	15	15	15	15	15	15

PRF: (Preferred) The potential impacts of livestock grazing will decrease on riparian areas. No increase in livestock numbers are planned. Riparian areas will be managed in a manner that will improve the condition of these areas. Various livestock management methods will be utilized to protect or enhance the quality of riparian areas. If suitable management strategies cannot be utilized or fail to improve riparian habitat conditions, reduction or elimination of livestock use on these areas will be viable options.

Watershed improvement within meadow communities will be an integral part of riparian habitat improvement. Approximately 23,500 acres of meadow will be subject to watershed improvement. The net effect of this alternative will be an improvement in riparian area condition and grazing practices associated with these areas.

CUR: (Current Program) The potential impacts of livestock grazing on riparian vegetation will change little in the first two decades. Damage will increase moderately in later decades as brush became decadent and animal numbers exceeded the overall carrying capacity of the dry range, forcing livestock into riparian areas. The impacts of recreation use in concentrated recreation areas will change little, as there will be very little increase in use by the fifth decade. The lack of new site protection facilities will, however, allow for existing impacts to continue, and riparian condition in concentrated use areas to worsen over time. The consumptive use of water by ski areas will nearly double with increased capacity.

These adverse effects will not be offset by the minimal amount of watershed improvment in wet meadows; 21,500 acres of untreated wet meadow will continue

to be damaged by accelerated erosion. The net effect of this alternative will be a substantial reduction in the quality and quantity of riparian vegetation because budget limitations will limit the investment needed to correct past problems and mitigate potential recreation impacts.

RPA: (1980 RPA Program) The potential impacts of livestock grazing on riparian vegetation will increase substantially, primarily in those areas on which the 34 percent increase in grazing will occur. Livestock forage utilization will average 60 percent in most areas, in contrast to 50 percent at present. Increased utilization of riparian vegetation could affect riparian condition. The impacts of recreation use in concentrated recreation areas will be high, with a 57 percent increase in use by the fifth decade; These impacts will be offset somewhat by the construction of new trails, signs, and other site-protection facilities. The consumptive use of water by ski areas would more than double with increased capacity.

These adverse effects will be offset slightly by watershed improvement in wet meadows; however, 13,600 acres will still be subject to accelerated erosion. The net effect of this alternative will be a moderate overall reduction in the quality and quantity of riparian vegetation, as the investment in repairing past damage will not be great enough to offset the potential inadvertent impacts of greatly increased commodity production and recreation use.

CEE: (Maximize Cost-Efficiency) The potential impacts of livestock grazing on riparian vegetation will increase moderately, primarily in those areas on which the 12 percent increase in grazing will occur. The potential impacts of recreation use in concentrated recreation areas will be high, with a 57 percent increase in use by the fifth decade; these impacts will be offset somewhat by the construction of new trails, signs, and other site-protection facilities. The consumptive use of water by ski areas will triple with increased capacity.

These adverse effects will be offset by full watershed improvement in wet meadows. The net effect of this alternative will be the overall maintenance of quality and quantity of riparian vegetation.

AMN: (Maximize All Amenities) The potential impacts of livestock grazing on riparian vegetation will decline with an overall 15 percent reduction in grazing outputs. The potential impacts of recreation use in concentrated recreation areas will be low, as total use will increase only slightly and any residual impacts will be offset by the construction of new trails, signs, and other site-protection facilities. The consumptive use of water by ski areas will increase 50 percent with increased capacity. Any potential adverse effects will be more than offset by full watershed improvement in wet meadows. The net effect of this alternative will be a substantial improvement in the overall quality and quantity of riparian vegetation.

AMB: (Emphasize Wildlife and Recreation) The potential impacts of livestock grazing on riparian vegetation will decline with the overall five percent

reduction in grazing outputs. The potential impacts of recreation use in concentrated recreation areas will be moderately high, with a 44 percent increase in use by the fifth decade; these impacts will be offset somewhat by the construction of new trails, signs, and other site-protection facilities. The consumptive use of water by ski areas will more than double with increased capacity.

These potential adverse effects will be more than offset by full watershed improvement in wet meadows. The net effect of this alternative will be a moderate improvement in the quality and quantity of riparian vegetation.

SENSITIVE PLANTS

Introduction

Forest activities that have major effects on sensitive plants include facility construction, energy and minerals development, fire management, range management, recreation management, timber management, wildlife management, and wilderness area recommendations.

Consequences of these activities are assessed in terms of relative potential threats to sensitive plant habitat. Data sources for this analysis include existing field inventories, literature, and sensitive plant species status reports.

Indicators

1. Trail construction (other than nordic ski trails)
2. Road construction (other than mining/geothermal)
3. Timber site preparation
4. Wildfire suppression
5. Vegetation treatment for range and wildlife
6. Geothermal and mineral development
7. Alpine ski area development
8. Developed recreation site capacity
9. Wildernesses recommendations.

The first eight indicators represent land-disturbing activities and associated potential threats. The greater the number of acres of land disturbed, the greater the likelihood of inadvertently damaging or destroying sensitive plant habitat. Wildfire suppression activities, including the mechanical construction of fire lines and base camps, will have the greatest potential for impacting unknown sensitive plant habitat. Planned projects requiring environmental analysis and sensitive plant clearance will have the least potential to impact unknown habitat.

Indicator nine represents a reduction in potential threat based on the restricted amount of use and type of activities allowed in wilderness. The greater the acreage recommended for wilderness, the lower the likelihood that sensitive plant habitat will receive adverse impacts.

Assumptions

Implementation of Forest-wide Standards and Guidelines and Management Prescription direction will minimize the likelihood of Forest activities jeopardizing the viability of sensitive plants or resulting in damage or destruction of their essential habitat.

Any proposed Forest-initiated or -authorized project with the potential for environmental impacts requires an environmental analysis with preparation of appropriate environmental documents. Sensitive plant habitat needs are always addressed in such analyses; inventories are conducted and mitigation prescribed where necessary.

Consequences that Vary by Alternative

Table 87 displays how the indicators of effects on sensitive plant habitat will vary by alternative. It also displays the relative potential threat to sensitive plant habitat. A high threat rating applies to those alternatives where the amount of projected land disturbance is high (top 1/3) relative to other alternatives and the amount of recommended wilderness is low (bottom 1/3) relative to other alternatives. Low relative disturbance and high-level recommended wilderness will produce a low threat rating.

Table 87
Indicators of Impacts on Sensitive Plant Habitat
(end of the fifth decade)

	Alternatives					
Indicator	PRF	CUR	RPA	CEE	AMN	AMB
New trail construction						
(non-nordic miles)	285	28	263	325	179	209
(M acres disturbed)	0.3	<0.1	0.3	0.3	<0.1	0.2
New road construction						
(miles)	87	46	103	65	14	38
(M acres disturbed)	0.2	0.6	0.3	0.2	0.4	0.1
Timber site preparation (M acres)	20.5	30.0	55.6	18.8	7.4	11.5
Wildfire (M acres burned)	53.2	52.9	53.2	64.5	48.2	48.2
Vegetation treatment for range and wildlife (M acres)	114.7	85.6	118.5	116.6	111.3	109.0
Geothermal and mineral development (M acres disturbed)	6.1	6.1	7.0	3.9	3.1	4.8
New recreation site capacity (M acres disturbed)	1.0	0	1.0	0.9	0	0.4
Total land disturbance (M acres)	196	175.3	235.9	205.2	172.0	182.3
Relative disturbance level	M	L	H	H	L	L
Recommended wilderness (M acres)	112.6	107.6	0	339.8	510.8	222.7
Relative protection level	L	L	L	H	H	M
Relative potential threat	MH	M	H	M	L	ML

H = high M = moderate L = low

PRF: (Preferred) The moderate relative level of projected land disturbance and low relative level of recommended wilderness will provide a moderately high-level threat of adverse impacts on sensitive plant habitat. Wildfire, which poses the greatest threat to sensitive plant habitat due to mechanical suppression and a lack of opportunity to analyze and mitigate effects, will represent 27 percent of total disturbance.

CUR: (Current Program) The low relative level of projected land disturbance and low level of recommended wilderness will provide a moderate-level threat of adverse impacts on sensitive plant habitat. Wildfire, which poses the greatest threat to sensitive plant habitat due to mechanical suppression and a lack of opportunity to analyze and mitigate effects, will represent 30 percent of total disturbance.

RPA: (1980 RPA Program) The high relative level of projected land disturbance and low level of recommended wilderness will provide a high-level threat of adverse impacts on sensitive plant habitat. Wildfire, which poses the greatest threat to sensitive plant habitat due to mechanical suppression and a lack of opportunity to analyze and mitigate effects, will represent 22 percent of total disturbance.

CEE: (Maximize Cost-Efficiency) The high relative level of projected land disturbance and high level of recommended wilderness will provide a moderate-level threat of adverse impacts on sensitive plant habitat. Wildfire, which poses the greatest threat to sensitive plant habitat due to mechanical suppression and a lack of opportunity to analyze and mitigate effects, will represent 29 percent of total disturbance.

AMN: (Maximize All Amenities) The low relative level of projected land disturbance and high level of recommended wilderness will provide a low-level threat of adverse impacts on sensitive plant habitat. Wildfire, which poses the greatest threat to sensitive plant habitat due to mechanical suppression and a lack of opportunity to analyze and mitigate effects, will represent 28 percent of total disturbance.

AMB: (Emphasize Wildlife and Recreation) The low relative level of projected land disturbance and moderate level of recommended wilderness will provide a moderately low-level threat of adverse impacts on sensitive plant habitat. Wildfire, which poses the greatest threat to sensitive plant habitat due to mechanical suppression and a lack of opportunity to analyze and mitigate effects, will represent 26 percent of total disturbance.

SPECIAL INTEREST AREAS

Introduction

There are no Forest activities that will have major effects on the one existing special interest area on the Forest, the Ancient Bristlecone Pine Forest Botanical Area.

Assumptions

Forest-wide Standards and Guidelines and Management Prescription direction applied to the Special Interest Area will be the same for each alternative. It is assumed that those sources of direction will protect natural integrity and natural features from threats to damage or destruction.

It is assumed that the amount of visitation to the Bristlecone Pine Forest will, under all alternatives, be influenced primarily by its national and international importance, rather than by variations in Forest management.

Consequences Common to All Alteratives

Alternatives do not differ in the number of Special Interest Areas or the acres included in these areas; the established area will be retained, and no new areas will be established. Candidate Geologic Special Interest Areas are protected under the Forest-wide Standards and Guidelines common to all alternatives, and provisions are made to evaluate them and make recommendations regarding their establishment.

Consequences on the Ancient Bristlecone Pine Forest are expected to be negligible under all alternatives. The area is withdrawn from mineral entry and is isolated geographically from timber harvest, intensive range management, and major increases in recreation use. The people who visit the area are those specifically attracted by the bristlecone pines, typically those who have a scientific interest in the trees and their ecology. Due to these factors, and due to limitations stipulated in the Management Prescription for the Botanical Area, there is little concern that Forest management will have adverse effects on the area under any alternative.

TIMBER

Introduction

The Forest activities most likely to affect timber management are recreation management, wildlife habitat management, visual quality management, and geothermal energy development.

Timber management activities on the Forest are guided by three principal factors: the need for economic growth and timber yield, the need to provide for vegetative diversity in the Forest environment, and the need to maintain forested lands in healthy condition on those lands where timber harvest is not a primary objective.

Consequences are measured in terms of total timber production, fuelwood available for public use, and the overall health and condition of forested ecosystems.

Indicators

1. Acres by regulation class
   - Size of openings
   - Rotation age

2. Regeneration harvest method

3. Timber outputs.

On the Inyo National Forest, a total of 110,700 acres of forested land is estimated to be capable, available, and tentatively suitable for growing crops of industrial quality wood. As each alternative for management of the Forest stresses different sets of resource values; tentatively suitable timber lands are managed under various resource emphases. The timber management strategies associated with different emphases are called regulation classes.

Regulation Class I is applied to lands on which timber growth and yield are minimally constrained by other resource values. Production is guided by by the principles of optimizing growth and yield.

Regulation Class II is applied to lands on which the total amount of regeneration harvest during any single decade is limited by a need for more physical dispersion of that harvest than allowed for in Regulation Class I. This strategy results in longer rotation ages, a broader range of timber age classes, and more vegetative diversity than Regulation Class I.

Regulation Class III is applied to lands on which both the number of acres and the size of regeneration harvest openings are limited by a primary emphasis on other resource values. This strategy applies to areas where timber harvest volume is of less importance than the maintenance of a healthy forest environment.

Unregulated lands are tentatively suitable timber lands excluded from annual programmed harvest because of an emphasis on other resource values. On those lands, only occasional timber harvest entries will be made for the purpose of salvaging dying trees and maintaining general stand vigor when economically feasible.

None of the alternatives project timber harvest or silvicultural activity on all of the land that is physically suitable and administratively available for timber management. The most suitable land is used by those alternatives that stress commercial products, and the least is used where other resource values or economics are limiting factors.

Most of the land managed for annual timber harvest is managed under Regulation Classes II and III. Regulation Class II represents the even-aged system of timber management under which regeneration harvest creates openings five to forty acres in size at some point in the growth cycle of each stand. Stands are generally no longer than twenty acres. Regulation Class III, on the other hand, represents timber management activities that will create openings no larger than two acres in size, and that will not noticeably affect the appearance of the lands managed. (Other uses of those lands, such as alpine skiing or other recreation development could, however, affect their appearance.) Regulation Class III represents uneven-aged management on the Inyo National Forest, with small-sized openings and minimal effect on natural appearance. However, this Regulation Class does not represent the classic

form of uneven-aged management under which a mixture of tree ages and sizes is maintained at all times within all stands.

Rotation age, when analyzed from a timber management point of view, is the age at which the mean annual growth of a stand reaches its maximum value as measured in cubic feet. However, rotation age also influences the amount of forested land being regenerated at one time, the range in tree sizes, and the maximum size attained by crop trees. The longer the rotation age, the fewer the acres regenerated at one time and the larger the final crop tree. Rotation ages are 140 years for Jeffrey Pine, 120 years for lodgepole pine, and 180 years for true firs. Tree size can be expected to reach 30 inches or more in diameter and 100 feet or more in height. The increase in the acreage managed under Class III can be used to accommodate resource values such as natural landscape appearance and wildlife dependent on older seral stages of forest.

All alternatives rely on the use of artificial regeneration (planting of seedlings) to regenerate stands harvested using even-aged techniques. Natural regeneration is not reliable on the Inyo National Forest because long periods elapse between the occurrence of adequate seed crops concurrent with the moisture adequate for survival of natural seedlings. Under the even-aged method of clearcutting, tree seedlings are planted after final harvest and site preparation. Under the shelterwood method, tree seedlings are planted following site preparation but prior to final harvest. Overstory removal means that adequate natural reproduction is already present in the stand, thus the stand will be fully stocked after removal of the overstory trees.

Most of the suitable Jeffrey pine stands on the Forest are understocked due to the past practices of partial cutting and relying on unreliable natural regeneration. Red fir has not been actively managed in the past, due to a lack of knowledge about regeneration in that type and the low level of demand for red fir on the wood products market. Consequently, suitable red fir on the Forest varies from the stands that are overstocked with young trees to those with highly decadent old growth. The management of lodgepole pine has become feasible due to an expanded market for fuelwood. Most suitable lodgepole pine stands on the Forest are poorly stocked and decadent.

The knowledge necessary to grow Jeffrey pine, red fir, and lodgepole pine currently exists and is in practice on the Forest. Economic conditions favoring the marketing of those species also exist. Consequently, timber lands on the Forest are expected to become more heavily stocked and more vigorous in growth due to active timber management.

Timber outputs are measured in terms of annual Allowable Sale Quantity, long-term sustained yield, timber stand improvement, and reforestation.

Consequences That Vary by Alternative

The following table displays the effects of alternatives on timber management.

Table 88
Timber Outputs by the End of the Fifth Decade

Outputs	1982	PRF	CUR	RPA	CEE	AMN	AMB
		Alternatives					
		(fifth decade)					
Allowable Sale Quantity MMBF	10.5	7.1	13.4	19.8	10.1	6.3	9.2
Fuelwood (M cords)	4.0	4.2	4.2	7.2	5.0	3.0	4.7
Long-term sustained yield MMBF	-	14.5	24.7	29.9	24.7	15.6	18.9
		(50-year average)					
Timber stand improvement (acres)		374	212	187	233	186	182
Reforestation (acres)		200	600	1113	376	147	231

PRF: (Preferred) This alternatives will utilize approximately 75,200 acres for timber production. The even-aged management system will be applied on 62,483 acres of these lands, which will be managed primarily for timber yields. The remaining 12,750 acres west of U.S. 395 will be managed under the uneven-aged management regime described in Regulation Class III to minimize conflicts with semi-primitive recreation, developed recreation, alpine ski area potential, and scenic quality. Approximately 35,500 acres of lands that would be suitable for timber production will not be managed because of overriding wildlife and recreation values.

An average of 7.1 MMBF of timber will be sold on an annual basis by the fifth decade, representing a 32 percent reduction from base-level outputs. The health and vigor of forested lands will improve on those acres managed for timber outputs and decline on unmanaged timber lands and lands inside wildernesses and Research Natural Areas.

CUR: (Current Program) This alternative will utilize approximately 89,100 acres for timber production. In the first decade, regeneration harvest will occur on 8,570 acres and intermediate harvest on 8,700 acres. This will shift to 8,420 acres of regeneration harvest and 29,100 acres of intermediate harvest by the fifth decade.

Under this alternative, the even-aged management system will be applied to about 85 percent of the land used for timber production. Of that total, 94 percent will be managed primarily for timber yields and 6 percent will be managed for timber yields to the degree compatible with Visual Quality Objectives. The remainder will be managed under the type of uneven-aged

management described in Regulation Class III to minimize conflicts with recreation development and scenic quality. Approximately 20 percent of tentatively suitable timber land will be unregulated due to a primary emphasis on recreation development, goshawk habitat, and geothermal development.

An average of 13.4 MMBF of timber will be sold on an annual basis by the fifth decade, representing a 28-percent increase relative to base-level outputs. The overall health and vigor of forested lands will improve on those acres managed for timber outputs and decline on unregulated lands and lands inside wildernesses and Research Natural Areas.

RPA: (1980 RPA Program) This alternative will utilize approximately 99,200 acres for timber production. In the first decade, regeneration harvest will occur on 8,280 acres and intermediate harvest on 8,100 acres. This will shift to 14,100 acres of regeneration harvest and 18,600 acres of intermediate harvest by the fifth decade.

Under this alternative, the even-aged management system will be applied to about 94 percent of the land used for timber production. Of that total, 98 percent will be managed primarily for timber yields, and 2 percent will be managed for timber yields to the degree compatible with Visual Quality Objectives. The remainder will be managed under the type of uneven-aged management described in Regulation Class III to minimize conflicts with recreation development. Approximately 10 percent of tentatively suitable timber land will be unregulated due to a primary emphasis on recreation opportunities, goshawk habitat, and geothermal development.

An average of 19.8 MMBF of timber will be sold on an annual basis by the fifth decade, representing an 89-percent increase relative to base-level outputs. The overall health and vigor of forested lands will improve on those acres managed for timber outputs and decline on unregulated lands and lands inside Wildernesses and Research Natural Areas.

CEE: (Maximize Cost-Efficiency) This alternative will utilize approximately 97,600 acres for timber production. In the first decade, regeneration harvest will occur on 8,850 acres and intermediate harvest on 5,000 acres. This will shift to 5,580 acres of regeneration harvest and 19,500 acres of intermediate harvest by the fifth decade.

Under this alternative, the even-aged management system will be applied to about 70 percent of the land used for timber production. Of that total, 97 percent will be managed primarily for timber yields and 3 percent will be managed for timber yields to the degree compatible with Visual Quality Objectives. The remainder will be managed under the type of uneven-aged management described in Regulation Class III to minimize conflicts with recreation development. Approximately 12 percent of tentatively suitable timber land will be unregulated due to a primary emphasis on recreation development (especially alpine skiing), goshawk habitat, and geothermal development.

An average of 10.1 MMBF of timber will be sold on an annual basis by the fifth decade, representing a 4 percent reduction relative to base-level outputs. The overall health and vigor of forested lands will improve on those acres managed for timber outputs and decline on unregulated lands and lands inside wildernesses and Research Natural Areas.

AMN: (Maximize All Amenities) This alternative will utilize approximately 61,800 acres for timber production. In the first decade, regeneration harvest will occur on 5,710 acres and intermediate harvest on 4,700 acres. This will shift to 3,320 acres of regeneration harvest and 17,600 acres of intermediate harvest by the fifth decade.

Under this alternative, the even-aged management system will be applied to about 83 percent of the land used for timber production. Of that total, 96 percent will be managed primarily for timber yields and 3 percent will be managed for timber yields to the degree compatible with Visual Quality Objectives. The remainder will be managed under the type of uneven-aged management described in Regulation Class III to minimize conflicts with recreation development and scenic quality. Approximately 44 percent of tentatively suitable timber land will be unregulated due to a primary emphasis on semi-primitive dispersed recreation, geothermal development, and habitat for wildlife species dependent on older seral stages of forest.

An average of 6.3 MMBF of timber will be sold on an annual basis by the fifth decade, representing a 41-percent reduction relative to base level outputs. The overall health and vigor of forested lands will improve on those acres managed for timber outputs and decline on unregulated lands and lands inside Wildernesses and Research Natural Areas.

AMB: (Emphasize Wildlife and Recreation) This alternative will utilize approximately 69,200 acres for timber production. In the first decade, regeneration harvest will occur on 6,540 acres and intermediate harvest on 6,200 acres. This will shift to 4,210 acres of regeneration harvest and 21,600 acres of intermediate harvest by the fifth decade.

Under this alternative, the even-aged management system will be applied to about 91 percent of the land used for timber production. All of those lands will be managed primarily for timber yields. The remainder will be managed under the type of uneven-aged management described in Regulation Class III to minimize conflicts with recreation development and scenic quality. Approximately 37 percent of tentatively suitable timber land will be unregulated due to a primary emphasis on semi-primitive dispersed recreation, geothermal development, and habitat for wildlife dependent on older seral stages of forest.

An average of 9.2 MMBF of timber will be sold on an annual basis by the fifth decade, representing a 13 percent reduction relative to base-level outputs. The overall health and vigor of forested lands will improve on those acres managed for timber outputs and decline on unregulated lands and lands inside wildernesses and Research Natural Areas.

VISUAL RESOURCES

Introduction

Forest activities that have major effects on visual resources include the development of new concentrated recreation areas, alpine ski area development, geothermal development, timber harvest, and facilities construction.

Indicators

Consequences of these activities are assessed in terms of the following elements of the visual resource management system (for a more detailed discussion of each element, see Chapter III):

1. Recommended Visual Quality Objectives
2. Future Visual Condition
3. Change in visual condition
4. Visual Quality Index.

Basis of Comparison: These indicators compare the alternatives to two baselines: Initial Visual Quality Objectives and Existing Visual Condition. Visual Quality Objectives (VQOs) in general set standards for future landscape appearance. Initial Visual Quality Objectives were derived from an inventory of physical and social environmental factors; they set preliminary objectives for acceptable amounts of landscape alteration based on those factors. Existing Visual Condition measures and describes the present appearance of the landscape.

The Initial Visual Quality Objectives and Existing Visual Condition of a given area are not necessarily the same since the former sets a preliminary standard for the future, and the latter displays the current condition. However, the landscape appearance described by the six VQO levels correspond to the six visual condition levels.

Recommended Visual Quality Objectives: Recommended VQOs are based on the theme of the alternative and the resulting mix of Management Prescriptions and resource program direction. The acreage recommended for each VQO by variety class are displayed by alternative in Table 89. Variety Class A lands are the most interesting, and therefore important as a visual resource; Variety Class C lands are the least important. Initial Visual Quality Objective acreages are also shown, in order to illustrate the distribution of acres by variety class that will maintain an acceptable level of landscape alteration based solely on the factors considered by the Initial Visual Quality Objective inventory.

Future Visual Condition: Future Visual Condition describes the projected appearance of the landscape from natural to altered under each alternative by the fifth decade. Table 90 displays the acreage estimated for each visual condition class by variety class by alternative. Acreages for Existing Visual Condition by variety class are shown as a basis for comparison between the present situation and future situations under different alternatives and

as an indicator of the relative importance of predicted alteration, using variety class as an indicator of importance.

Predictions of Future Visual Condition are based for the most part on the projected visual impacts of alpine ski area development, energy development, and timber harvest in stands that are not yet accessible by road. As these impacts will affect less than 2.5 percent of the Forest land base, Future Visual Condition shows little change, even under the most commodity-oriented alternatives.

Change in Visual Condition: Changes between Existing Visual Condition and Future Visual Condition are based on changes in the human alteration of lands in each Existing Visual Condition level. The acres in each Existing Visual Condition level will either remain the same in the Future Visual Condition, or they will shift to a lower level though alteration or a higher level through rehabilitation. The degree of change can be determined by comparing the Existing Visual Condition level of a given area with the Future Visual Condition level to which it will evolve. The largest drop in visual condition (41,410 acres) represents only 2.1 percent of total Forest acres.

Visual Quality Index: The Visual Quality Index (VQI) is a composite rating of visual quality for the entire Forest. The VQI varies little from one alternative to another.

Table 89
Recommended Visual Quality Objectives by Variety Class
(M acres)

VQO	Variety Class	Initial VQO	Alternatives					
			PRF	CUR	RPA	CEE	AMN	AMB
Preservation*	A	364.7	453.4	445.6	371.5	552.4	628.4	493.2
	B	212.0	235.9	238.7	205.2	353.5	439.5	297.8
	C	3.3	3.3	3.3	3.3	5.3	11.0	8.5
Retention	A	290.9	327.2	286.0	283.6	198.4	175.6	306.6
	B	38.8	304.1	172.1	45.6	108.6	250.0	339.7
	C	0	29.6	13.8	3.6	18.0	78.7	37.9
Partial Retention	A	176.3	51.4	100.2	176.7	81.0	27.8	32.1
	B	410.2	276.6	410.8	514.6	280.5	195.2	228.9
	C	59.7	100.1	112.7	124.0	54.5	46.7	88.7
Modification	A	0	0	0	0	0	0	0
	B	223.5	89.9	82.6	139.0	159.8	20.7	39.3
	C	41.3	13.2	16.2	14.8	67.1	9.2	11.1
Maximum Modification	A	0	0	0.2	0.2	0.2	0.2	0.2
	B	22.2	0	2.4	2.2	4.1	1.2	0.8
	C	41.8	0	0.3	0.5	1.3	0.5	0

*The Initial Visual Quality Objective inventory applies the Preservation VQO only to lands classified or proposed for Wilderness or Research Natural Area designation.

Table 90
Future Visual Condition by Variety Class
(M acres)

Visual Condition	Variety Class	Existing Visual Condition	Alternatives					
			PRF	CUR	RPA	CEE	AMN	AMB
		(1982)			(fifth decade)			
Level I	A	732.5	734.2	731.2	702.4	735.7	754.8	728.2
	B	639.5	637.7	631.7	633.4	655.0	675.7	638.6
	C	58.6	57.9	59.4	58.6	60.8	66.7	67.2
Level II	A	30.2	41.1	42.8	29.1	25.6	89.7	47.5
	B	95.4	109.8	110.9	86.3	81.3	97.3	133.5
	C	43.5	53.7	44.9	43.7	42.5	50.7	46.6
Level III	A	38.1	29.6	29.1	41.4	35.1	21.5	28.6
	B	117.8	111.8	108.2	115.3	111.1	93.2	90.5
	C	31.9	25.3	30.7	30.0	29.3	24.9	27.8
Level IV	A	22.3	26.4	27.1	56.3	31.9	25.1	26.0
	B	39.4	42.0	49.7	64.6	51.3	36.9	39.7
	C	9.2	7.4	8.8	11.6	11.1	2.7	3.3
Level V	A	8.1	0.8	1.8	2.7	3.5	0.9	1.8
	B	10.2	5.2	5.4	6.0	5.5	3.1	4.3
	C	1.1	0.6	0.6	0.6	0.8	0	0.1
Level VI	A	0.9	0	0	0.2	0.2	0	0
	B	4.2	0	0.7	1.0	2.3	0.2	0
	C	2.0	1.4	1.8	1.7	1.8	1.2	1.2

Consequences Common to all Alternatives

The Inyo National Forest includes 1,884,700 acres outside the Mono Basin National Forest Scenic Area. The Scenic Area is not considered in the visual resource analysis because inventories for that area are not complete, and because planning for that area will be conducted outside of the Forest planning process. Of that total, 565,100 acres (30 percent) are designated wilderness and 873,000 acres (51 percent) are currently unroaded and undeveloped. Consequently, more than 81 percent of the Forest is currently natural in appearance.

Natural-appearing acreage will not change significantly under any alternative. Except for the Monache and San Joaquin areas, unroaded lands are mostly steep and lacking in resource development opportunities. Potential impacts will be associated mainly with scattered mineral exploration. Most of the potential visual impacts on the Forest are site specific. Taken together, they will change the visual condition on less than 2.5 percent of the Forest.

Existing concentrated recreation areas will appear the same in the fifth decade as they do today. Although some areas will be more intensively developed with recreation facilities, the overall visual character of those areas will not change substantially.

Shrub vegetation treatments for wildlife habitat and range improvement will not affect visual condition to a degree that will be noticeable to the casual observer, especially as seen in middleground or background distances. Any visual impacts that did occur will be short in duration (one to five years) with negligible effects over the 50 years. In contrast, mechanical vegetation treatment in pinyon-juniper ("chaining") could have a more short-term visual impact. On the Inyo, however, the acres affected will be negligible, (less than 50 acres/year) and can therefore be considered common to all alternatives.

Increased alpine ski area development on Mammoth and June Mountains is common to all alternatives, and the visual impacts of that development and associated community growth will also be common to all alternatives. About 1,500 acres over the current level will be affected. These acres now range from natural-appearing to moderately disturbed condition classes. After development, they will range from moderate to major disturbance classes. Proposed developments will dominate middleground views as seen from U.S. 395 and some foreground views along State Highways 203 and 158. Visual condition could fall below assigned VQOs.

New hydroelectric projects have been proposed adjacent to and within the foreground zones of many Sensitivity Level 1 roads, recreation sites, and concentrated recreation areas. The likelihood of specific projects developing is considered common to all alternatives, as the decision to construct is made outside of the Forest planning process. These projects could fail to meet assigned VQOs and will always change the visual condition from natural appearing or minor disturbances to major disturbances as viewed in foreground and middleground zones.

Consequences That Vary by Alternative

PRF: (Preferred) This alternative will improve visual quality on 3.3 percent, maintain current visual quality levels on 95.8 percent, and reduce visual quality on 0.9 percent of the Inyo National Forest. The Visual Quality Index will increase 0.31 (0.2 percent).

Most foreground zones along Sensitivity Level 1 roads and trails will be natural appearing. Exceptions include existing facilities related to community development such as the Mammoth-June Lake airport and the existing waste treatment plant, existing and new recreation developments in concentrated recreation areas, new powerline corridors north and east of Mammoth, and alpine ski area facilities.

Alpine ski area and geothermal development will create dominant structural and/or vegetation patterns in middleground and background views. Both types of development will create changes of several condition classes, converting natural-appearing lands to disturbed conditions. Community growth toward Sherwin Bowl could also affect lands that now appear natural.

The natural-appearing condition of red fir stands east of San Joaquin Ridge will be retained because these stands will not be entered for timber management during this planning period. New roads and use sites will create new foreground zones and closer middleground views.

The creation of new concentrated recreation areas, with attendant roads and facilities, will change the visual condition in portions of the Owens River and Walker Lake-Sawmill Canyon areas. New Sensitivity Level 1 roads, trails, and recreation developments will change VQOs in foreground zones from Partial Retention to Retention. As these areas already have minor disturbances, visual condition will change only slightly.

CUR: (Current Program) This alternative will improve visual quality on 2.4 percent, maintain current visual quality levels on 97.0 percent, and reduce visual quality on 0.6 percent of the Inyo National Forest. The Visual Quality Index will increase 0.23 from base year, a change of less than 0.2 percent.

Most foreground zones along Sensitivity Level 1 and 2 roads and trails will be natural appearing. Exceptions include existing facilities related to community development (such as the Mammoth-June Lake airport and the existing waste treatment plant), existing recreation developments in concentrated recreation areas, new powerline corridors north and east of Mammoth, and alpine ski area facilities.

The visual condition of red fir stands east of San Joaquin Ridge will change as seen from on-site due to timber activities, as that area will be managed with a primary emphasis on timber production. The timber management disturbances will appear minor in the middleground as seen from most observation points, especially due to the 20-acre limit on opening size. As seen from concentrated recreation areas along upper Deadman creek, however, disturbances will appear moderate. The foreground zones of Sensitivity Level 1 and 2 viewpoints will appear natural.

Geothermal energy development in Lease Blocks I and II will also affect visual quality, but at slightly lower levels than in PRF due to more stringent VQOs. Geothermal developments will appear as a major disturbance in middleground zones.

Alpine ski area development will create dominant structural and/or vegetation patterns in middleground and background views. These impacts will alter the visual condition of approximately 3,900 acres in the Sherwin Bowl, Minaret Summit, and/or Mammoth Knolls areas, converting natural-appearing lands to disturbed conditions. Community growth toward Sherwin Bowl could also affect lands and zones that now appear natural.

Because recreation development and use will continue to operate at low standard levels, some recreation sites will be eliminated, improving visual condition on a small number of acres. The growing amounts of dispersed use will, however, have more importance for visual resource management. Four-wheel drive and OHV use in particular will create highly visible disturbances, particularily near communities and on steeper slopes that are restricted under the current OHV plan. The acres impacted will increase over

time and could change the visual condition on 10 to 30 thousand acres by the fifth decade. Control of current OHV activity adjacent to Mammoth and along the west slopes of the White Mountains east of Bishop is already beyond the capabilities of the Forest.

Finally, wilderness and unroaded lands currently natural in appearance will progressively decline in condition due to the increasing inability of the Forest to enforce regulations, quotas, or management direction.

RPA: (1980 RPA Program) The RPA alternative will improve visual quality on 0.3 percent, maintain current visual quality on 97.6 percent, and reduce visual quality on 2.1 percent of the Inyo National Forest. The Visual Quality Index will decline 1.42 from base year, a one percent change.

This alternative will generate the greatest visual disturbance due to timber activities of any alternative. Timber management in the foreground zones of state-designated scenic highways will meet the VQO of Partial Retention. However, the middeground zones of scenic highways and the foreground zones of other Sensitivity Level 1 travel routes (including trails in the Monache area) will include moderate disturbance. Timber harvest in general will create moderate disturbances on 30- to 60-percent slopes, failing to meet inventoried VQOs. Openings could routinely approach the 40-acre maximum size. Condition classes will be lowered from base year on 13,000 acres in the foreground zones of Level 1 and 2 roads and trails outside of concentrated recreation areas and on 11,000 acres of suitable timber on 30- to 60-percent slopes.

Alpine ski area development will create dominant structural and/or vegetation patterns in the Sherwin Bowl and Minaret Summit areas seen as middleground and background zones. The visual condition of approximately 5,200 acres will be affected. Associated community growth in the Mammoth area could impact 1,500 to 2,500 additional acres south and east of town that are now natural appearing or have only minor disturbances.

Geothermal energy development will affect the visual condition of more than 4,000 acres in Lease Blocks I and II north and northeast of Mammoth. Structures, roads, and powerlines will create changes of several condition classes. Major disturbances will be visible in middleground zones.

New concentrated recreation areas, roads, and recreation facilities will change the visual condition of 1,500 acres in the Buttermilk and Walker Lake-Sawmill Canyon areas.

Designated open-OHV areas could also change the visual condition class slightly on 62,200 additional acres. However, due to the location of these areas, only minor disturbances will be visible on steeper slopes in middleground and background zones of Level 1 roads and trails.

This alternative represents reduced visual condition on the greatest number of acres found in any alternative.

CEE: (Maximize Cost-Efficiency) This alternative will improve visual quality on 2.0 percent, maintain current visual quality levels on 96.7 percent, and reduce visual quality on 1.3 percent of the Inyo National Forest. The Visual Quality Index will decline 0.9 from base year, changing less than 0.6 percent.

Timber management activities will not noticeably affect the natural appearance of the foreground zones of scenic highways. The middlegrounds of scenic highways and the foregrounds of other Sensitivity Level 1 travel routes could be moderately disturbed. Openings could routinely approach the 40-acre maximum size. The visual condition of red fir stands east of San Joaquin Ridge and outside of alpine ski areas will change due to timber activities, as that area will be managed with a primary emphasis on timber production. Timber harvest in the Monache area will create moderate disturbances on lands seen in the middleground from main access and use areas. Initial VQOs for Monache will not be met due to improved road access and changed use.

The greatest amount of visual change will result from full alpine ski area development on 14,000 acres in the Sherwin Bowl, Mammoth Knolls, Minaret Summit, San Joaquin, and White Wing areas. Visual condition on those acres will change from natural-appearing to modified. Assigned VQOs might not be met, especially on slopes with heavy timber in the Mammoth Knolls, San Joaquin Ridge, and White Wing. Base facilities could become dominant structural features in foreground and middleground zones.

Community growth in the Mammoth area will also be the most intensive under this alternative, requiring expansion onto lands that are now in public ownership. Visual impacts will increase significantly on 1,000 to 2,000 acres along the base of Sherwin Bowl and east along Highway 203 into the Shady Rest concentrated recreation area. Natural-appearing areas will become disturbed.

Geothermal development will create dominant structural and/or vegetation patterns in middleground and background views, affecting the visual condition of 4,000 acres or more. This development will create changes of several condition classes, converting natural-appearing lands to disturbed conditions.

Designated open-OHV areas could also change the visual condition class slightly on 45,800 additional acres. However, due to the location of new areas, only minor disturbances will be visible on steeper slopes in the middleground and background zones of Level 1 roads and trails.

The creation of new concentrated recreation areas, with attendant roads and facilities, will change the visual condition on 1,500 acres in the Owens River and Walker Lake-Sawmill Canyon areas. New Sensitivity Level 1 roads and sites will change VQOs from Partial Retention to Retention. As these areas already have minor disturbances, overall visual condition will change only slightly.

AMN: (Maximize All Amenities) This alternative will improve visual quality on 6.9 percent, maintain current visual quality levels on 92.6 percent, and

reduce visual quality on 0.5 percent of the Inyo National Forest. The Visual Quality Index will increase by 1.24 from base year, a change of 0.9 percent.

The least amount of new visual disturbance and the greatest amount of visual rehabilitation are found under this alternative. Timber management activities will meet the Retention VQO on more then 7,000 acres of foreground zones along Sensitivity Level 2 roads, eventually raising the visual condition to natural appearing. Openings will be limited to twenty acres in size or smaller. There will be no timber harvest or road building into the Monache area. Many recreational facilities will also be rehabilitated to reduce visual impacts in foreground zones.

Geothermal development in Lease Blocks I and II will create structural disturbances which could dominate certain middleground views. The visual condition will change several classes on more than 4,000 acres.

The fact that this alternative has the least acreage in open-OHV areas will also contribute to improved visual condition.

AMB: (Emphasize Wildlife and Recreation) This alternative will improve visual quality on 4.7 percent, maintain current visual quality levels on 94.5 percent, and reduce visual quality on 0.8 percent of the Inyo National Forest. The Visual Quality Index will increase 0.56 from base year, a 0.4 percent change.

There will be no timber harvest or road building into the Monache area. Moderate timber harvest impacts in red fir will create some minor disturbances as seen in middleground on the more visible lower slopes of San Joaquin Ridge, but opening size will be limited to ten acres or less in that area.

Geothermal development in Lease Blocks I and II will create structural disturbances that dominate certain middleground views. The visual condition will change several classes on more than 4,000 acres.

Visual condition will change on approximately 8,100 acres due to additional alpine ski area development in the Mammoth Knolls, Minaret Summit, and White Wing areas. These areas will change from natural appearing to highly modified. Ski area developments, especially those resulting in vegetation changes on the forested slopes of Mammoth Knolls and White Wing, could fail to meet assigned VQOs. Community growth south of Mammoth Lakes could also affect lands that now appear natural.

WATERSHED: SOILS

Introduction

Forest activities that have major effects on the soils resource include timber management, facilities construction, OHV use, recreation development, minerals and energy development, range management, fire management, watershed management, and fish habitat management.

Consequences of these activities are assessed in terms of soil productivity. Accelerated erosion reduces soil productivity; watershed improvement restores lost or threatened productivity by arresting the erosion process.

Indicators

1. Timber management (site preparation)
2. Road and trail construction
3. New alpine ski area development
4. New summer recreation development
5. New off-road vehicle (OHV) use
6. Wildfire
7. Livestock grazing
8. New mineral and energy development
9. Watershed restoration and fish habitat improvement.

Machinery used for timber site preparation disturbs the fragile and fertile soil surface layer. Vegetation is also removed during site preparation, so that competition between grass or brush and young trees is minimized. The combination of disturbance by machinery and the removal of vegetation can easily lead to accelerated erosion and a consequent loss of soil productivity. Timber harvest itself is not generally a problem for soils on the Inyo because most harvest is conducted over the snow in winter.

The building of new roads and trails also disturbs the soil and removes the vegetation, resulting in high potential for soil erosion.

Alpine ski areas are especially subject to accelerated erosion because vegetation is removed from the runs, the slopes are steep, and it is difficult to reestablish protective vegetation as runs are frequently reshaped by heavy equipment.

Recreation developments (such as campgrounds, restrooms, and parking areas) disturb the soil and accelerate erosion by mechanical removal of vegetation and reshaping of the soil. Large structures and parking lots cover large areas of soil, taking it out of production.

Off-highway vehicle (OHV) use compacts and displaces the soil. These effects are especially destructive when they occur on large open areas, rather than being restricted to designated roads and trails.

Wildfire has the potential to increase soil erosion and is difficult to mitigate. High intensity fires remove all vegetation, create an impermeable soil layer at or near the surface, and can affect large areas.

Livestock affect the soil resource by trampling the soil and by removing protective vegetation. The loss of vegetative cover can expose the soil to accelerated erosion, with a consequent loss in soil productivity.

The development of mining sites involves shaping, vegetation removal, and other soil disturbances that increase the potential for accelerated erosion and loss of soil productivity.

Energy development also entails soil shaping, vegetation removal, displacement (by covering with buildings or other structures), and other soil disturbance. Geothermal development entails the building and maintaining of one or more power plants, numerous drilling pads, miles of pipeline and power lines, and a complex of associated roads. Wind farms include a network of windmill pads, powerlines and roads. Hydroelectric development entails the installation of pipelines and transmission lines. In addition, as water diversion will result in a lower density of vegetative cover, more soil will be exposed to the forces of erosion.

Activities that restore and protect the soil resource include those that protect or restore vegetative cover, arrest accelerated erosion, and rebuild the soil. Watershed restoration arrests soil erosion and loss of productivity using structural and vegetative means; fish habitat improvement projects often include the planting of vegetation on stream terraces and reseeding of exposed streambanks.

Assumptions

All of the alternatives are analyzed with the assumption that Forest-wide Standards and Guidelines and Management Prescription direction provide for the *maintenance of long-term soil productivity*.

Only new soil-disturbing activities are used as indicators of environmental consequences. Existing disturbance represents the basis of comparison for changes under the various alternatives.

Vegetation treatment for range and wildlife will have minimal effects on the soil resource, as such projects are conducted under controlled conditions including environmental analysis and mitigation.

Consequences Common to All Alternatives

The likelihood of energy development is assumed to be the same under all alternatives; for planning purposes, development scenarios based on current agreements are common to all alternatives.

Consequences that Vary by Alternative

Tables 91 and 92 display indicators of potential impacts on the soil resource under each alternative. Table 91 displays potential adverse and beneficial effects of the indicators by alternative in the first decade. The adverse effects reflect the acres which will be exposed to accelerated soil erosion under each alternative; the beneficial effects represent the number of acres which will be restored under each alternative. The net potential effect represents the difference of the acres disturbed minus those restored. Table 92 displays the net potential effect by alternative by decade for five decades, the 50-year annual average, and the relative effect rating.

Table 91
Indicators of Effects on Soil Productivity by Alternative
(first decade - average annual acres)

	Alternatives					
Indicator	PRF	CUR	RPA	CEE	AMN	AMB
Activities that have potential adverse effects:						
Timber site preparation	200	817	714	307	32	96
New roads and trails	4	5	11	10	7	8
New alpine ski areas	44	44	44	44	44	44
New nonalpine recreation development	16	0	16	16	0	10
New open summer OHV areas	0	0	1,244	916	0	0
Wildfire	918	1,011	918	1,134	927	918
New grazing	0	0	193	0	0	0
New mineral development	105	105	117	81	51	78
TOTAL	**1,287**	**1,982**	**3,257**	**2,508**	**1,061**	**1,154**
Activities that have potential beneficial effects:						
New watershed restoration and fish habitat improvement	593	42	189	503	504	505
Net Potential Effect						
(adverse minus beneficial)	694	1,940	3,068	2,005	557	649

Table 92
Net Effects on Soil Productivity by Decade
(average annual net effect in acres)

	Alternatives					
Decades	PRF	CUR	RPA	CEE	AMN	AMB
Decade 1	694	1,940	3,068	2,005	557	571
Decade 2	525	1,280	2,761	2,027	586	655
Decade 3	790	1,377	3,293	2,129	745	770
Decade 4	899	1,513	3,672	2,305	905	860
Decade 5	947	1,804	3,935	3,039	1,021	1,283
Total net effect (5 decades)	**38,550**	**77,914**	**167,290**	**115,050**	**38,140**	**41,390**
Relative effect rating	LM	LM	H	M	L	L

PRF: (Preferred) Under this alternative, the potential degradation of the soil resource over the next fifty years will be low-moderate. These effects will result from a moderate level of timber site preparation, a large amount of new road and trail construction, a moderate level of new alpine ski area development, a large amount of new recreation development, a high level of projected mineral activity, and a moderate amount of wildfire. There will be no new open OHV acreage and no new areas managed for grazing. The large amount of watershed restoration and fish habitat improvement will offset some of the adverse effects on a Forest-wide basis.

CUR: (Current Program) Under this alternative, the relative potential degradation of the soil resource over the next fifty years will be low-moderate. These effects will result from a high level of timber site preparation, a small amount of new road and trail construction, a moderate level of new alpine ski area development, a high level of projected mineral activity, and a large amount of projected wildfire. There will be no new non-alpine recreation development, new open OHV acreage, or new areas managed for grazing. The small amount of watershed restoration and fish habitat improvement will only slightly offset the adverse effects.

RPA: (1980 RPA Program) Under this alternative, the relative potential degradation of the soil resource over the next fifty years will be the highest of any alternative. These effects will result from a very high level of timber site preparation, a large amount of new road and trail construction, large acreage in new alpine ski area development, a high level of projected mineral activity, and a moderate amount of projected wildfire, considerable new acreage managed for grazing, and substantial additions of open OHV acreage. The moderate level of watershed restoration and fish habitat improvement will only slightly offset the adverse effects on a Forest-wide basis.

CEE: (Maximize Cost-Efficiency) Under this alternative, the relative potential degradation of the soil resource over the next fifty years will be second only to RPA. These effects will result from a moderate level of timber site preparation, a large amount of new road and trail construction, maximum new alpine ski area development, a large amount of new recreation development, a moderate level of projected mineral activity, a large amount of wildfire, and substantial new open OHV acreage. There will be no new areas managed for grazing. Full implementation of watershed restoration and fish habitat improvement opportunities will offset some of the adverse effects on a Forest-wide basis.

AMN: (Maximize all Amenities) Under this alternative, the relative potential degradation of the soil resource over the next fifty years will be the lowest of any alternative. These effects will result from a low level of timber site preparation, a small amount of new road and trail construction, minimal new alpine ski area development, a low level of projected mineral activity, and a moderate amount of wildfire. There will be no new nonalpine recreation development, new open areas managed for grazing, or new open OHV acreage. Full implementation of watershed restoration and some fish habitat improvement opportunities will offset many of the adverse effects on a Forest-wide basis.

AMB: (Emphasize Wildlife and Recreation) The relative potential degradation of the soil resource over the next fifty years will be the second-lowest under this alternative. These effects will result from a low level of timber site preparation, a moderate amount of new road and trail construction, a high level of new alpine ski area development, a moderately high level of new nonalpine recreation development, a moderate level of projected mineral activity, and a moderate amount of wildfire. There will be no new open areas managed for grazing or new open OHV acreage. Full implementation of watershed restoration and moderate fish habitat improvement will offset many of the adverse effects on a Forest-wide basis.

WATERSHED: WATER

Introduction

Forest activities that have major effects on water quality and water yield include timber management, road construction, recreation use, minerals and energy development, range management, watershed management, and fish habitat management.

Consequences of these activities are assessed in terms of overall watershed condition as reflected in water quality and water yields, including cumulative effects.

Data sources for this analysis include water resources records for the Inyo National Forest (1929 to the present), professional literature, personal communications with adjacent National Forests, and professional judgment.

Indicators

1. Timber management (site preparation)
2. Road and trail construction
3. New summer recreation development
4. Mineral and energy development
5. Alpine ski area development
6. OHV use
7. Livestock grazing
8. Wildfire
9. Watershed and fish habitat improvement

Activities associated with the first eight indicators all affect water quality by disturbing, exposing, and/or compacting soils and channelizing water, providing an opportunity for soil to erode and to enter streams as sediment. Sedimentation can reduce reservoir capacity; lower water quality for irrigation, hydropower and domestic use; and reduce fish habitat quality. Acres of soil disturbed are used to quantify the relative impacts of the alternatives on overall watershed condition. The assumed relationship is that the more acres disturbed, the greater the effects on watershed condition.

Water yield is also altered by land-disturbing activities because soil disturbance triggers changes in the hydrologic regime (the timing, volume and quality of runoff). As runoff volumes during the spring increase with increased soil disturbance, the duration of runoff decreases. Increased runoff volumes over a shorter time period result in less soil water for plant growth, a lower recharge rate for groundwater basins due to reduced percolation through the soil mantle, and increased stream channel erosion.

Increases in water yield are generally of benefit to municipal water users but the tradeoff of increased sediment yield impacting beneficial water uses can be high. Alternatives which emphasize activities that increase water yield also increase the potential for sedimentation.

Machinery used for timber site preparation disturbs the soil structure and protective vegetation. The results can include reduced infiltration rates and capacity, water channelization, overland water flow, and increased susceptibility of the soil to detachment and displacement under the impact of raindrops. Ground disturbance is the first step in a process that eventually leads to soil movement and reduction of water quality from sedimentation. In general, suitable timber lands on the Forest lie away from bodies of water. Only those timber activities on lands that could contribute to water quality problems are used as an indicator. Timber harvest itself is not an indicator, as logging on the Inyo is conducted in winter over the snow to minimize soil disturbance.

Road and trail construction, OHV use, non-alpine recreation development, and mineral and energy development all disturb the soil in much the same way as that described above for timber activities.

Alpine ski area development has especially high potential to increase water yield, produce sediment, and reduce water quality. Ski runs lie on steep

slopes and are cut parallel to the slope, causing severe water channelization; they are compacted, altering soil permeability; and nearly all the vegetative cover is removed, causing a drastic shift in the hydrologic cycle. As ski areas are managed to maximize skiing opportunities even with minimal snow cover, slopes are sculptured to eliminate rough projections and to follow the fall line as uniformly as possible. Such conditions facilitate soil erosion and consequent sedimentation. Finally, ski areas lie in areas with high levels of precipitation, at high elevations with short growing seasons, and on infertile soils. Conditions are not, therefore, favorable for establishing protective vegetation once native shrubs and trees have been removed.

Livestock spend a disproportionate amount of time in wet meadows and other riparian areas. Grazing animals can impact water quality by trampling streambanks, compacting soils, reducing vegetative cover, and increasing sedimentation. Past grazing has impacted approximately 23,500 acres of meadows on the Forest. Continued grazing, while not generally increasing sedimentation, may well slow the course of natural recovery. Although the effects of grazing on water quality can be mitigated by various measures such as herding, salting, water development, and delaying the grazing season, fencing will be the only effective mitigation measure for grazing in certain sensitive streamside zones.

Wildfires typically remove or reduce protective vegetation, create water-repellant soils, increase runoff, and accelerate soil erosion, affecting both water yield and water quality.

Watershed restoration includes the construction of erosion control structures, stabilization of gullies and channels, obliteration of unneeded roads and trails, and planting of vegetative ground cover. These measures help to arrest soil erosion, thereby reducing sedimentation of streams and retarding runoff. Fish habitat improvement work includes such practices as willow planting and soil rehabilitation to stabilize stream channels and reduce sediment production. Acres of watershed and fish habitat improved are used to quantify the beneficial effects these activities by alternative.

Assumptions

Water quality on the Inyo National Forest is primarily affected by sediment production. Although Forest activities are managed to minimize impacts on watersheds, sediment yields will increase as new ground disturbing activities occur.

Although sediment yield corresponds broadly to the amount of ground disturbed Forest-wide, the relationship varies from one location to another depending on soil characteristics, the presence or absence of streams, streambank characteristics, slope, precipitation, vegetation type, and other physical and biological factors.

Vegetation treatment for range and wildlife will have minimal effects on water quality, as treatments occur under carefully controlled conditions.

All alternatives include Forest-wide Standards and Guidelines and Management Prescription direction which protect or restore watershed condition. For

example, Best Management Practices (BMPs), a comprehensive set of guidelines designed to minimize adverse impacts on water quality, will be applied under any alternative.

Consequences Common to All Alternatives

Approximately 7,000 acre-feet of surface water per year are presently needed for Forest activities. This amount will be expected to increase by less than 70 acre-feet over the next fifty years under any alternative; consequently, the Forest's need for additional water rights is considered common to all alternatives.

Increased ski area capacity is expected to result in community growth, which will in turn result increased demands for municipal water supplies. Mono County land use plans project a 100 to 200 percent increase in the demand for water. As the competition for water uses is intense, these conditions will be expected to result in water rights adjudications under any alternative.

Consequences that Vary by Alternative

Table 93 displays the relative indicators of impacts on water quality for each alternative for the first decade. The potential adverse effects reflect the potential number of acres disturbed, which could in turn impact water quality. The potential beneficial effects represent the number of acres that will be restored under each alternative. The net potential effect is the difference of the projected disturbed minus restored acreage.

Table 94 displays the net potential effect of each alternative, by decade, over the next fifty years, the fifty-year total effect, and the net effect rating.

Table 95 displays anticipated increases in water yield in the first decade. This figure was calculated primarily on the basis of acres of vegetation removal for timber harvest and ski area development.

Table 93
Indicators of Effects on Water Quality
(first decade - average annual acres)

Indicators	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
Activities that have potential adverse effects:						
Timber site preparation (only on lands near water)	30	65	131	24	1	13
New roads and trails	4	5	11	10	7	8
New alpine ski areas	44	44	44	44	44	44
New non-alpine recreation development	16	0	16	16	0	10
New OHV open areas	0	0	1,244	916	0	0
Wildfire	918	1,011	918	1,134	927	918
New grazing	0	0	193	0	0	0
New mineral/energy development	30	65	131	24	1	13
TOTAL	**1,042**	**1,190**	**2,688**	**2,168**	**980**	**1,006**
Activities that have potential beneficial effects:						
New watershed restoration and fish habitat work	593	42	189	503	504	505
Net potential effect (adverse minus beneficial) effects	449	1,148	2,499	1,665	476	501

Table 94
Net Effects on Water Quality by Decade
(average annual acres)

	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
Decade 1	695	1,148	2,499	1,665	476	501
Decade 2	837	1,228	2,645	1,782	557	619
Decade 3	941	1,225	2,746	1,904	559	726
Decade 4	1,011	1,235	2,847	2,033	559	735
Decade 5	1,085	1,234	2,910	2,258	538	1,026
Total net effect (5 decades)	**4,569**	**6,070**	**13,647**	**9,642**	**2,689**	**3,607**
Relative effect rating	LM	LM	H	M	L	L

Table 95
Projected Increases in Water Yield by Decade
(M acre-feet)

	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
Decade 1	7.0	11.0	15.0	7.0	0	1.7
Decade 2	0.2	4.0	0	0	0	0.5
Decade 3	0	0	0	0	0	0.5
Decade 4	0	3.0	0	0	0	0.5
Decade 5	0	0	0	0	0	0.5

Consequences Other than Cumulative Watershed Impacts

PRF: (Preferred) This alternative represents a low-moderate level of potential adverse impacts on water quality. These effects will result from a moderate level of timber site preparation, large acreage in new roads and trails, moderate new alpine ski area development, and moderate mineral development opportunity. The high level of watershed restoration and stream habitat improvement will offset some of these potential adverse effects on a Forest-wide basis.

CUR: (Current Program) This alternative represents a low-moderate level of relative potential impacts on water quality. These effects will result from a high level of timber site preparation, a low level of new road and trail construction, a moderate level of new alpine ski area development, and a moderate level of opportunity for new mineral development. The moderate level of watershed restoration and fish habitat improvement will offset some of the potential adverse effects on a Forest-wide basis.

RPA: (1980 RPA Program) This alternative represents the highest level of potential adverse impacts on water quality of any alternative. These effects will result from a high level of timber site preparation, a high level of new road and trail construction, a high level of new alpine ski area development, a high level of new grazing, many new open OHV acres, and high-level opportunities for new mineral development. The moderate level of new watershed restoration and fish habitat improvement will do little to offset the potential adverse impacts of commodity production under this alternative.

CEE: (Maximize Cost-Efficiency) This alternative represents a moderate relative level of potential adverse impacts on water quality. These effects will result from a moderate level of timber site preparation, a high level of new roads and trails, a high level of new alpine ski area development, many new open OHV acres, and a moderate level of new mineral development opportunity. The high level of watershed restoration and fish habitat improvement will offest some of these potential adverse effects on a Forest-wide basis.

AMN: (Maximize All Amenities) This alternative represents the lowest level of potential impacts on water quality of any alternative. These effects will result from a low level of timber site preparation, a low level of new roads, a moderate level of new trails, a moderate level of new ski area development, and a low level of opportunity for new mineral development. The high level of watershed restoration and stream habitat improvement will offset most of these adverse effects on a Forest-wide basis.

AMB: (Emphasize Wildlife and Recreation) This alternative represents a very low level of potential adverse effects on water quality. These effects will result from a low level of timber site preparation, a moderate level of new roads and trails, a high level of new alpine ski area development, and a low level of new mineral development opportunity. The high level of watershed and fish habitat improvment will offest most of these potential effects on a Forest-wide basis.

Cumulative Watershed Effects (CWE)

The Inyo National Forest does not have a CWE methodology. A specific CWE assessment was not, therefore, made on the two watersheds of concern (discussed below). The Pacific Southwest Region is currently developing a CWE methodology. When it is available, the Forest will apply the methodology on a project-by-project basis.

Twenty of the twenty-two watersheds on the Forest are fairly stable, experiencing only localized, small-scale water quality problems. The Mammoth Creek-Hot Creek watershed and the South Fork Kern River watershed will be vulnerable to cumulative watershed effects under certain alternatives.

The South Fork of the Kern River will be subject to new timber harvest under CUR, RPA, and CEE. Not only will actual timber site preparation affect water quality, but access into and through the area will improve with construction of a paved road. The amount of vehicle use will increase, with corresponding water quality impacts. In addition, the Monache Meadows area is a potential site for increased cattle grazing with corresponding water quality impacts. Grazing will increase moderately under PRF and CEE; it will increase substantially under RPA. Finally, the area is subject to OHV impacts. Approximately five miles of existing OHV routes are serious erosion problems, and illegal use off established routes is a potential source of additional damage.

The Mammoth Creek-Hot Creek watershed will be subject primarily to the impacts of ski area area development and associated community development. Ski areas and community facilities will increase under all alternatives. The growth will be lowest in AMN; higher in PRF, CUR, AMB, and RPA; and highest in CEE. The lower reaches of Hot Creek are suitable for increased cattle grazing. Grazing will increase moderately under alternatives PRF and CEE, and substantially under the RPA alternative. The RPA and CEE alternatives will introduce high-level timber harvest into this watershed and the impacts of new timber management will be similar to those discussed above for the South Fork of the Kern. However, the cumulative effects will be greater due to the addition of timber and grazing impacts to ski area and community growth. This watershed is also subject to the effects of geothermal development in Lease Block II or on private land. Finally, the potential for impacts in this watershed is greater because considerable acreage within the watershed is privately owned. The Forest Service has little influence over the type of development or methods used and their consequences on water quality.

Cumulative watershed effects in either of the above-mentioned watersheds have the potential to affect municipal water supply quality and resident trout habitat including state-designated wild trout waters in Hot Creek.

The application of BMPs by the Forest and urban development guidelines currently proposed by the Lahontan Water Quality Control Board to the community should mitigate adverse impacts on water quality and could actually result in improved water quality over the long run. Allotment management plans will include stipulations for water quality protection measures in livestock management, and grazing impacts can be monitored using the streambank stability rating system described in Chapter III. When CWE methodologies are available, they will be applied wherever appropriate. In lieu of CWE analysis, non-regenerable acres

have been removed from the suitable timber base and Riparian Area Standards and Guidelines limit streamside disturbance to 5 percent per decade.

WILD AND SCENIC RIVER CANDIDATE

Introduction

Forest activities that could have major effects on wild and scenic rivers include off-highway vehicle use, timber management, and range management. The North Fork of the Kern River and the South Fork of the Kern River have recently been designated by Congress as Wild and Scenic Rivers. The Middle Fork of the San Joaquin is surrounded by wilderness and concentrated recreation areas. This river is unlikely to be affected by off-highway vehicle use, timber management, or range management under any alternative.

Consequences of those activities are assessed in terms of their potential effects on a river's suitability for wild and scenic designation. Although the lead role for evaluating the three candidate wild and scenic river on the Inyo is held by the Sierra National Forests, the management scenario envisioned under alternatives considered by the Inyo National Forest could affect a river's suitability for wild and scenic designation.

WILDERNESS

Introduction

Forest activities that have major effects on wilderness resources include: (1) activities associated directly with wilderness, such as wilderness recommendations, recreational attractions, trails/trailheads, and outfitter-guide opportunities; and (2) activities associated with non-wilderness management and land uses on lands adjoining wilderness, such as developed recreation, timber harvest, and non-wilderness trail construction.

Consequences of these activities are assessed in terms of the wilderness experience provided to users and the effects of Forest activities on wilderness resources. Data sources used for this analysis include approved wilderness management plans for the Hoover, Ansel Adams (formerly Minarets), John Muir, and Golden Trout Wilderness, and the approved environmental assessment for golden trout habitat improvement on the Kern Plateau.

Indicators

1. Overnight developed recreation use
2. Wilderness use
3. New wilderness recommendations
4. Other attractions within wilderness
5. New trails outside wilderness
6. Opportunities for new outfitter-guide services
7. Timber harvest

The amount of day use in wilderness is closely associated with the amount of developed site use on lands within a reasonable distance of wilderness trailhead areas.

Overall wilderness use is an indicator of the degree to which the Forest is meeting projected demand under an alternative. New additions to wilderness would increase overall wilderness recreation opportunities on the Forest in response to increasing demand.

Other wilderness-related attractions include wild and scenic river designation and new trail and trailhead construction. Wild and scenic rivers attract use by virtue of special designation. Trails and trailheads disperse use, increasing use in areas made more accessible and reducing crowding in other areas.

New trail construction outside of wilderness offsets the demand for wilderness day-use, reducing crowding in wilderness and increasing opportunities for solitude.

Outfitter-guide services would increase the opportunity for non-hikers to visit and enjoy the wilderness, while also increasing the potential for conflict between stock users and backpackers.

Timber harvest in the Monache area would entail the construction of a paved, two-wheel drive road into country now accessible only by four-wheel drive. One result would be improved access to wilderness trailheads for the Golden Trout and South Sierra Wildernesses, with a resultant increase in overnight and day use of those wildernesses. Outfitter-guide opportunities and other stock use opportunities would also increase with improved access for horse trailers.

Assumptions

The demand for wilderness use will exceed the supply available before the fifth decade under any alternative. The Inyo does not have enough existing or potential wilderness to meet projected demand if wilderness use is managed within capacity limitations.

Smoke from wildfire could occasionally affect air quality in wilderness; however, smoke management plans will be developed in conjunction with Fire Management Action Plans to minimize this impact, especially on Class I wilderness. The impacts of prescribed burning will be minimized by developing smoke management plans for prescribed fires and by burning only when air quality conditions favor smoke dispersion.

Forest-wide Standards and Guidelines and the Wilderness Management Prescription assure that, under all alternatives, wilderness would be managed to maintain basic wilderness characteristics: natural ecological integrity, natural appearance, opportunities for solitude, and opportunities for primitive recreation.

Consequences Common to All Alternatives

All wildernesses would be managed within established capacity limitations, including the application of trailhead quotas where necessary. All wildernesses would be used to capacity during peak use seasons by the fifth decade.

The administration of legitimate livestock grazing in wilderness and motorized access to private land inholdings represent potential conflicts with the expectations of wilderness users under all alternatives.

Designation of the Middle Fork of the San Joaquin River as a Wild and Scenic River would attract visitors to the Ansel Adams Wilderness under all alternatives.

Thirteen miles of new trail would be constructed in existing wilderness under all alternatives, improving dispersal and resource protection.

Consequences That Vary by Alternative

The following table displays the effects of alternatives on wilderness resources and opportunities.

Table 96
Indicators of Wilderness Consequences that Vary by Alternative
(end of the fifth decade)

	Alternatives					
Indicator	**PRF**	**CUR**	**RPA**	**CEE**	**AMN**	**AMB**
Developed summer recreation use (M RVDs)	2900	1940	2901	2903	1944	2675
Wilderness recreation use (M RVDs)	788	639	771	838	863	837
Recommended wilderness (M acres)	172.6	107.6	0	339.8	510.8	222.7
New trails in recommended wilderness (miles)	36.0	15.0	0	60.0	66.0	56.0
New trails outside wilderness (miles)	180	0	180	180	80	120
Improved road access for timber harvest in Monache	No	Yes	Yes	Yes	No	No
Increased outfitter-guide opportunities	Yes	Yes	No	Yes	Yes	Yes

PRF: (Preferred) A 57 percent increase in developed site use will increase day use in adjacent wildernesses, resulting in more encounters within five miles of trailheads. The areas of greatest impact will be trails originating from the Mammoth Lakes Basin, Reds Meadow, Rock Creek, and Bishop Creek. New developments in the Walker Lake area will increase day use of the Bloody Canyon-Mono Pass trail.

The effects of increased developed recreation use on wilderness will be offset somewhat by an additional 180 miles of trail outside of wilderness. However, the attractions available only in wilderness will continue to attract many day users.

Further Planning Areas proposed for wilderness designation under this alternative total 172,600 acres. The greatest overall increase in wilderness recreation opportunities (due to a combination of large size, relative ease of access, and moderate-to-high wilderness attractions), will be seen in the White Mountains area. Most of the new trail and trailhead facilities will serve that area as well. The Tioga Lake area, while high in attraction, is too small to offer much increased overnight opportunity. Increases will result primarily from day use associated with developed sites in the Tioga Lake area.

The remaining acreage in recommended wilderness will represent a low level of increased wilderness recreation opportunity due to a lack of water, a lack of recreational attractions, difficulty of access, and/or small size.

Timber will not be harvested in the Monache area. Without development of this resource, there will be no new road access or trailhead development for the southern portions of the Golden Trout and South Sierra Wildernesses. Recreation use of these wildernesses will increase, but at a much slower rate than under alternatives with improved access.

Outfitter-guide opportunities will increase due to the new wilderness and associated trails and trailheads in the White Mountains.

CUR: (Current Program) Existing overcrowding by day users will continue within five miles of trailheads, especially on trails out of the Mammoth Lakes Basin, Reds Meadow, Rock Creek, and Bishop Creek areas. This overcrowding will not be expected to increase significantly, as there will be little increase in neighboring developed site use; nor will the pressure be offset elsewhere, as no non-wilderness trails will be developed.

Further Planning Areas proposed for wilderness designation under this alternative total 107,600 acres. The greatest overall increase in wilderness recreation opportunities (due to a combination of large size, relative ease of access, and moderate-to-high wilderness attractions), will be seen in the White Mountains area. Most of the new trail and trailhead facilities will serve that area as well. The Paiute area will represent a low level of increased wilderness recreation opportunity due to a lack of water, a lack of recreational attractions, and difficulty of access. Both recommended wildernesses represent Great Basin ecological types not yet represented by wilderness on the Inyo.

Timber harvest in Monache will increase use in the Golden Trout and South Sierra Wildernesses, but opportunities for trailhead development will be limited by budget.

Construction of new trails in the White Mountains will increase the opportunity for additional outfitter-guide services in this area. Improved access into the Monache area will provide an opportunity for new stock-oriented outfitter-guide services for neighboring wildernesses.

RPA: (1980 RPA Program) A 57 percent increase in developed site use will increase pressure by day users on existing wilderness. Loss of solitude and increased encounters between users will be greatest within five miles of trailheads in the Mammoth Lakes Basin, Reds Meadow, Rock Creek, and Bishop Creek areas. Development of recreation facilities in the Buttermilk area will impact the Horton Lakes trail and, to a lesser extent, the Bishop Creek trailheads. New developments in the Walker Lake area will increase day use of the Bloody Canyon-Mono Pass trail.

Construction of an additional 180 miles of trails outside wilderness will mitigate the increased pressure for day use in wilderness. However, the water and scenic attractions of wilderness will continue to draw day users.

Since no Further Planning Areas are proposed for wilderness, there will be no new wilderness recreation opportunities.

Timber harvesting in Monache will improve access to trailheads for the Golden Trout and South Sierra wildernesses. Trailhead facilities will attract stock users and increase outfitter-guide opportunities in these two wildernesses.

CEE: (Maximize Cost-Efficiency)

A 57 percent increase in developed site use will increase day use in adjacent wildernesses, resulting in more encounters within five miles of trailheads. The areas of greatest impact will be trails originating from the Mammoth Lakes Basin, Red's Meadow, Rock Creek, and Bishop Creek. New developments in the Walker Lake area will increase use of the Bloody Canyon-Mono Pass trail. Developments in the Buttermilk area will affect the Horton Creek trail.

The effects of increased developed recreation use on wilderness will be offset somewhat by an additional 180 miles of trail outside of wilderness. However, the attractions available only in wilderness will continue to attract many day users.

Further Planning Areas proposed for wilderness designation under this alternative total 338,900 acres. The greatest overall increases in wilderness recreation opportunities (due to a combination of large size, relative ease of access, and moderate-to-high wilderness attractions), will be seen in the Coyote Southeast and White Mountains areas. Most of the new trail and trailhead facilities will serve those areas as well.

The Hall area, although very high in wilderness attractions and recreation potential, will represent only moderate increases in wilderness use opportunity;

the area is an established Research Natural Area, and overnight use of the area is prohibited. The Tioga Lake area, while high in attraction, is too small to offer much increased overnight opportunity; increases will result primarily from day use associated with developed sites in the Tioga Lake area.

The Log Cabin-Saddlebag and Laurel-McGee areas will offer moderate increases in wilderness recreation; they include water, scenic values, and destination points, but much of the acreage in each area is steep and inaccessible.

Improved access for timber harvest in the Monache area will increase wilderness use and new trailhead development opportunities in the southern part of the Golden Trout and South Sierra wildernesses.

Opportunities for outfitter-guide services will increase in the South Sierra and Golden Trout wildernesses due to improved access, and in the White Mountains due to new trails and trailheads.

AMN: (Maximize All Amenities) This alternative will not substantially increase developed recreation use on the Forest. Day users originating from campgrounds and private resorts will continue to use wilderness for hiking, fishing and viewing outstanding scenery. However, the pressure on wilderness trails will be lowered as a result of constructing 80 miles of new trails outside wilderness.

Further Planning Areas proposed for wilderness designation under this alternative total 510,800 acres. The greatest overall increases in wilderness recreation opportunities (due to a combination of large size, relative ease of access, and moderate-to-high wilderness attractions), will be seen in the Coyote Southeast and White Mountains areas. Most of the new trail and trailhead facilities will serve those areas as well.

The Hall area, although very high in wilderness attractions and recreation potential, will represent only moderate increases in wilderness use opportunity. The area is an established Research Natural Area, and overnight use of the area is prohibited. The Tioga Lake area, while high in attraction, is too small to offer much increased overnight opportunities. Increases will result primarily from day use associated with developed sites in the Tioga Lake area.

The Log Cabin-Saddlebag and Laurel-McGee areas will offer moderate increases in wilderness recreation; they include water, scenic values, and destination points, but much of the acreage in each area is steep and inaccessible. The remaining acreage in recommended wilderness will represent a low level of increased wilderness recreation opportunity due to a lack of water, a lack of recreational attractions, difficulty of access, and/or small size.

Timber will not be harvested in the Monache area. Without development of this resource, there will be no new road access or trailhead development for the southern portions of the Golden Trout and South Sierra Wildernesses. Recreation use of these wildernesses will increase, but at a much slower rate than under alternatives with improved access.

There will be potential for new outfitter-guide services in the White Mountains wilderness, but not in the Monache area.

AMB: (Emphasize Wildlife and Recreation) This alternative will increase developed site use approximately 44 percent over the next fifty years, resulting in a moderate increase in the number of day users on wilderness trails. Encounters will increase and crowding will result on the first five miles of trail out of trailheads in the Mammoth Lakes Basin, Reds Meadow, Rock Creek, and Bishop Creek areas.

The construction of 120 miles of new trails outside of wilderness will offset some of the effects of increased day use. However, the attractions present only in wilderness will still tend to attract the day user, and will tend to result in the impacts noted above.

Further Planning Areas proposed for wilderness designation under this alternative total 222,700 acres. The greatest overall increases in wilderness recreation opportunities (due to a combination of large size, relative ease of access, and moderate-to-high wilderness attractions), will be seen in the Coyote Southeast and White Mountains areas. Most of the new trail and trailhead facilities will serve those areas as well. The Tioga Lake area, while high in attraction, is too small to offer much increased overnight opportunity; increases will result primarily from day use associated with developed sites in the Tioga Lake area.

The Log Cabin-Saddlebag and Laurel-McGee areas will offer moderate increases in wilderness recreation. They include water, scenic values, and destination points, but much of the acreage in each area is steep and inaccessible. The remaining acreage in recommended wilderness will represent a low level of increased wilderness recreation opportunity due to a lack of water, a lack of recreational attractions, and difficulty of access. The White Mountains and Paiute areas represent Great Basin ecological types not yet represented in wilderness on the Forest.

Lack of timber harvest and improved access in Monache will result in slower increases in use of adjoining wilderness than under those alternatives with timber harvest.

There will be new opportunities for outfitter-guide services in the White Mountains, but not in the Monache area.

WILDLIFE

Introduction

Forest activities that have major effects on wildlife habitat include wildlife, range, recreation, timber, fire and wilderness management and energy development.

The consequences of alternatives on wildlife habitats are the result of land uses, management prescription applications, management Standards and Guidelines, and wildlife habitat improvement. These consequences are measured in terms of habitat capability for Management Indicator Species, and projected animal population numbers. The methodology used to project habitat capability and animal numbers is retained in the planning records.

Data sources for this analysis include wildlife management principles, research and management literature, and habitat capability models developed for selected indicator species.

Indicators

Approximately 400 species of wildlife occupy habitat on the Forest during some stage of their life cycle. A vast array of vegetation components and physical features combine to meet specific wildlife needs. Vegetation type, abundance, seral stage, and distribution are important factors affecting the capability of habitats to support wildlife. The availability of physical features, such as water, snags, rock outcrops, and cliffs are also important wildlife habitat components. Wildlife populations vary in response to changes in habitat capability, which changes in response to Forest activities.

Certain wildlife species and key habitat types were chosen as indicators of the effects of alternatives on wildlife. Harvest, threatened and endangered (T&E), sensitive, and special interest species were chosen on the basis of issues and concerns regarding the species. Key habitats were chosen on the basis of the likelihood that they will be affected by Forest activities. Management Indicator Species (MIS) for those habitats were chosen to represent other species with similar habitat needs.

1. Harvest species: mule deer, blue grouse, sage grouse
2. Threatened and endangered (T&E) species: bald eagle, peregrine falcon
3. Sensitive species: fisher, Sierra Nevada red fox, goshawk, pine marten, great gray owl, spotted owl, Sierra Nevada mountain sheep, wolverine
4. Special interest species: golden eagle, tule elk, prairie falcon, Nelson mountain sheep
5. Riparian areas: yellow warbler
6. Snags: hairy woodpecker, Williamson sapsucker
5. Early-middle seral stages of brush: sage grouse
6. Older seral stages of coniferous forest: goshawk.

Forest activities affecting mule deer include primarily ski area development, timber management, geothermal development, livestock grazing, riparian area protection, and deer habitat improvement.

As most of the deer on the Forest migrate from summer range west of the Sierra Nevada crest to winter range in the Owens and Mono Basins, the very presence of deer on the Forest (and on adjoining BLM deer winter range) is determined by their ability to migrate into the area.

Ski area development and geothermal development are the activities with the greatest potential to affect deer migration routes. Either type of development could both physically obstruct those routes and eliminate or reduce the productivity of vegetation used by migrating animals. Facility development such as ski runs, lifts, and base facilities, geothermal power plants, wellsites, and pipelines; improved access; and concentrated human use will all contribute to these effects.

Timber harvest can also affect habitat for migratory deer, primarily because of the increased human disturbance (including poaching) associated with improved

access. Timber harvest in the Monache area and the red fir forest east of San Joaquin Ridge will have the greatest potential effects on deer populations.

Ski area development and approved geothermal exploration and development in Lease Blocks I and II, has the potential for major cumulative impacts on deer migration. The Buttermilk, Sherwin, and Casa Diablo herds all migrate through the area between Mammoth Lakes and Glass Creek. This area is subject to geothermal and ski area development.

Livestock grazing affects deer habitat capacity where deer and cattle compete for forage, primarily on key deer winter range, and where cattle browse in deer fawning areas, reducing forage and cover needed for fawns and does.

As deer fawning habitat is typically found in riparian areas, any activities that affect riparian condition may affect deer as well. The degree to which watershed improvement work arrests accelerated erosion varies by alternative. The untreated wet meadow acreage subject to continued erosion is an indicator of mule deer fawning habitat capability.

Deer habitat improvement increases forage production and habitat capacity by rejuvenating decadent bitterbrush stands. Improvements on deer winter range are far more important for overall habitat capacity on the Forest than on summer range, as most deer on the Forest spend the summer elsewhere.

Bald eagles and peregrine falcons are not subject to major conflicts with any Forest activities. These species are managed for recovery, and recovery levels will be met for every alternative. Peregrine falcons, a species recently reintroduced to the Forest, are managed to exceed recovery in alternatives with additional reintroductions.

Sierra Nevada mountain sheep are subject to conflicts with domestic livestock and concentrated human use. These conflicts are not major ones, however, and are essentially common to all alternatives. The primary activity affecting this species is the introduction of new herds into historic unoccupied habitat.

Species such as the goshawk, which are dependent on older seral stages of forest, are affected by timber management. Commercial timber lands are managed for maximum wood productivity that is attained in early to middle successional stages. While older stages are less productive in terms of wood, they are extremely productive in terms of wildlife.

Snags or standing dead trees are subject to the effects of timber management and public fuelwood gathering. The public considers snag wood among the most desirable for fuel. Although the taking of snags for that purpose is prohibited, illegal snag cutting occurs wherever lands are accessible by vehicle. The effects of public woodcutting on snag-dependent wildlife will be roughly proportional to the amount of timber harvest, as the size of the timber cut is an indication of improved vehicle access to forested lands.

Riparian areas are extremely important to wildlife, and are subject to many conflicts with Forest activities. Geothermal and hydroelectric development, municipal water use, concentrated recreation use, and livestock grazing all have the potential to affect the amount and condition of riparian habitat. On the other hand, watershed improvement and stream rewatering have the potential

to restore and protect riparian habitat. Although minimum management requirements limit the impacts new activities will have on riparian habitat, losses of wet-meadow riparian habitat due to past overgrazing will continue to some degree unless the full program of watershed improvement is implemented.

Early to middle seral stages of brush are subject to decadence with age. As the amount of decadent brush increases over time, shrub habitat diversity and the diversity of animal species associated with early seral stages decline. Wildfire rejuvenates brush naturally, and vegetation treatment can be used to approximate natural rejuvenation. Acres of wildfire and vegetation treatment are, therefore, indicators of effects on this habitat type.

Assumptions

Effects on indicator species are representative of effects on all native vertebrate species on the Forest.

Species associated with late successional stages of brush and early successional stages of timber are not of concern, since neither stage is expected to be in short supply.

All alternatives include Forest-wide Standards and Guidelines and Management Prescription direction which provide that wildlife habitats will be managed at levels necessary to ensure that viable populations of Management Indicator Species are maintained.

The impacts of ski area development, geothermal development, and timber harvest will depend on the extent of development and the effectiveness of mitigation. Precise development scenarios are impossible to predict at this time. Possible mitigation measures include seasonal road closures, soundproofing of facilities, providing a full-time warden during periods when deer are present, and locating facilities away from known fawning habitat and migration corridors.

The impacts of livestock grazing on deer winter range can be mitigated by limiting or reducing livestock numbers. Impacts on fawning areas can be mitigated by deferring grazing in fawning areas until after the fawning season; or by herding, salting, or otherwise directing livestock movements away from fawning areas.

Habitat capability for riparian area-dependent species and snag-dependent species can be estimated in general terms. The data needed for accurate population estimates of Management Indicator Species for those habitat types is not available at this time.

Threatened and endangered species will be managed in accordance with existing recovery plans and in cooperation with California Department of Fish and Game, the appropriate recovery team, and the U.S. Fish and Wildlife Service.

Wilderness management policy does not currently allow for vegetation management for timber, range, or wildlife purposes. This policy favors species dependent on late seral stages of all vegetation types. Whereas species dependent on early seral stages of brush and on wet meadows will decline, those dependent on old growth forest, snags, and down logs will increase over time.

The sum of the separate factors affecting wildlife, and deer in particular, may in some cases exceed the whole. For example, estimated deer population losses due to the obstruction of migration routes may duplicate those ascribed to competition with livestock on deer winter range, where in fact the deer in both cases are the same deer subject to both impacts. Projected population numbers should be viewed only as rough estimates of the relative effects of alternatives based on the management program for those alternatives.

Consequences Common to All Alternatives

Only the single existing bald eagle winter roosting area will be maintained under all alternatives. No opportunities for increasing bald eagle habitat have been identified. A local bald eagle management plan will be developed and implemented.

At least two pairs of peregrine falcons, representing the recovery level, will be reintroduced under all alternatives. Additional pairs will be reintroduced under alternatives with an amenity emphasis.

Emphasis animals such as Nelson mountain sheep, blue grouse, tule elk, golden eagle, and prairie falcon are subject more to natural ecological processes (such as drought or poor nesting weather), than by Forest management. In addition, any project-level activities that did conflict with the needs of these species will be mitigated under the Forest-wide Standards and Guidelines. For these reasons, potential effects on these species are considered common to all alternatives.

The amount of projected geothermal development under approved environmental documents is common to all alternatives (an estimated six power plants in Lease Blocks I and II north and northeast of Mammoth Lakes). Any geothermal proposals not currently approved will be subject to site-specific environmental analysis and mitigation under all alternatives.

The likelihood of new hydroelectric development is common to all alternatives; there are presently 33 applications for new hydroelectric projects.

Consequences that Vary by Alternative

Tables 97 and 98 display the consequences of alternatives on wildlife. Table 97 displays percent change in habitat capability for the key habitat types (those most likely to be affected by Forest management activities). Table 98 displays animal numbers for those Management Indicator Species for which population estimates can reasonably be made.

Table 97
Habitat Capability for Key Habitats by Alternative
(percent change from 1982 - end of the fifth decade)

	Alternatives					
Indicator Species	PRF	CUR	RPA	CEE	AMN	AMB
Mule deer habitat	-2	-4	-47	-14	+20	+18
Peregrine falcon nesting habitat	0	0	0	0	+100	+100
Sierra Nevada mountain sheep habitat	+22	+22	0	0	+122	+122
Existing old-growth in suitable timber	-27	-91	-92	-86	-38	-59
Snag habitat in suitable timber	0	0	0	0	+30	+30
Early & middle seral stages of brush	-69	-75	-69	-67	-71	-71
Riparian habitat in wet meadows	0	-58	-35	0	0	0

Table 98
Animal Numbers for Management Indicator Species
Based on Habitat Capability
(end of the fifth decade)

		Alternatives					
Indicator Species	1982	PRF	CUR	RPA	CEE	AMN	AMB
Mule Deer*							
(total - M animals)	20.2	19.9	19.6	9.6	17.4	22.6	22.2
(FS - M animals)	12.0	11.8	11.5	5.9	10.3	14.4	14.0
Peregrine falcon (pairs)	2	2	2	2	2	4	4
Sierra Nevada mountain sheep	300	550	550	450	550	1000	1000
Goshawk pairs in suitable timber	15	15	15	9	9	15	15
Sage grouse	1500	1500	750	1500	1500	990	1200

* Total deer include those that migrate across the Forest but neither summer nor winter on Forest lands; FS deer are those that summer and/or winter on the Forest.

PRF: (Preferred)

Mule Deer: Decisions regarding new ski area development will be made through site-specific analyses and environmental documents.

The Monache herd will not be adversely affected under this alternative, as there will be no timber harvest or improved access into the Monache area. The type and amount of recreation use in that area will not change much over fifty years.

The relationship of deer and livestock on winter range and fawning areas will change very little from the base year situation. Increased livestock grazing will not occur.

Deer habitat improvement on key winter range will somewhat offset losses on a Forest-wide basis. The net change in Forest-wide mule deer habitat capability will be a two percent loss.

Old Growth and Snags: In areas that are under the Timber Prescriptions 10 percent of the acreage will be managed for old growth seral stage characteristics. A portion of this can be met using sites that are unsuitable for timber management due to factors such as access, slope and visual constraints. These stands are interspersed among areas that contain suitable timber. The remainder of the old growth allocation would be taken from the suitable timber component.

On the Inyo there are approximately 75,200 acres in the timber component that are allocated for harvest and designated as "suitable". To meet old growth allocation requirements, approximately 4,060 acres will be managed for old growth characteristics. The remainder of the old growth can be met by allocating approximately 6,000 acres of timber lands that will not be harvested for timber but are interspersed in the 75,200-acre base.

Decreases in old growth will occur primarily in lodgepole pine and mixed red fir/Jeffrey pine stands within areas extensively managed for timber. Stands of old growth Jeffrey pine have already been liquidated for the most part as a result of historic logging. Declines in old growth red fir stands are not anticipated as these areas will not be managed for timber production during this planning period.

An old growth allocation plan will be developed that provides direction for the long-term allocation of stands managed for old growth characteristics within areas managed for timber production.

Riparian Areas: Riparian areas will be managed with an emphasis on recovering these areas. Meadow restoration work will be done on 23,500 acres and livestock managed in a way to improve riparian dependent vegetation communities.

Early - Mid Successional Brush: The habitat capability of early and mid-successional brush will continue to decrease over the planning period. Approximately 11,500 acres will be treated for range and wildlife purposes. These will be areas that have existing perennial herbaceous understories to ensure success of vegetation treatments.

Species dependent on early-mid successional stages will continue to decline. Wildfires will burn an additional 53,190 acres. In most cases these areas will be invaded by undesirable shrub or annual species and will not be beneficial to early-mid successional shrub-dependent species.

Methods of improving shrub habitat will be explored and tested to reverse trends in these habitats. These will be coordinated with other state and federal agencies and interested organizations.

CUR: (Current Program)

Mule Deer: Ski area development under this alternative calls for 8,000 SAOT beyond full development of Mammoth and June Mountains. The specific area (or areas) on which added capacity will be generated is not specified. If development occurred in the Sherwin and San Joaquin areas, migration routes for the Buttermilk, Sherwin, and Casa Diablo herds will be impacted. As the same general area will also include timber harvest and geothermal development for Lease Blocks I and II, deer populations could decline by as many as 2,200 animals. If, however, developments avoided migration corridors and strict mitigation were applied, that loss could be considerably lower. Decisions regarding new ski area development will be made through site-specific analyses and environmental documents.

The Monache herd will be affected by timber harvest and improved access with corresponding increases in recreation use. An estimated 17 percent of the Monache herd could be lost without proper mitigation. Strict mitigation measures could reduce the loss of deer to 4 percent below current levels.

The relationship of deer and livestock on winter range and fawning areas will change very little from the base year situation. Increased livestock grazing will occur only to the degree compatible with deer habitat needs.

Deer habitat improvement on key winter range will only slightly offset habitat losses elsewhere, as the budget limitation of this alternative will limit the amount of improvement work accomplished.

Watershed improvement work will also be limited. Approximately 21,500 acres of wet meadow habitat could be lost or degraded over 50 years due to damage from past grazing. Consequences on deer fawning habitat for the Monache herd could be severe.

The net change in mule deer habitat capability will be a four percent reduction Forest-wide.

Old Growth and Snags: The Forest will maintain no suitable timber in older seral stages. However, not all of the remaining suitable timber will be reduced to earlier seral stages in the first fifty years. Approximately 5,000 acres of existing old growth will remain by the end of the fifth decade, representing a 91 percent reduction in habitat capability relative to 1982. The greatest reduction will occur in red fir stands that have not yet been harvested and in the Jeffrey pine forest due to the large acreage managed.

The impacts of timber harvest on old growth-dependent wildlife will be mitigated by leaving snags in suitable timber to meet 40 percent of the natural snag-dependent wildlife density and by limiting the size of openings to 20 acres in size or smaller. However, improved access will substantially increase the likelihood of illegal snag removal by public fuelwood gatherers.

Riparian Areas: Riparian habitat capability in wet meadows will decline 58 percent due to continuing accelerated erosion on 21,500 acres. A more detailed discussion is found under the heading of Riparian Areas.

Early - Mid Successional Brush: The habitat capability of early and mid-successional brush will decrease 75 percent by the fifth decade. Approximately 85,600 acres of brush will be treated for range and wildlife purposes. Another 52,900 acres of land, most of it brush, will be burned by wildfire. As the treated and burned acres will represent the only early and mid-successional brush by the fifth decade, wildlife dependent on those seral stages will be expected to decline.

RPA: (1980 RPA Program)

Mule Deer: Ski area development under this alternative calls for the development of the Sherwin, Minaret Summit, and Mammoth Knolls potential ski areas. The red fir and Jeffrey pine forests will be managed for maximum timber production. The same general area will also include geothermal development for Lease Blocks I and II. As migration routes for the Buttermilk, Sherwin, and Casa Diablo herds will be impacted, deer populations could decline by as many as 2,200 animals. The extent of development and intensified management found in this alternative will be difficult to mitigate.

The Monache herd will be affected by high-level timber harvest and improved access with corresponding increases in recreation use. An estimated 17 percent of the Monache herd could be lost without proper mitigation; strict mitigation measures could reduce the loss of deer to 4 percent below current levels.

The relationship of deer and livestock on winter range and fawning areas will change considerably from the base year situation. Livestock grazing will increase on deer winter range, displacing wildlife. There will be no provision for mitigating livestock impacts on fawning areas.

Watershed improvement work will be limited. Approximately 13,600 acres of wet meadow habitat could be lost or degraded over fifty years due to damage from past grazing. Consequences on deer fawning habitat, especially for the Monache herd, could be severe.

The net effect of this alternative on Forest-wide deer habitat capability will be a 47 percent reduction. There is no way of meeting the RPA goal for mule deer habitat with the intensity of commodity production found in this alternative.

Old Growth and Snags: The Forest will maintain no suitable timber in older seral stages; however, not all of the remaining suitable timber will be reduced to earlier seral stages in the first fifty years. Approximately 4,270 acres of existing old growth will remain by the end of the fifth decade, representing a

92 percent reduction in habitat capability relative to 1982. The greatest reduction will occur in red fir stands that have not yet been harvested and in the Jeffrey pine forest due to the large acreage managed.

The impacts of timber harvest on old growth wildlife will be mitigated by leaving snags in suitable timber to meet 40 percent of the natural snag-dependent wildlife density and by limiting the size of openings to 40 acres in size or smaller. However, much-improved access will dramatically increase the likelihood of illegal snag removal by public fuelwood gatherers.

Riparian Areas: Riparian habitat capability in wet meadows will decline 65 percent due to continuing accelerated erosion on 13,600 acres of wet meadow. Additional impacts on riparian vegetation will result from major increases in recreation and livestock grazing. A more detailed discussion is found under the heading of Riparian Areas.

Early - Mid Successional Brush: The habitat capability of early and mid-successional brush will decrease 69 percent by the fifth decade. An estimated 118,500 acres of brush will be treated for range and wildlife purposes and another 53,190 acres of land, most of it brush, will be burned by wildfire. As the treated and burned acres will represent the only early and mid-successional brush by the fifth decade, wildlife dependent on those seral stages will be expected to decline.

CEE: (Maximize Cost-Efficiency)

Mule Deer: Ski area development under this alternative calls for full development of identified potential, including the Sherwin, Minaret Summit, Mammoth Knolls, San Joaquin, and White Wing areas. Under this development scenario, migration routes for the Buttermilk, Sherwin, and Casa Diablo herds will be impacted. As the same general area will also include timber harvest and geothermal development for Lease Blocks I and II, deer populations could decline by as many as 2,200 animals. The extent of development projected under this alternative will be difficult to mitigate.

The Monache herd will be affected by timber harvest and improved access with corresponding increases in recreation use. An estimated 17 percent of the Monache herd could be lost without proper mitigation. Strict mitigation measures could reduce the loss of deer to 4 percent below current levels.

The relationship of deer and livestock on winter range and fawning areas will change very little from the base year situation. Increased livestock grazing will occur only to the degree compatible with deer habitat needs.

Deer habitat improvement on key winter range will only slightly offset habitat losses to timber, skiing, and geothermal production on the north half of the Forest; if migration routes were substantially blocked, improvements on winter range will have a negligible beneficial effect.

Full implementation of watershed improvement in the Golden Trout Wilderness will protect wet meadows and associated fawning habitat for the Monache herd.

The net effect of this alternative will be a 14 percent reduction in Forest-wide deer habitat capability.

Old Growth and Snags: The Forest will maintain no suitable timber in older seral stages; however, not all of the remaining suitable timber will be reduced to earlier seral stages in the first 50 years. Approximately 7,600 acres of existing old growth will remain by the end of the fifth decade, representing a 86 percent reduction in habitat capability relative to 1982. The greatest reduction will occur in red fir stands that have not yet been harvested and in the Jeffrey pine forest due to the large acreage managed.

The impacts of timber harvest on old growth wildlife will be mitigated by leaving snags in suitable timber to meet 40 percent of the natural snag-dependent wildlife density and by limiting the size of openings to 40 acres in size or smaller. However, improved access will substantially increase the likelihood of illegal snag removal by public fuelwood gatherers.

Riparian Areas: Riparian habitat capability in wet meadows will not decline, as the full watershed improvement program will have been implemented. There could, however be impacts on riparian vegetation associated with major increases in recreation use. A more detailed discussion is found under the heading of Riparian Areas.

Early-Mid Successional Brush: The habitat capability of early and mid-successional brush will decrease 67 percent by the fifth decade. An estimated 116,600 acres of brush will be treated for range and wildlife purposes, and another 64,500 acres of land, most of it brush, will be burned by wildfire. As the treated and burned acres will represent the only early and mid-successional brush by the fifth decade, wildlife dependent on those seral stages will be expected to decline.

AMN: (Maximize All Amenities)

Mule Deer: Ski area development under this alternative calls for no additional ski area capacity beyond full development of Mammoth and June Mountains. Neither will the red fir forest east of San Joaquin Ridge be harvested. Geothermal development will, however, be projected for Lease Blocks I and II; and timber management will continue in the Jeffrey pine forest west of U.S. 395. Although migration routes for the Buttermilk, Sherwin, and Casa Diablo herds could be affected by these activities, developments could probably be located to avoid migration corridors and strict mitigation could be applied to minimize impacts.

The Monache herd will not be adversely affected under this alternative, as there will be no timber harvest or improved access into the Monache area. The type and amount of recreation use in that area will not change much over fifty years.

Livestock will be removed from key deer winter range and grazing will be delayed in key fawning areas, improving habitat capability for deer. Deer habitat improvement on key winter range will further enhance the capability of those lands.

Watershed improvement work will be fully implemented, leaving no wet meadow habitat vulnerable to accelerated erosion and protecting deer fawning habitat for the Monache herd.

The net effect of this alternative will be a 20 percent increase in deer habitat capability, meeting the RPA goal for mule deer.

Old Growth and Snags: The Forest will maintain 30 percent of suitable timber in older seral stages. Approximately 33,200 acres of existing old growth will remain by the end of the fifth decade, representing a 38 percent reduction in habitat capability relative to 1982. This reduction will occur primarily in the Jeffrey pine forest.

The impacts of timber harvest on old growth wildlife will be further mitigated by leaving snags in suitable timber to meet 100 percent of the natural snag-dependent wildlife density and by limiting the size of openings to 20 acres in size or smaller. Although improved access will slightly increase the likelihood of illegal snag removal by public fuelwood gatherers, that impact will be relatively low under this alternative.

Riparian Areas: Riparian habitat capability in wet meadows will not decline under this alternative. The lack of increased recreation and reductions in grazing will further protect riparian areas from potential impacts. A more detailed discussion is found under the heading of Riparian Areas.

Early-Mid Successional Brush: The habitat capability of early and mid-successional brush will decrease 71 percent by the fifth decade. An estimated 111,300 acres of brush will be treated for range and wildlife purposes, and another 48,150 acres of land, most of it brush, will be burned by wildfire. As the treated and burned acres will represent the only early and mid-successional brush by the fifth decade, wildlife dependent on those seral stages will be expected to decline.

AMB: (Emphasize Wildlife and Recreation)

Mule Deer: Ski area development under this alternative calls for increased capacity on the Minaret Summit, Mammoth Knolls, and White Wing potential ski areas. As the same general area will also include modified timber harvest and geothermal development for Lease Blocks I and II, deer populations could decline. Although migration routes for the Buttermilk, Sherwin, and Casa Diablo herds could be affected, potential losses will be reduced by locating developments away from migration corridors and applying strict mitigation measures to all activities.

The Monache herd will not be adversely affected by this alternative. There will be no timber harvest or improved access in that area. The type and amount of recreation use will be expected to remain fairly constant.

As livestock will be removed from key deer winter range and grazing will be delayed in fawning areas, deer habitat capability will increase. Deer habitat improvement on key winter range will further enhance habitat quality.

Watershed improvement work will be fully implemented, eliminating the wet meadow acreage subject to accelerated erosion and protecting deer fawning habitat for the Monache herd.

The net effect of this alternative will be an 18 percent increase in deer habitat capability Forest-wide.

Old Growth and Snags: The Forest will maintain 20 percent of suitable timber in older seral stages; however, not all of the remaining suitable timber will be reduced to earlier seral stages in the first fifty years. Approximately 22,140 acres of existing old growth will remain by the end of the fifth decade, representing a 59 percent reduction in habitat capability relative to 1982. The reduction will occur mainly in the Jeffrey pine forest and in red fir stands east of San Joaquin Ridge.

The impacts of timber harvest on old growth wildlife will be mitigated by leaving snags in suitable timber to meet 100 percent of the natural snag-dependent wildlife density and by limiting the size of openings to twenty acres in size or smaller. However, moderately improved access will increase the likelihood of illegal snag removal by public fuelwood gatherers.

Riparian Areas: Riparian habitat capability in wet meadows will not decline, as full watershed improvement will be implemented. The potential impacts of increased recreation on riparian areas will be moderately high. The potential impacts of livestock will decline. A more detailed discussion is found under the heading of Riparian Areas.

Early-Mid Successional Brush: The habitat capability of early and mid-successional brush will decrease 71 percent by the fifth decade. An estimated 109,000 acres of brush will be treated for range and wildlife purposes, and another 51,390 acres of land, most of it brush, will be burned by wildfire. As the treated and burned acres will represent the only early and mid-successional brush by the fifth decade, wildlife dependent on those seral stages will be expected to decline.

MITIGATION OF 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 ensure that National Forest 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 (EIS Chapter II).

2. Timber Policy Requirements (EIS Chapter II).

3. Minimum Implementation Requirements (EIS Chapter II).

4. Forest-wide Standards and Guidelines (summary in EIS Chapter II; full detail in Plan Chapter IV).

5. Management Prescriptions (summary in EIS Chapter II; full detail in Plan Chapter IV).

Mitigation of adverse impacts will also be developed on a case-by-case basis for individual projects.

ADVERSE IMPACTS THAT CANNOT BE AVOIDED

Some adverse consequences cannot be avoided despite the application of mitigating measures. The magnitude of such impacts varies with the emphasis of the alternative.

Air quality: Smoke from wildfires and prescribed fires will have temporary and localized effects on visibility regardless of mitigation. Although geothermal emissions will be moderated as much as technically possible, complete control will not be possible.

Cultural resources: Wherever roads are built and access improves, the amount of dispersed recreation will increase, along with increased chances that artifacts will be removed or cultural sites damaged.

Diversity: Seral stage diversity will decline on range lands, suitable timber lands, and in wilderness. Vegetation on rangelands will continue to mature. Vegetation on suitable timber lands will shift toward earlier seral stages and vegetation in wilderness will shift toward older seral stages as wildfires will be suppressed and prescribed burning will be limited. Illegal snag cutting by the public will be impossible to control completely.

Fish: New hydroelectric projects will reduce fish habitat somewhat wherever they are developed. Recreation, grazing, road construction, and other activities that increase sedimentation will affect the quality of associated fish habitat.

Minerals: Wilderness and mineral withdrawals will curtail opportunities for mineral exploration and development.

Protection: Any increase in human use of the Forest will increase the risk of man-caused fire. Any increase in the use of motorized equipment or energy transmission lines will increase the risk of operational fires. Any increase in the number of facilities or size of communities will increase the value of property at risk from fire.

Recreation: The potential for conflict between recreationists and other Forest users will increase wherever both types of use increased.

Sensitive plants: Some disturbance of sensitive plant habitat will be unavoidable due to increasing human use, improved access, and increases in land-disturbing developments and activities.

Visual quality: Energy developments and alpine ski areas, though designed to minimize visual impacts, will contrast noticeably with the natural landscape and seriously impair visual quality.

Watershed (soil and water): Any kind of construction, vegetation manipulation, or other land disturbance will have at least temporary and localized effects on the soil. If bodies of water were nearby, effects on water quality will also be expected. Roads, trails, and other areas maintained free of vegetation will be constant potential sites of erosion and sources of sediment. Soil in the areas of sheep bedding grounds will be compacted, and vegetation removed. OHV use in open areas and alpine ski area development will reduce vegetation, increase erosion, and affect water quality (where water is nearby) regardless of preventive measures.

Wildlife: The most significant unavoidable consequences of any alternative on wildlife will be the disturbance created by increasing human use and the loss of habitat to various kinds of development.

Wildlife habitat effectiveness will be lost on (and immediately surrounding) the site of any mineral, energy, ski area, recreation site, road, trail, or other development.

Livestock are more likely to compete with wildlife in riparian areas as the intensity of range use increases.

RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

INTRODUCTION

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 resource, or recreation as a use of the water resource.

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 assessed for cumulative and long-term effects with the perspective that each generation holds the environment in trust for succeeding generations. The production of commodities while maintaining long-term productivity is an integral aspect of public land management. Management decisions must, therefore, be based ultimately on the capability of the land rather than the urgency of short-term needs. The quality of life for future generations will be determined in part by the continuing productivity of public lands.

INDIVIDUAL RESOURCE DISCUSSIONS

Although new hydroelectric development will increase energy production to a degree considered important in the short-term (given the current emphasis on national energy self-sufficiency), it will have significant long-term effects on the soil resource, hydrologic characteristics of affected streams, the amount and condition of riparian vegetation, the amount and condition of fish habitat, and the recreational appeal of the immediate area.

Mineral development represents an important but temporary gain, whether measured in years or decades. The effects on soil productivity if topsoil is lost and hydrologic features if springs or seeps are involved are, though typically limited in extent, long in duration.

Vegetation rejuvenation or type conversion may result in an initial loss of soil. Over the long term, however, soil loss will be lower than if the land were untreated because vegetative growth will be denser in rejuvenated stands than in decadent ones.

OHV use in the short-term affects the long-term productivity of the soil by removing vegetation and exposing soil to erosion.

Fire suppression minimizes short-term vegetation losses to fire. However, protected stands tend to become overmature and unproductive, with increased chances of being lost to natural mortality by insects and disease in the long run. The overall loss of vegetative diversity is most significant in wilderness, where widespread prescribed burning is not an acceptable management tool.

The removal of timber from the managed timber base will entail the loss of forested habitat in the short term, but will improve the overall potential health, vigor, and productivity of the forest in the long term. On the other hand, if departure from the even-flow policy were permitted to meet timber output objectives under a given alternative, the long-term sustained yield of the Forest will be lowered.

IRREVERSIBLE OR IRRETRIEVABLE COMMITMENT OF RESOURCES

INTRODUCTION

Irreversible commitments of resources occur when lost opportunities or depleted resources cannot be recovered. Examples of irreversible commitments are mining, major road construction, and the disturbance of cultural and historical sites.

Irretrievable commitments refer to opportunities for the production or use of a resource that are foregone for a period of time because the land is managed with an emphasis on competing or conflicting resources. Examples of irretrievable commitments are the loss of fuelwood, range forage, or developed recreation opportunities because of management to enhance wildlife habitat values.

IRREVERSIBLE COMMITMENTS

Increased dispersed recreation use and vegetation treatment could result in irreversible losses of cultural and historical resources that might otherwise remain undisturbed.

The loss of riparian vegetation to new hydroelectric development will be irreversible if the soil and hydrologic characteristics of the riparian zone were permanently altered.

Geothermal resources are thought to be depletable, and their extraction irreversible. Once the reservoir of hot stream is tapped, it has a given (though not easily predictable) life span.

Mineral extraction is an irreversible commitment of the mineral resource.

Sheep bedding grounds, roads, watering areas, geothermal well pads, and other facilities developed on suitable range lands represent an irreversible loss of forage for the duration of their existence.

OHV use could irreversibly affect soil productivity through the direct, continuing disturbance of motor vehicles.

The structures and other facilities associated with community growth irreversibly affect soil and water, wildlife, recreation, and the natural appearance of the landscape.

IRRETRIEVABLE COMMITMENTS

Lands dedicated to energy development represent irretrievable commitments during their period of operation. Most other uses will come into conflict with energy production on a given acre of land. New hydroelectric projects as proposed will conflict with fish habitat, riparian values, and recreation. Geothermal development will conflict with recreation, timber harvest, and grazing. Wind farms will conflict with recreation and grazing. All three types of energy development will preclude the management of the area for a high level of visual quality.

The loss of opportunties to mineral development is irretrievable during the period of mineral activity. Virtually no other resources can coexist on-site with an active mineral operation.

The establishment of concentrated recreation areas commits certain lands to management with a recreation emphasis. If the maintenance of developed recreation sites is deemphasized, those sites and associated opportunities can be irretrievably lost over the long term. Alpine ski areas represent an irretrievable loss of wildlife habitat, developed summer recreation site potential, and timber production potential. In-place amenity values (soil, water, and visual quality) will also be foregone.

Soil productivity will be irretrievably lost on those lands occupied by new roads.

Intensive timber management will trigger irretrievable losses in the amount and distribution of old growth forested habitat on suitable timber lands.

Visual Quality Objectives commit certain lands to a high degree of apparent naturalness, precluding or modifying timber, energy, and alpine skiing management for as long as the objectives are applied.

Wilderness designation irretrievably removes affected lands from most kinds of commodity production and from management activities that will alter natural ecological processes. Opportunities for mineral and energy development, motorized recreation, and shrub rejuvenation could represent significant losses.

POSSIBLE CONFLICTS WITH OTHER LAND USE PLANS

There are no known conflicts with the plans or policies of the following cooperating or affected agencies:

- Bureau of Land Mangement, Bishop Resource Area
- Bureau of Land Management, Caliente Resource Area
- Bureau of Land Mangement, Ridgecrest Resource Area
- Bureau of Land Management, Stateline-Esmeralda Resource Area
- U.S. Fish and Wildlife Service, Sacramento
- Counties of Inyo, Mono, Tulare, Madera, and Fresno, California
- Counties of Mineral and Esmeralda, Nevada
- City of Los Angeles, Department of Water and Power, Bishop.

The planning alternatives vary in their potential for conflict with population goals in deer herd management plans developed by the California Department of Fish and Game. Any reduction in deer numbers will represent a conflict, as all deer herd plans call for maintenance of existing populations as a minimum goal. Some deer herd plans call for increased populations; the goals of those plans conflict with all but the most amenity-oriented alternatives.

The Inyo National Forest regularly coordinates its planning efforts with the counties and the City of Los Angeles in an effort to maintain compatibility of uses between public and private land. Where private lands are dispersed and intermingled with the Forest, National Forest needs usually prevail. Near communities, the Forest modifies uses as practicable in response to local public needs.

ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL

INTRODUCTION

With the national emphasis on energy conservation as well as on greater production, Forest management activities and energy programs have become major concerns, meriting explicit consideration. The objective of this evaluation is to provide energy-related considerations on which Forest planning alternatives can be assessed and compared. The following analysis

provides a means for determining the net energy balance of Forest-based resources. The net energy balance is the difference between the energy produced and energy expended in utilizing a Forest resource or service.

Energy yields considered in this evaluation include direct power generation from hydroelectric power plants, wind farms, and photovoltaic cells (cells that convert sunlight into direct electrical current); fuelwood; and red meat (including game) production.

Energy consumption includes the energy required to produce and utilize Forest resources and services. Energy consumption calculations include the energy content of fuels consumed for wildfire suppression, recreational travel, work-related travel, performing work, operation of ski lifts, geothermal exploration, mineral extraction, and road construction and maintenance operations.

In the first decade, all alternatives consume more energy than they yield. Yield/consumption ratios vary from 0.38:1 to 0.46:1.

It is presumed that geothermal power will not be produced until the second decade of the planning period, so no yields are displayed in this analysis. However, considerable energy is consumed in the first decade for geothermal exploration. The energy yield/consumption ratios after geothermal power is on line will depend upon how large the geothermal resource is, and how much is developed on the Forest. Table 99 provides a comparative summary of energy yield/consumption ratios by alternative in the first decade.

Table 99
Energy Balance by Resource Group and Planning Activity
(first decade - billion BTUs)

Action	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
Recreation						
Consumption	23473.0	25791.0	23135.0	22197.0	21680.0	24942.0
Yield	0.3	0.3	0.3	0.3	0.3	0.3
Timber						
Consumption	2348.0	2622.0	3192.0	2440.0	1963.0	2348.0
Yield	1112.0	1242.0	1512.0	1156.0	930.0	1112.0
Fuelwood						
Consumption	152.0	193.0	174.0	179.0	114.0	117.0
Yield	1048.0	1547.0	1394.0	1440.0	911.0	942.0
Range						
Consumption	65.0	39.0	55.0	70.0	39.0	41.0
Yield	83.0	83.0	97.0	90.0	82.0	87.0
Energy						
Hydroelectric						
Consumption	0	0	0	0	0	0
Yield	8895.0	8895.0	8895.0	8895.0	8895.0	8895.0
Wind						
Consumption	0	0	0	0	0	0
Yield	850.3	0	850.3	850.3	850.3	850.3
Photovoltaic						
Consumption	0	0	0	0	0	0
Yield	0.1	0.1	0.1	0.1	0.1	0.1
Locatable Minerals						
Consumption	1812.0	1812.0	1812.0	1812.0	1812.0	1812.0
Yield	0	0	0	0	0	0
Geothermal Exploration						
Consumption	323.6	323.6	190.7	323.6	190.7	190.7
Yield	0	0	0	0	0	0
Roads						
Consumption	222.0	41.0	284.0	163.0	91.0	211.0
Yield	0	0	0	0	0	0
Fire Management						
Consumption	115.0	115.0	115.0	115.0	115.0	115.0
Yield	0	0	0	0	0	0
TOTAL						
Consumption	28792.6	30936.6	28957.7	27299.6	26004.7	29776.7
Yield	12357.7	11767.4	12748.7	12431.7	11668.7	11886.7
NET ENERGY BAL.	**16434.9**	**19169.2**	**16209.0**	**14867.9**	**14336.0**	**17890.0**
Yield/Cons. Ratio	**0.43:1**	**0.38:1**	**0.44:1**	**0.46:1**	**0:45:1**	**0.40:1**

V

LIST OF PREPARERS

CHAPTER V. LIST OF PREPARERS

AMBROSE, MARY

Education: B.S. Landscape Architecture

Experience: Forest Service (8 yr.)

Forest Planning Responsibilities: Graphic art direction; document design and layout; photo posterization; and map production

ALBERT, CARROLL

Education: B.A., M.A. Biology

Experience: Private industry (1 yr.); National Park Service (3 yrs.); Forest Service (6 yr.)

Forest Planning Responsibilities: Biological Planner on the Land Management Planning Core Team from September 1983; Sensitive Plant AMS; FORPLAN input for wildlife

ARASIM, JIM

Education: B.S. Forestry

Experience: Forest Service (25 yr.)

Forest Planning Responsibilities: Management Team review (District Ranger); management area descriptions and direction

BRAMLETTE, BILL

Education: B.S. Forestry, M.S. Wildland Recreation Management

Experience: Forest Service (10 yrs.)

Forest Planning Responsibilities: Management Team review (District Ranger); environmental consequences for roadless area evaluation (EIS Appendix C)

CHANDLER, WAYNE

Education: B.S.F. Forest Management; post-baccalaureate study in logging engineering and silviculture

Experience: Forest Service (18 yrs.)

Forest Planning Responsibilities: Management Team review (Forest Timber and Fire Officer); Timber, Pest Management, and Protection AMSs; technical EIS/Plan input for timber, pest management, and protection

COOPER, JIM

Education:	B.A. Biology; M.S. Fisheries
Experience:	Montana Fish & Game (4 yrs.); Bureau of Land Management (1 yr.); Forest Service (14 yrs.)
Forest Planning Responsibilities:	Management Team review (Forest Staff Officer for Fish, Wildlife, Watershed and Range)

DE GRAFF, ERNIE

Education:	A.B. Wildlife Management; B.S. Forest Management
Experience:	U.S. Fish & Wildlife Service (6 mos.); Forest Service (22 yrs.)
Forest Planning Responsibilities:	Wilderness AMS; Dispersed Recreation AMS; technical EIS/Plan input for wilderness; FORPLAN input for wilderness and recreation

DENNIS, SAM

Education:	B.S. Natural Resource Management
Experience:	County of San Diego (3 yrs.); State of Oregon (4 yrs.); Bureau of Land Management (2 yrs.); Forest Service (5 yrs.)
Forest Planning Responsibilities:	Assistant Forest Planner on the Land Management Planning Core Team; data base manager

DENTON, KEN

Education:	B.S. Natural Resources; post-baccalaureate study in forestry
Experience:	Forest Service (15 yrs.)
Forest Planning Responsibilities:	Management Team review (District Ranger); FORPLAN input for timber; management area descriptions and direction.

FELANDO, TOM

Education:	B.A. Chemistry; post-baccalaureate study in watershed management
Experience:	Bureau of Land Management (1 yr.); U.S. Army Corps of Engineers (2 yrs.); Forest Service (7 yrs.)
Forest Planning Responsibilities:	Water AMS; technical EIS/Plan input for water and air quality; FORPLAN input for watershed improvement

FREEMAN, BARRIE

Education:	B.S. Business Management; B.S.F. Forest Management
Experience:	Forest Service (20 yrs.)
Forest Planning Responsibilities:	Management Team review (Acting Timber Management Officer); technical EIS/Plan input for timber

GALLEGOS, JUAN

Education:	B.S. Soils; B.A. History
Experience:	Soil Conservation Service (6 yrs.); Forest Service (5 yrs.)
Forest Planning Responsibilities:	Soils AMS; technical EIS/Plan input for soils and watershed

GARDINER, PAM

Education:	B.A. Humanities; M.A. Education; post-baccalaureate study in biology
Experience:	High school teaching (2 yrs.); college administration (4 yrs.); Forest Service (8 yrs.)
Forest Planning Responsibilities:	Writer-editor on Land Management Planning Core Team; technical EIS/Plan input for research natural areas

GIFFEN, RALPH

Education:	B.S., M.A. Biology, post-graduate study in range and soils
Experience:	Forest Service (11 yrs.); Soil Conservation Service (6 mos.); Moorhead State College (2 yrs.)
Forest Planning Responsibilities:	Technical EIS/Plan input for range management

HAMLIN, ROBIN

Education:	B.S. Wildlife Management
Experience:	Forest Service (5 yrs.)
Forest Planning Responsibilities:	Forest alternative development; ID Team representing wildlife and riparian areas

HARVEY, HEATHER

Education:	B.S. Business; M.S. Forestry; Ph.D. Forestry
Experience:	Private industry (3 yrs.); State of Virginia (7 yrs.); Forest Service (8 yrs.)
Forest Planning Responsibilities:	Land Management Planning Officer from May 1987.

KRESKE, DIORI

Education:	B.A. Earth Science; M.A. Environmental Planning
Experience:	U.S. Navy (4 yrs.); U.S. Geological Survey (2 yrs.); Forest Service (3 yrs.)
Forest Planning Responsibilities:	Management Team review (Forest Geologist) through September 1983; Geology and Leasable Minerals AMSs

MARTIN, CARL

Education:	A.A. Recreation Management
Experience:	Forest Service (20 yrs.)
Forest Planning Responsibilities:	Alpine Skiing AMS

MARTIN, DENNIS

Education:	B.S. Forest Management; post-baccalaureate study in public administration
Experience:	Private industry (1 yr.); Forest Service (21 yrs.)
Forest Planning Responsibilities:	Management Team review (Forest Supervisor)

MCALISTER, DEAN

Education:	B.S. Agriculture (Landscape Architecture)
Experience:	Landscape architect, private and municipal practice (4 yrs.); Forest Service (14 yrs.)
Forest Planning Responsibilities:	Management Team review (District Ranger); management area descriptions and direction

MCCARTHY, CLINT

Education:	M.S. Wildlife; B.S. Wildlife
Experience:	Bureau of Land Management (1 yr.); Forest Service (7.5 yrs.)
Forest Planning Responsibilities:	Biological Planner on the Land Management Planning Core Team from March 1982-August 1983; Wildlife AMS; technical EIS/Plan input for wildlife

MCLAUGHLIN, JIM

Experience:	Forest Service (18 yrs.)
Forest Planning Responsibilities:	Management Team review (Acting Forest Fire Management Staff Officer); technical EIS/Plan input for protection.

MCLEAN, VERNON

Education:	B.S. Geology
Experience:	Forest Service (14 yrs.)
Forest Planning Responsibilities:	Technical EIS/Plan input for geology and leasable minerals

MILLER, BRIAN

Education:	B.A. Botany, M.A. Biology/Plant Ecology
Experience:	College and High School Teacher (8 yrs.); Forest Service (17 yrs.)
Forest Planning Responsibilities:	Technical EIS/Plan input for sensitive plants

NORTON, DAVE

Education:	B.S. Mining Engineering
Experience:	Forest Service (7 yrs.)
Forest Planning Responsibilities:	Locatable Minerals AMS

NUNN, BOB

Education:	B.A. Business Administration
Experience:	California Dept. of Transportation (9 yrs.); Forest Service (6 yrs.)
Forest Planning Responsibilities:	Facilities AMS; technical EIS/Plan input for facilities; facilities maps

ORBUS, DENNIS

Education:	B.S. Forest Management
Experience:	Forest Service (16 yrs.)
Forest Planning Responsibilities:	Management Team review (District Ranger); management area description

PORTER, ROGER

Education:	B.S. Biology; post-baccalaureate study in forestry
Experience:	Forest Service (10 yrs.)
Forest Planning Responsibilities:	Forest alternative development; ID team representing timber, protection, and pest management

REYNOLDS, LINDA

Education:	B.A. and M.A. Anthropology
Experience:	Private sector (3 yrs.); Forest Service (10 yrs.)
Forest Planning Responsibilities:	Technical EIS/Plan input for cultural resources

RICKFORD, TED

Education:	B.L.A. Landscape Architecture
Experience:	Forest Service (22 yrs.)
Forest Planning Responsibilities:	Visual Resources AMS; technical EIS/Plan input for visual resources, recreation, roadless areas, and wilderness

RUOPP, JOHN

Education:	B.S. Forestry
Experience:	Forest Service (24 yrs.)
Forest Planning Responsibilities:	Management Team review (Forest Recreation Officer); management direction for recreation, wilderness, visual resources, and cultural resources

SAPOUSEK, OLLIE

Education:	B.S. Forestry
Experience:	Forest Service (32 yrs.)
Forest Planning Responsibilities:	Land Management Planning Staff Officer and Core Team Leader

SCHAAF, RAY

Education:	B.S. Forest Management
Experience:	Forest Service (29 yrs.)
Forest Planning Responsibilities:	Management Team review (Forest Public Affairs Officer); overall responsibility for public involvement in Forest planning

SERINO, DICK

Education:	B.S.F. General Forestry
Experience:	Forest Service (30 yrs.)
Forest Planning Responsibilities:	Management Team review (Forest Lands and Minerals Officer); Lands and Energy AMSs

SILBERBERGER, DICK

Education:	B.S. Civil Engineering
Experience:	Forest Service (22 yrs.)
Forest Planning Responsibilities:	Management Team review (Forest Engineer); management direction for facilities

STEWART, KATHRYN

Education:	Fine Arts; Graphic Arts
Experience:	Forest Service (11 yrs.)
Forest Planning Responsibilities:	Graphic art direction; document design and layout; photo posterizations:; and map production

STUTLER, JOE

Education:	A.S. Forestry; B.S. Natural Resources
Experience:	Forest Service (19 yrs.)
Forest Planning Responsibilities:	Management Team review (District Ranger); technical EIS/Plan input for protection

STUTLER, LONNA

Education:	B.A. Biology
Experience:	Forest Service (10 yrs.)
Forest Planning Responsibilities:	Team leader for Public Response Analysis ID Team; writer-editor from March 1987

STYGAR, PAT

Education:	B.S. Wildlife and Fisheries Resources
Experience:	State of Idaho (1 yr.); Douglas Co., Washington (6 mos.); Forest Service (8 yrs.)
Forest Planning Responsibilities:	Biological Planner on Land Management Planning Core Team from November 1981 - February 1982

TOTHEROH, DAN

Education:	B.S. Engineering
Experience:	Private engineering (2 yrs.); Forest Service (18 yrs.)
Forest Planning Responsibilities:	Management Team review (Forest Engineer) for facilities, minerals and geology

WADE, LARRY

Education:	B.S. Forest Management
Experience:	Forest Service (28 yrs.)
Forest Planning Responsibilities:	Multiple-use Planner on Land Management Planning Core Team; Roadless Area, Research Natural Area, and Special Interest Area AMSs

WARREN, DICK

Education:	B.S.F. Forest Management; M.F. Forest Recreation
Experience:	Forest Service (22 yrs.)
Forest Planning Responsibilities:	Developed Recreation AMS

WEAVER, RICH

Education:	B.S. Anthropology
Experience:	State and private work (3 yrs.); Bureau of Land Management (2 yrs.); Forest Service (7 yrs.)
Forest Planning Responsibilities:	Cultural Resources AMS; technical EIS/Plan input for cultural resources; coordination with local American Indian tribes

COVER PHOTOGRAPH CREDITS:

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Environmental Impact Statement: Gordon Wiltsie
Appendix: Rocky Rockwell
Record of Decision: U.S.F.S.

Photo posterizations by Mary Ambrose and Kathy Stewart, U.S.F.S.

VI

CONSULTATION

CHAPTER VI. CONSULTATION WITH OTHERS

United States Government Agencies

Bureau of Land Management
- Bakersfield District
- Bishop Resource Area
- Ridgecrest Resource Area
- Bishop Resource Area, Bakersfield District and Riverside District
- California Desert Conservation Area
- California Desert District
- State Director's Office, Sacramento

Fish and Wildlife Service, Sacramento

Bureau of Census, Sacramento

Other National Forests
- Angeles
- Klamath
- LTBMU
- Lassen
- Los Padres
- Mendocino
- Modoc
- Regional Office
- San Bernardino
- Sequoia
- Shasta-Trinity
- Sierra
- Tahoe
- Toiyabe

State of California

Department of Fish and Game, Bishop and Fresno
Department of Parks and Recreation, Sacramento
Office of Planning and Research, Sacramento
Department of Energy, Sacramento
Office of Employment, Sacramento
Department of Finance, Sacramento
Department of Motor Vehicles, Sacramento

Counties

Inyo County Planning Department
Mono County Planning Department
Tulare County Planning Department

Cities

City of Los Angeles, Department of Water and Power

American Indians

Owens Valley Board of Trustees
Uta Uta Gwaitu Band of Paiute-Shoshone Indians
Owens Valley Band of Paiute-Shoshone Indians
Paiute-Shoshone Cultural Center
Paiute-Shoshone Indians, Fort Independence Tribe
Lone Pine Band of Paiute-Shoshone Indians
Big Pine Band of Paiute-Shoshone Indians
Kern Valley Indian Community
Paiute-Shoshone People

VII

RECIPIENT LIST

RECIPIENT LIST

The following represents the most current list of names of recipients of the documents This list is subject to change as updating continues based on requests for additions and deletions A master list is kept as part of the planning records in the Supervisor's Office and is available for review during normal working hours

FEDERAL AGENCIES

Advisory Council on Historic Preservation, Office of Archaeological Protection
Federal Energy Regulatory Commission, Legal Matters; Washington, DC
Federal Energy Regulatory Commission, Natural Gas Matters; Washington DC
Federal Energy Regulatory Commission, Electric & Hydroelectric Matters; DC
Department of Health and Human Services; Washington, DC
Department of Housing and Urban Development, Regional Administrator IX, San Francisco, CA
Interstate Commerce Commission; Washington, DC
Department of Labor, Asst. Secretary for Occupational Safety & Health
USDA, Forest Service, Angeles National Forest
USDA Forest Service, Cleveland National Forest
USDA, Forest Service, Eldorado National Forest
USDA, Forest Service Klamath National Forest
USDA, Forest Service, Lake Tahoe Basin Management Unit
USDA, Forest Service, Lassen National Forest
USDA, Forest Service, Los Padres National Forest
USDA, Forest Service, Mendocino National Forest
USDA, Forest Service, Modoc National Forest
USDA, Forest Service, Pacific Southwest Region
USDA, Forest Service, Plumas National Forest
USDA, Forest Service, PSW Experiment Station
USDA, Forest Service, Rocky Mountain Forest & Range Experiment
USDA, Forest Service, San Bernardino National Forest
USDA, Forest Service, Sequoia National Forest
USDA, Forest Service, Shasta-Trinity National Forest
USDA, Forest Service, Sierra National Forest
USDA, Forest Service, Six Rivers National
USDA, Forest Service, Stanislaus National Forest
USDA, Forest Service, Tahoe National Forest
USDA, Forest Service, Toiyabe National Forest
USDA, Office of Equal Opportunity, Washington, DC
USDA, Rural Electrification Administration, Environmental Policy Office
USDA, Soil Conservation Service, Bishop Office
USDA, Soil Conservation Service, Washington, DC
USDI, Bureau of Land Management, Bakersfield Office
USDI, Bureau of Land Management, Bishop Resource Area
USDI, Bureau of Land Management, California Desert District,
USDI, Bureau of Land Management, Carson City District
USDI, Bureau of Land Management, Ridgecrest Resource Area
USDI, Bureau of Land Management, Sacramento
USDI, Bureau of Land Management, Reno
USDI, Bureau of Land Management, Tonopah
USDI, Bureau of Mines, Spokane
USDI, Environmental Project Review
USDI, Fish and Wildlife Service, Endangered Species Office, Sacramento
USDI, Geological Survey, Virginia
USDI, Geological Survey, Water Resource Division, Menlo Park
USDI, National Park Service, Western Region; San Francisco
USDI, National Park Service, Alden Nash; Bishop
USDI, National Park Service, Death Valley National Monument
USDI, National Park Service, Sequoia-Kings Canyon National Park
USDI, National Park Service, Yosemite National Park
USDOD, Air Force, Edwards AFB
USDOD, Navy, China Lake NWC
USDOD, Navy, Lemoore Naval Air Station, Search and Rescue
USDOD, Deputy Assistant Secretary of Defense (Environment), Washington, DC
USDOD, Deputy Asst. Secretary, Air Force (Environment, Safety, Occup & Health)
USDOD, Chief of Navy Operations, Arlington, VA
USDOE, Western Area Power Administration, Boulder City
USDOE, Office of NEPA Project Assistance, Washington, DC
USDOT, Federal Highway Administration, Sacramento
USDOT, Environmental Division; Washington, DC
USDOT, Research & Special Program Administration, Washington, DC
USDOT, Federal Aviation Administration, Western Region, Los Angeles, CA
USDOT, Regional Federal Highway Administrator, Region 9; San Francisco, CA
USEPA, Environmental Protection Agency, Washington, DC
USEPA, Environmental Protection Agency; Region IX, San Francisco, CA

U.S. SENATORS

Alan Cranston
Pete Wilson

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Richard Lehman, District 18
Jerry Lewis, District 35
Charles Pashayan Jr , District 17
Norman Shuway, District 14
William Thomas, District 20

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Senator Ken Maddy, 14th District
Senator H L. Richardson, 25th District
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STATE ASSEMBLYMEN

Bruce Bronzan, District 31
Gary Condit, District 27
Jim Costa, District 30
Trice Harvey, District 33
Bill Jones, District 32
Norman S. Waters, District 7
Phillip D. Wyman, District 34

CALIFORNIA STATE AGENCIES

Air Resources Board, Sacramento
Board of Forestry
Clearinghouse Office of Intergovernmental Management, Sacramento
Historic Preservation Office, Sacramento
State Lands Commission, Sacramento
Department of Conservation, Resource Building; Sacramento
Department of Fish & Game, Bishop
Department of Fish & Game, Fresno
Department of Fish & Game, Long Beach
Department of Fish & Game, Sacramento
Department of Food & Agriculture, Sacramento
Department of Forestry, Bishop
Department of Forestry, Information Officer, Fresno
Department of Forestry, Region 5; Sacramento
Department of Parks & Recreation, Resource Building; Sacramento
Department of Parks & Recreation, OHV Division; Sacramento
Department of Transportation, Dept. Dist. Director, Planning; Bishop
Department of Transportation, Dist 10 Environmental Branch; Stockton
Department of Water Resources, Division of Planning; Sacramento
Employment Development Department, Bishop
Highway Patrol, Bishop
Office Planning & Research, Sacramento
Regional Water Quality Control Board Lahonton Region, South Lake Tahoe
Resources Agency, Sacramento
California Water Resources Control Board, Water Rights; Sacramento
Great Basin Unified Air Pollution Control Board
Tahoe Regional Planning Agency

NEVADA STATE AGENCIES

Department of Conservation & Natural Resources, Carson City
Department of Wildlife, Director; Reno
Department of Wildlife, Regional Supervisor; Las Vegas
Division of Forestry, Assistant State Forester, Carson City
Division of Historic Preservation & Archaeology; Carson City
State Clearinghouse, Chief, Budget Division; Carson City
State Planning Coord, Government Office of Planning Coord; Carson City

TRIBAL GOVERNMENTS

Big Pine Band of Paiute/Shoshone Indians, Big Pine
Bishop Indian Tribal Council, Bishop
Bridgeport Paiute Tribe, Bridgeport
Fort Independence Tribal Office, Fort Independence
Kern Valley Indian Community, Weldon
Lone Pine Band of Paiute/Shoshone Indians, Lone Pine
Native American Heritage, Sacramento
Owen Valley Band of Paiute/Shoshone Indians, Bishop
Uta Uta Gwaitu Paiute Tribe, Benton
Walker River Paiute Tribe, Shurz,NV

CALIFORNIA COUNTIES

Fresno County Board of Supervisors
Inyo County Board of Supervisors
Kern County Board of Supervisors
Madera County Board of Supervisors
Mono County Board of Supervisors
Sierra County Board of Supervisors
Tulare County Board of Supervisors
Inyo-Mono Fish and Game Commission
Inyo County Parks and Recreation
Mono County Department of Parks
Inyo County Planning Commission
Interagency Commission on Owens Valley Land and Wildlife
Inyo County Planning Department
Mono County Planning Department
Town of Mammoth Lakes Planning Department
Tulare County Planning Department

NEVADA COUNTIES

Esmeralda County Commissioners
Mineral County Commissioners

CITIES

Bishop Chamber of Commerce
June Lake Chamber of Commerce
Lee Vining Chamber of Commerce
Lone Pine Chamber of Commerce
Mono County Chamber of Commerce
Ridgecrest Chamber of Commerce
Mammoth County Water District
June Lake Public Utilities District
City of Bishop
City of Bakersfield
City of Los Angeles, DWP; Bishop
City of Los Angeles, DWP, Resource Development; Los Angeles
Town of Mammoth Lakes
City of Ridgecrest

LIBRARIES

Alameda Library
Anaheim Library
Berkeley Main Library
Central Library, Stockton
Central Public Library, Santa Cruz
Central Riverside Library
El Cajon Branch Library
Frances Howard Goldwyn, Hollywood Branch
Fortuna City Library
Frazier Park Branch Library
Fresno County Library, Clovis
Glendale Central Library
Governmental Reference Library
Governmental Publications Depository Library, Reno
Huntington Park Regional Library
Inyo County Library, Big Pine Branch
Inyo County Library, Bishop Branch
Inyo County Library, Independence Branch
Inyo County Library, Lone Pine Branch
Kern County Library, Ridgecrest
Los Angeles Library, Bell Gardens Branch
Los Angeles City Library
Los Angeles County Library, East LA Branch
Los Angeles County Library, La Canada Branch
Los Angeles County Library, Rosemead Branch
Los Angeles County Library, San Dimas
Los Angeles County Library, San Fernando
Los Angeles County Library, West Covina Branch
Main Library, Palo Alto
Mono County Library, Bridgeport Branch
Mono County Library, Lee Vining
Mono County Library, Mammoth Branch
Mornsby Public Library, Carson City
North Sacramento Library
Oakland Public Library
Orange County Library, Laguna Niguel
Orange County Library, San Clemente Branch
Palo Alto Library
Reno Central Branch Library
Sacramento Public Library
San Bernardino County Library
San Francisco Main Library
San Luis Obispo Library
Santa Ana Branch Library
Santa Barbara City Library
Santa Cruz Library
Serramonte Library, Daly City
South Pasadena Library
Southwest Branch Library, Bakersfield
Stanislaus County Library, Modesto
State Library of Government Documents, Sacramento
Sunnyvale Library
University of California Library, Davis
University of Nevada Reno Library
Upland City Library
Ventura Library
Ventura County Library, Simi Valley Branch
Victorville Branch

ORGANIZATIONS AND INDIVIDUALS

Abbott, Alice
Abler, Ken
Adair, Phyllis
Adams, L
Adelman, Sidney R
Adler, Elisa
Adler, I
Adler, James E. and Ruth A.
Ahlborn, J. Daniel
Aichele, Jon R.
Alderson, Edith
Allbrandt, Melvin
Allen, Laurel
Allen, Paul J
Allen, Sam
Alliance for Environment & Resources
American Alpine Club
American Motorcycle Association, District #37
American Recreation Coalition
Ameus, Thomas
Anderson, Ed
Anderson, H L.
Anderson, Raymond E
Andre, Mark
Andrews, Preston K
Antelope Valley Press, Palmdale
Arcularius, Howard
Armistead, Donna L.
Arrigo, Mary
Associated Press, Los Angeles
Atkins, Arthur
Atkins, Margo
Atkinson, Cliff
Atkinson, Ralph L.
Audobon Society, National
Audubon Society, Eastern Sierra
Audubon Society, Napa-Solano
Audubon Society, Tulare County
Avedikian, Ed
Avignon, Major
Ayers, Rod
Baas, Susan
Babb, Clara
Backes, Michael J.
Baggett, L Richard

Bagley, Mark
Bains, William H.
Baker, Douglas L
Baker, Glenn M.
Bakersfield Californian
Baldwin, Jerry
Balint, Susan E.
Ball, Gary and Betty
Ballenger, Clarence R.
Ballenger, June
Balog, Marianne N.
Banhart, Bruce
Banta, Cliff and June
Banta, Don
Barbuck, Walter
Bard, C.
Baribault, W H.
Barnes, Larry J.
Barrow, Bob
Barry, W.J.
Baum, Rudy M.
Baumwohl, David
Bays, Peter
Beader, E.E.
Beakley, Constance
Bean, Betty
Belden, Paul C.
Bellona, William F.
Belt, Bruce G.
Belt, Katy C.
Bendarzewski, Jerry A
Benezet, J.
Benioff, Mildred
Benis, Keara
Benjamin, Christian
Bennett, Alex
Bent, Robert
Berbach, Martin W.
Berendt, Henry A.
Berlin, Frank
Bernard, R G.
Billings, Robert D.
Blanchard, Dean
Bliss, Thomas A.
Blomquist, Carl A.
Bloombaum, Millie
Bobo, Dick
Boehmer, Howard W.
Bohm, G.
Bonner, Cliff
Bonner, Helen
Bonny, Charles
Borne, Gene
Bowles, Sue

Bowman, G M.
Bowman, Jim
Boyd, Molly
Boyer Karen and Kent
Boyer, S.H.
Bradbury, Bob
Brady, Otis
Brainard, Elliot F.
Bralver, Peter J.
Breed, Martha H.
Brehmer, Edwin
Broberg, Carol
Brougher, Steven R.
Broughton, Beverly
Brown, A. & E., Environmental Analysts
Brown, Annemarie
Brown, Johanna
Browning, Lindsay D.
Browning, W H.
Bruno, Matthew
Bryan, H.L.
Buck, Byron M.
Buehler, Dennis
Bull, Charles E.
Bulpitt, Edward R.
Burdict, Darrel C.
Burger, Dallas O.
Burgher, Camilla
Burk, Peter and Joyce
Burnham, Jeremy R.
Burns, Robert
Burns, Rolland F. II
Burnstrom, John
Burrell, David C.
Bursik, Marcus
Butler, R.W.
Byron, Robert T.
Caldera, Manael
Caldwell, Bill
California Sportfishing Protection
California Association of 4WD Clubs
California Cattlemens' Association
California Native Plant Society
California Save Our Streams Council
California Snowmobile Riders Association
California Trout
California Wilderness Coalition
California-Nevada Snowmobile Association
Campbell, Barbara
Camphausen, Fred
Cardina, Thomas J.
Carlton, Alan
Carrington, Woody
Carroll, Ellen

Carta, Pete
Carter, Fred W.
Cartmell, Robert W.
Caruso, Jeannie
Casey, Peter M.
Casper, Bernard G.
Cassidy, Kevin
Catanzaro, Gene
Catlin, Tim
Careda, Ed
Chalfant Press, Bishop
Chase, Tom and Norene
Chew, Freeland
Christensen, Scott
Christenson, D.L.
Christman, A.B.
Chu, Laurie N.
Clark, Brian
Clark, John
Clark, Renee E.
Clevenger, Vern
Cocks, Steve and Peggy
Colby, Jack
Coles, Alan
Collins Pine Company
Collins, Dalya
Collins, John S.
Colton, Sylvia
Conley, Ken
Conley, Mrs. Fran
Contel of California
Cooper, Scott J.
Cooper, Tom
Copeland, James
Cortez, Don R.
Coules, Dennis
Coulombe, Rick
Coveney, John J. III
Cowan, Barry
Craig, Marion R.
Cranor, Chuck
Crockett Family
Crockett, David L.
Cross, Don and Karen
Crossley, Jean
Crowe, Tom
Crowell, Kathleen
Cuevas, John R.
Culnan, James
Cunningham, John
Curtis, Wilma A.
Daily Independent, Ridgecrest
Dairiki, Ned and Janice
Daugherty, James O

Davis, Jeff and Annette
Davis, Lauren
Davison, Patrice
Dedecker, Mary
DeJager, Bill
Dedeaux, Mary Lyn
Defenders of Wildlife, California
Delaney, John
Desert Survivors
Dessauer, Dorothy
Devol, David E
Devore, Tim
Dimond, Ann M.
Dittmer, Harold L.
DJ's Snowmobile Adventures
Dodd, Brett and Landfield, Susan
Donahue, Rita I.
Donaldson, Norm
Dore, Phillip
Douglas, Ruth
Downer, Craig C.
Drazan, Don W.
Drbousek, Mary
Dresher, Melvin and Martha
Driver, William T.
Drlik, Tanya and Muehleck, George
DuBaillets, A D.
Dudley, Tom
Duenzen, Dana
Duffy, Jerry
Dulco, Steve
Dunham, David D.
Dunn, David
Duroux, Catherine E.
Durst, Carol A.
Duysen, Larry R.
Eastern Sierra Earth First
Eaves, Dorothy
Ebner, Gregory P.
Echgelmeier, Betty
Eckert, Robert
Eddy, Doris L.
Edelson, David B.
Edelweiss Ski Club
Eggen, Eric
Ekstrom, Todd
Elconin, Kenneth
Elliott, D.
Engel, June
Environmental News Collective
Erlich, Robert
Evans, Carl
Evans, Charles R.
Evans, Patricia

Fabre, Stephen
Feather, Martin
Federation of Fly Fishers
Fedor, Gary
Felando, Anton
Ferguson, Mary
Ferguson, Thomas and Beatrix
Fern Creek Lodge
Ferris, Roy K.
Fertig, Ralph R
Fetherston, Gail R
Fetters, Harold M.
Fetzer, George H. and Debora K.
Fey, R Walter
Findling, Melanie
Fine, Jerry
Fischer, John
Flewelling, Kip
Flower, William L
Fogel, Marietta
Footloose and Wintersport
Forbes, Bob
Forbes, George T
Foreman, Marshall L
Fores, Richard B
Forsgaard, Karl
Fowler, George S.
Fox, Archie and Barbara
Franklin, Theodore
Fredendall, Doris H
Freilich, Lawrence
French, Richard
Fresno Bee
Frincke, Richard
Fry, Katheryn R.
Fryxell, Don
Fulton, Mark
Gaines
Gambina, Ralph J.
Ganong, Barbara L.
Ganong, R A.
Garner, Robert
Garrett, Dick
Garrett, Jim
Gaston, Lyle K
Gateway Gazette, Pahrump, NV
Gautler, Marian and Melvin
Geddy, Elaine
Gedvillas, Ted
Gerl, Bob
Getty, Leonard
Ghiglieri, Dennis
Gilbard, Laura N
Gilbert, Arthur C
Gilbraith, Jack J
Gilchrist, Betty
Gillem, Chris
Gillen, Amy
Gitt, A.P
Giuliani, Derham
Gladish, Debbie
Goetz, Larry
Goforth, Dwain
Goforth, Greg
Goka, Janice L.
Goldsmith, Martin
Good, Richard L
Goodell, D.
Gorman, Michael J.
Gorski, Margaret
Graves, D.H
Gray, David S.
Gray, David S.
Gray, Joseph C.
Grealeaf, B B.
Green, Helen A.
Gregg, Bruce R.
Greilich, Susan
Griffing, Tom
Griffith, Lee V
Grijalva, Ellen Wood
Grima, Alex
Grimsley, Jerry D.
Grimsley, Mary L
Gross, Elizabeth
Guffey, Rodger W
Guidry, Priscilla L
Guidry, Ron
Guiton, Leonard A.
Gustlin, Philip R.
Gutieriez, Ritva
Gwinn, Jenny
Gwinn, Margaret H
Hadden, David Rodney
Hallee, Mark
Halverson, Lorraine
Hamilton, Phil
Hamman, J.G.
Hanft, Steven M
Hannah, James and Jenny
Hannah, Sherman A.
Hansen, Kathleen A.
Hanson, H E.
Hanson, Lloyd B.
Hanson, Scott J.
Harbeson, Charlotte
Harcourt, F.L
Hardebeck, Jean
Herlihy, Warren and Zoe
Hess, John
Hieatt, Kim
Higerty, Michael B.
Higginbothan, Paul Dean
High Sierra Sports, Incorporated
High Sierra Stock Users Association
Hight, John
Hilby, Gerald M.
Hill, Barbara
Hill, Edmund
Hill, John V.
Hinson, David B.
Hinze, Lowell A.
Hirshfeld, Leo
Hirshson, Mary E
Hoffman, Jeff
Hoffner, John
Holladay, Kevin
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Holland, William A
Holshuh, H J.
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Holtz, William R.
Hoover, Victoria N
Hopewell, Rusty and Chuck
Howard, Cloyde P
Howard, Roy
Hudson, Arlene
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Hunt, Byng M
Hunt, Nita M
Hunter, Doug
Huntsinger, Fritz R.
Hutchinson, Leonard R
Hutton, Dee
Hutton, Mrs Frank
Hutton, Wayne
Hyde, Dan
Ikemoto, Sam
Inyo-Mono Advocates for Community Action
Inyokern News Review
Iverson, Wayne D.
Jackson, Thomas J
Jaeger, Lisa
Jali, Rick
Jank, Mary
Janowicz, Peter F.
Jellison, Kerry
Jencks, Michael R.
Jenkins, Ruby Johnson
Jenkins, Thomas H.
Jensen, Bruce H.
Harder, Thomas J.
Hardin Family
Harlan, James G.
Harman, James L and Sharon B.
Harris Joe
Harris ara
Harrison, Rayma
Harryman, R.
Hart, John
Hart, Joyce
Hartman, Dennis
Hartman, G.V.
Hartman, Jane
Hartry, Roy
Harvey, Peter
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Hawley, Brian N.
Hayden, Denise M
Hayden, Gregory
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Haye, Stan
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Hayes, John B.
Hazel, Ron
Heard, Howard
Hearst, Michael C.
Heckman, Donald
Hedrick, William
Hefferly, Gerald E.
Hefter, Gerald
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Heid, Mary Kay
Heid, Thomas L.
Heideman, Robert C.
Heidenwag, Bruno
Heimler, James
Hein, Martin
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Heller, Clarence
Henderson, Dr. and Mrs Robert
Hendry, Alexander D
Henkes, Howard J. and Marjorie
Henn, Lin
Henn, Randy
Henry, K.
Henry, Ronald A.
Herbold, A.
Herbst, David B.
Herckt, Judy A.

Johns, Mark
Johnson, Dale F.
Johnson, Dennis M.
Johnson, Norman
Johnston, Gary
Jolley, Malcolm G
Jones, Jack W
Jones, Peter
Jorden, Robert
Joseph M. Ligman
Kabisch, Sally
Kafrouni, George
Kahn, Larry
Kalivoda, Jeannie
Kamisher, Gary
Kamola, R.
Kane, Susan
Kanegaye, Yuki
Kangers, James A.
Kanne, Robert M.
Keithley, Austin
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Keleman, Henry
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Kelley, Robert J.
Kendrick, Juliet
Kenser, Marcella
Kent, Michael A.
Kerchenfaut, Sue
Kern, Jack
Kezar, Ronald
Kiley, Steven R.
Kilgore, Shawn
Kilmer, Lori L.
Kimberling, Robert
Klaris, Pete
Klinger, Dan
Klug, Bob
Kluth, Paul
Knapp, Eric E.
Knapp, Roland A.
Knerr, Ed
Kocisko, Robert J.
Koepp, William and Gaye
Kohlhase, Neill W.
Kopod, Elaine
Korngold, Ralph
Koselka, William J.
Kramer, Martha
Krauss, W.T., L.A. Valley College
Kren, Marvin
Krohncke, Kenneth and Ruth
Kruger, David
Kucera, Thomas E.
Kurnick, Herbert
Kusumoto, Scott
Kvaas, Ronald A.
Kvamen, Ken and Suzy
Lacey, John W.
Laden, William J.
Lambert, Michael Eldon
Landaker, Becky
Landon, Pam
Landsman, Stanley J
Lane, Kenneth S.
Langford, Mark C.
Langley, Jim
Larkin, Robert
Larson, H.F.
Lassen Advocate, Susanville
Latone, Michael
Lawton, Thomas J.
Lawyer, David S.
Lee, Preston R.
Lee, Sarah S.
Lehotsky, Ralph B.
Lein, Larkette
Lenz, Louis D.
Leone, John
Leong, Robin
Levine, Hank
Levine, Richard
Lewis, Christopher
Lewis, Donald
Lewis, Kathrine
Lewis, Rich
Lewis, Thomas E.
Leydecker, Al
Libkind, Marcus
Linda, Lauren
Lindblom, Celia
Lines, Ralph O.
Litmann, Dr. and Mrs. Richard J.
Livingston, Tim
Lizza, Chris O.
Lizza, Tiberio P.
Locke Family
Loeher, Larry
London, Craig
London, Marjorie
Lones, Dain B.
Lopez, Alan
Los Angeles Times
Lucas, David
Luckham, Elise J.
Ludviss, Anthony
Luippold, Dick
MacTavish, A.
MacTavish, Robert S
Macintosh, Christina M.
Madera Tribune, Madera
Madison, Sherlee
Mallman, George
Mammoth Lakes Snowmobile Association
Mammoth Mountain Ski Area
Mammoth/Toiyabe Heli-Ski
Manchester, C.
Mandelbaum, Ilene
Maner, Doug
Mantovani, Robert A. and Juanita M
Marantz, Philip F.
March, Sandi
Marcus, Brad
Marinelli, Joseph
Marinick, Jack
Marovich, P.L.
Martin, Chris
Martinez, Karen
Martinez, Larry
Marzano, Carmen and John
Masline, Lorraine
Mason, Peter A.
Masters, John K
Mather, Ross
Matsuyama, Bob
Matthews, Helen
Matthews, King A
Matyas, Betty H.
Matzke, R. Brett
Mayer, Ursula
McArthur, Edward E.
McAteer Family
McCall, J.A.
McCarroll, Neil
McCool, Linda
McCutcheon, R.P.
McDonald, Charles K.
McDowell, Bob
McEwan, Dennis
McLaughlin, Robert J.
McLeod, Bridget
McMahon, Herbert A.
McMillan, M. Sean
McNicholas, T.M.
Mehner, Jill
Meier, Mary L.
Meilink, Dorothy
Meiners, Carole
Mendershausen, E.
Menius, Jack L.
Menzel, Mia J.
Merritt, Alberta
Metzger, Harry
Meyer, Susan
Meyerson, Jeffrey
Middlemiss, Terri and Ed
Middleton, Les
Miller, Albert G.
Miller, Jon
Milne, John M.
Milovich, George
Mims, L. Stewart
Mineral County Independence News
Moglewer, Edna
Moglewer, Sidney
Mojave Desert News
Mono Lake Committee
Mono Power Company
Mono Wildlife Council
Montano, Armando
Montrose, Rodney and Reba
Mooney, David L.
Moore, John K.
Morefield, James D.
Morey, Kathy
Morgan, Richard A.
Morgenson, Randy
Mortiz, James A.
Morris, Don
Morrison, Bill
Mortensen, Charles R.
Mosbacher, Mary Lou
Mosher, Ted
Mow, Jeff
Mozen, Howard
Mueller, Robert and Ruth
Mullen, John E.
Mureau, Steve
Murez, Joe
Murphey, Donald E.
Murphy, Catherine
Myers, Janice L.
Myers, Julian
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National Ski Areas Association
Nature Conservancy
Neal, Paul; State University of New York
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Nelson, Gordon R.
Neubauer, John
Nevins, Richard E.
Newkirk, Steve
Newland, Victor
Nichols, Elisabeth B.
Nichols, Mark and Sherry

Nickolaus, Evelyn Mae
Nilsson, Mrs. E.
Noland, Thomas R
Nordgren, Arlene
Norred, William
Northeast Californians for Wilderness
Northstar at Tahoe, H C. Schwarz
Nutt, John
Nevadans and Californians for Wilderness
O'Conner, Matthew
O'Conor, John F
O'Donnell, Rick
Oakeshott, Jeanne
Odion, D.A.
Ojendyk, Henry A
Oldfield, Andy
Olson, Derik
Oshita, Gordon H.
Ostrander, Jack S.
Otoshi, Joel S.
Ortenburger, Leigh N.
Owens, Gene A.
Oyadomari, David
Pacific Gas and Electric Company
Pahl, Donna May
Palmer, Caroline M
Palmeri, Theodora M
Panton, Gary
Papp, David
Paranick, Daniel and Melinda
Parsley, Joe
Pasnau, Robert O.
Patton, Richard W.
Peckner, LLoyd M.
Pelech, Walter and Dorothy
Pell, Lewis
Peltier, Rick
Pennebaker, R.G. and Fleata
Pernarelli, Peter J
Perrelli, Richard
Pesnell, Kenneth C
Peterson, Dan J.
Peterson, Eileen
Petokas, Ina
Petter, Noel
Pfaffhausen, W K
Phillips, Lee
Pierce, Marcus
Piper, Ina E
Pischel, Bruce
Podosin Family
Pollon, Joseph
Porpiglia, Randy
Post, J. Robert

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Potterville, Charles F
Powell, Douglas R.
Powell, Raymond P
Prather, Michael
Pritchett, Daniel
Probst, Thomas J.
Prochazka, Ingeborg B.
Professional Ski Instructors of America
Protti, Mark
Prowant, Karen
Pryor, Chuck
Pryor, Hugh C
Puskar, Richard M.
Putman, Jeff
Quail, Dorothy
Quetsch, John G.
Ramsey, Bob
Raquet, Mignon
Rasmussen, John
Rausch, Robert C.
Rebbe, Gaylen W.
Reed, John
Reichle, Jim and Claude
Reifsnider, Betsy
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Rey, John
Rhodes, Philip T.
Rice, William H. Jr
Richman, Jonathan
Ridder-White, Brooks
Riechel, Bill
Rinde, Felix
Ripley, Tom
Roberts, Daniel F. and Maria K.
Robinson, James A.
Robinson, Joel P.
Rodeward, Charles
Roessing, Walter
Rogers, Leah
Rohan, Willian E
Rollock, Kenneth
Ronning, Rich
Roeczyk, Mary Lou
Rosenfield, Shelley
Rosenthal, Joel B.
Roth, Lori
Rowan, Paul and Joyce
Ruekberg, Joe
Rumble, R
Rummelsburg, Joan
Russ, Don
Russell, Evan
Russell, Julia S

Russell, William T.
Ryan, B.
Ryerson, Diane
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Salathiel, Lindsay
Sanders, Richard
Sandler, DJ
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Sanford, Timothy B.
Sarna, John E.
Sauser, Rudolph Jr
Sawka, Stephen
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Schaefer, William P.
Scharnweber, Janet
Schmidt, Allan R. and Anne C.
Schmidt, Reinhard E.
Schmidt-Maybach, Ulrich
Schoerner, E.H.
Schoerner, Kathleen
School of Lost Borders, Steven Foster
Schooler, James
Schott, Jim
Schroeder, Alan
Schwartz, Robert
Schwartz, Steve
Scott, Barbara A.
Seeberg, Phil
Seydor, Michael
Shacklett, Nancy G
Shapley, Lloyd and Marian
Sharpsteen, Mildred Y
Shelly, Robert E
Shepard, Edythe
Sherman, Harvey
Short, Randy
Sibbet, David L.
Sierra Club
Sierra Pacific Industries
Sierra Pacific Power Company
Sill, Marjorie
Simich, Sam
Simon, Jerold
Simon, Larry
Simon, Roger D.
Simpson, Hank
Singer, Roy M.
Siracuso, David A.
Siu, Suzanne
Skeele, Tom
Slattery, Timothy J.
Slone, Thomas H.
Small, Gary

Smith David W.
Smith, Genny
Smith, Ross W.
Smith, Steve
Smith, Thomas Roy
Snyder, Arthur K.
Soule, John F.
Soule, Salmon A.
Southern California Edison Company
Spence, Brian C.
Spiegel, Sam
Spofford, Jeff
Squaw Valley, USA
Staguss, George
Stanford, Marjorie
Stanley, Alan R.
Stark, Greg
Starratt, Dylan
Steele, Dale T.
Steenbergen, James
Steinberg, Daniel
Stekel, Peter
Stevens, Mark
Stewart, Frank
Stimson, Jim
Stivers, Donald C.
Stock, Daniel
Stone, Jeff
Stone, Jonathan P.
Stoutenburg, Gary
Strachan, Don
Strickland, Rose
Suk, Tom
Sunshine Mining Company, Don Earnest
Sutherland, Robert "Woods"
Swanberg, Lee
Swanson, John R.
Swart, David B.
Szpila, Robert
Taggart, Marianne
Tallstrup, Burke
Tarbush, David S.
Taylor, Craig
Taylor, Dean W.
Taylor, William T.
Telliano, Michael
Terwilleger, William
Thaxter, Ted
The Sun, San Bernardino
Thomas, Margaret
Thompson, Elliott
Thorburn, Dee Dee
Thye, Robert P.
Tidwell, Don

Tielrooy, Jack
Tiffany, Ted W.
Tighe, Marie
Tobin, Jack
Tollstrup, Marie
Tomajko, Chuck
Tomic, Judith C.
Trowell, Clark
Truitt, Michael A
Tucker, David
Tucker, Susan A.
Tullock, Virginia
Turner, John W.
Tynan, Timothy
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United States Hang Gliding Association
Upham, David W.
Urban Creeks Council
Valkass, Marilee L.
Valle-Riestra, Christopher
Van Steenbergen, Bernice
Van Valkenburgh, Bill
Vance, Chris
Vaughan, Jeff
Virginia 4WD Association
Vogel, Maureen
Volkman, Joy
Vorster, Peter
Voss, Ronald L.
Walker, Erica
Walker, Linda
Walker, Mary
Walker, Robert V.
Wallace, Jeanne
Waln, Duane V. Jr.
Walter, Jeanne
Walter, Thomas L.
Warhaft, Val and Chris
Warner, Susan B.
Warren, Lisa
Warren, Robert
Waterbury, Denise
Watson, Robert
Weatherly, Fred E
Weatherman, Virginia
Weaver, Cynthia
Webb, Allen P.
Weber, Gerald
Weber, Keith C.
Webster, Nancy C.
Week, Douglas H.
Wehausen, John D.
Weidermann, Warren
Weidert, Carl
Weil, Allen and Mandelen
Weiner, Stephen A
Weinrot, Edwin Y.
Welch, Don D.
Weldon, Lee G.
Weller, George A.
Weller, Norman
Wells, Arthur C.
Wells, Harriet
Wells, Jackie
Wells, Jacqueline B.
Wendell, John
Weser, Mike
Weser, Paul
Wessendorf, Ronald
West, Carolyn
Westbrook, Barbara
Westbrook, Janet
Western Timber Association
Westington, Scott
Weston, Scott
Westwood Village Rotary Club
Wethern, Jason
Wetteland, Lance
Wetteland, Linda C.
Wettstein, Gertrude, Daniel & Andreas
Wettstein, Marcus
Wexler, Jeffrey
Wheeler, Bryce A.
Wheeler, Dent
White, Chip
White, Douglas
White, J.R.
White, James M.
White, Michaela
White, Russ
White, Thomas B.
Whitmore, George W.
Whitney Portal Non-Profit Corporation
Wickersham, Betty
Wilderness Society
Wilding, Michael
Wilkinson, Chris
Willard, Dwight M.
Williams, Gary
Williams, Mark
Williams, Mike
Willis, James H.
Wilson, Eric B.
Wilson, James
Wilson, Richard
Wilson, Russell S.
Wing, Fred
Wisenbaker, Eugene M.
Wisson, Art
Witters, Randy
Wittwer, J.R.
Wolar, Glynn G.
Wolinsky, Mauro
Won, Sherwin C.
Wood, Judith
Worcester, Wendy
Wright, Clifford
Wright, David
Wright, Edwin
Wright, William S.
Wullich, John R.
Wylie, Lawrence A.
Yaeger, Philip
Yata, Howard
Yergat, John G.
Yillik, Ray
Young, Anne L.
Younger, Kristina and Mark
Yribarren, Ron and Cathy
Yungfleisch, J.O.
Zaber, Dixie
Zack, Dede
Zaring, Alan
Ziebarth, Marci
Zieglerndi, Jay
Zierenberg, Nancy
Zineer, Keith

VIII

GLOSSARY

CHAPTER VIII. GLOSSARY

A

AMB: The Forest Plan Alternative which emphasizes wildlife habitat with a secondary emphasis on expansion of developed recreation.

AMC: This is a Forest Plan Alternative which has been eliminated. It recommends all Further Planning Areas for wilderness designation.

AMN: See Amenities Alternative.

AMP: See Allotment Management Plan.

AMS: See Analysis of the Management Situation.

AOP: See Annual Operating Plan.

APCD: Air Pollution Control District.

AQRVs: See Air Quality Related Values.

ASQ: See Allowable Sale Quantity.

AUM: See Animal Unit Month.

Acre-foot: The amount of water or sediment that would cover one acre to a depth of one foot (43,560 cubic feet; 326,000 gallons).

Administrative Cost: Costs of required general administration which are prorated over fixed, variable, and investment costs.

Administrative Facilities: Those facilities, such as ranger stations, work centers, and cabins, which are used by the Forest Service in managing the National Forest.

Age Class: One of the intervals, usually 10 to 20 years, into which the age range of vegetation is divided for classification or use.

Air Quality Related Values (AQRVs): A feature or property of an area that is affected in some way by air pollution. Identified values are visibility, odor, flora, fauna, soil, water, geologic feature, and cultural resources.

Allotment: See Range Allotment.

Allotment Management Plan (AMP): A cooperative plan between the Forest Service and the range permittee which sets forth the agreed upon management scheme for the allotment. Besides grazing activities, the plan can cover other resources, such as soil, wildlife, fisheries, and riparian areas.

Allowable Sale Quantity (ASQ): The maximum quantity of timber that may be sold from land capable, available, and suitable for timber production for a time period; usually expressed on an average annual basis.

Alluvial Fan: A geologic feature consisting of rock and soil deposited by running water at the base of a steep slope in the shape of an inverted cone.

Amenity (Amenity Value): A resource for which monetary market values have not been (or cannot be) established; also called a non-priced value.

Amenities Alternative (AMN): The Forest Plan Alternative which maximizes amenities with little regard for the effects on commodity outputs. Wilderness, wildlife, and primitive and semi-primitive dispersed recreation are emphasized.

Analysis of the Management Situation (AMS): A step in the Forest planning process in which the Forest's ability to supply goods and services in response to society's demand for those goods and services is determined.

Animal Unit Month (AUM): The amount of forage required to support a mature cow for one month. (Region 5 uses 1000 lbs./month or 26 lbs./day.)

Annual Operating Plan (AOP): The cooperative plan between the Forest Service and the grazing permittee which sets forth the agreed upon management of the allotment on a seasonal basis.

Arterial Roads: See Roads.

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 by consumers. In Forest planning the term assigned values 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.

B

BACTs: See Best Available Control Techniques.

BLM: Bureau of Land Management, U.S. Department of Interior.

BMPs: See Best Management Practices.

BSS: See Base Sale Schedule.

Background Level (Background, Natural Background): The ever-present environmental conditions or effects above which a phenomenon must manifest itself in order to be detected.

Base Sale Schedule (BSS): The timber sale schedule in which 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. This planned sale and harvest for any decade must not be not greater than the long-term sustained yield capacity of the land.

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: The total value of an output or other outcome.

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 the present time. (Also see Discounting.)

Best Available Control Techniques (BACTs): An emission limitation for air quality subject to the regulations of the Clean Air Act.

Best Management Practices (BMPs): Management actions that are designed to maintain water quality by preventive rather than corrective means.

Bitterbrush: A species of shrub considered palatable and nutritious for both mule deer and domestic livestock.

Board Foot: The amount of wood contained in an unfinished board one inch thick, twelve inches long, and twelve inches wide.

C

CAS: Capable, Available and Suitable land for timber production.

CDF: California Department of Forestry.

CDFG: California Department of Fish and Game.

CEE: See Cost-Efficiency Alternative.

CEQ: See Council on Environmental Quality.

CEQA: See California Environmental Quality Act.

CFR: Code of Federal Regulations. Detailed documentation of federal laws.

CMAI: See Culmination of Mean Annual Increment.

CNDDB: California Native Diversity Data Base.

CNPS: California Native Plant Society.

COWFISH: A computer model designed to analyze the condition of riparian areas in relation to past and current livestock grazing management and to estimate the compatibility of grazing with associated aquatic resources.

CRP: See Coordinated Resource Planning.

CUR: See Current Program.

Caldera: A bowl-shaped geologic feature representing the collapse of a volcanic mountain after an eruption.

California Environmental Quality Act (CEQA): Following the passage of NEPA, the California State Legislature passed an Act in 1970 to declare state policy which will ensure the long-term protection of the environment. The Act will encourage the development and maintenance of a high quality environment now and in the future; provide the people of California with clean air and water, enjoyment of aesthetic, natural, scenic, and historic environmental qualities, and freedom from pollution; and prevent the elimination of fish or wildlife species due to man's activities.

Canopy: The more or less continuous cover of leaves and branches collectively formed by the crowns of adjacent trees in a shrub stand or forest.

Capability: The potential of the land to produce resources and supply goods and services under a set of management practices and at a given level of management intensity. Capability depends upon site conditions such as climate, soils, and geology, as well as the application of management practices such as siviculture.

Capital Investment: Investment in facilities such as roads and structures with specially appropriated funds.

Class I Properties: Archaeological or historic sites that have been determined eligible for or nominated to the National Register of Historic Places.

Class II Properties: Archaeological or historic sites that have not been evaluated against the eligibility criteria (36 CFR 604) for inclusion on the National Register of Historic Places.

Class III Properties: Archaeological or historic sites that have been found to be not eligible for inclusion on the National Register of Historic Places.

Clearcutting: Harvesting of all trees in one area for the purpose of creating a new, even-aged stand. The area harvested may be a patch, stand, or strip.

Collector Roads: See Roads.

Commercial Species: Tree species suitable for industrial wood products.

Commodity (Commodity Value): A resource product for which a monetary value has been established; also called a priced benefit.

Compartment: A unit of forested land, usually between 3,000 and 15,000 acres in size, defined by natural and manmade features and used to facilitate timber planning.

Concentrated Recreation Area: A land area that currently recieves, or could (if developed) potentially receive high-density recreation use.

Condition Class: Description of the existing forest in terms of size, stock density, and age.

Confinement: Restricting fire within determined boundaries established either prior to the fire, during the fire, or in an escaped fire situation analysis. The normal tactic is surveillance only.

Constraint: A limitation; action which cannot be taken or which must be taken.

Consumptive Use: Use of a resource that reduces the supply.

Containment: Surrounding a fire, and any spot fires therefrom, with control line, as needed, which can reasonably be expected to check the fire's spread under prevailing and predicted conditions. The normal tactic is indirect attack and burn to human-made or natural barrier with little or no mop-up.

Contingency Level: A priority setting and decision-making method which takes into account fire situation factors that may significantly affect national, Regional, or Forest fire situations or individual fire response actions.

Control: To complete the control line around a fire, any spot fires therefrom, and any interior islands to be saved, burn 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. The normal tactic is direct attack on the fire, if possible, and mop-up.

Coordinated Resource Planning (CRP): A process that involves all agencies, special interests or individuals concerned with the management of a specific project, resource or issue.

Corridor: A linear strip of land in which existing or planned transportation and utility facilities are or will be located.

Cost: The price paid or what is given up in order to acquire, produce, accomplish, or maintain anything. (See Economic Cost.)

Cost-Effective: Achieving a specified level of outputs under given conditions for the least cost.

Cost-Efficiency Alternative: This Forest Plan Alternative maximizes cost efficiency with a mix of land allocations and management practices available on the Inyo National Forest.

Cost-Efficiency: A measure of how productive an input is in producing outputs. Measured by Present Net Value (PNV) in Forest planning. (See Economic Efficiency.)

Council on Environmental Quality (CEQ): An advisory council to the President established by the National Environmental Policy Act of 1969. The CEQ reviews federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters.

Cover: Vegetation used by wildlife for protection from predators and weather conditions, especially during reproduction.

Cubic Foot: The amount of timber equivalent to a piece of wood measuring one foot by one foot by one foot (6.5 board feet on the Inyo National Forest).

Cubic Foot per Second (cfs): Unit measure of streamflow or discharge, equivalent to 449 gallons per minute or about two acre-feet per day.

Culmination of Mean Annual Increment (CMAI): The point where the average annual growth of a stand of timber no longer increases.

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 to sites, structures, buildings, districts, and objects associated with or representative of people, cultures, and human activities and events.

Current Program (CUR): The No Action Alternative. This Forest Plan Alternative represents the condition expected to exist in the future if current management direction continued unchanged.

D

DBH: See Diameter Breast Height.

DEIS: Draft Environmental Impact Statement. (See Environmental Impact Statement.)

DWP: City of Los Angeles, Department of Water and Power.

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.

Dependent Species: A species for which a habitat element (snags, vegetative type) is deemed essential for the species to occur regularly or to reproduce.

Developed Recreation Site: A relatively small, distinctly defined area where facilities are provided for concentrated public use (campgrounds, picnic areas).

Development Scale: A predetermined scale for recreation site development which guides the degree of site modification and kind of facilities to be installed as shown below:

Recreation Opportunity Spectrum Class	Development Scale	Levels of Site Modification
Primitive	1	Minimum site modification. Rustic or rudimentary improvements designed for protection of the site rather than comfort of the users. Use of synthetic materials excluded. Minimum controls are subtle. No obvious regimentation. Spacing informal and extended to minimize contacts between users. Motorized access not provided or permitted.
Semi-Primitive Motorized and Non-Motorized	2	Little site modification. Rustic or rudimentary improvements designed primarily for protection of the site rather than the comfort of the users. Use of synthetic materials avoided. Minimum controls are subtle. Little obvious regimentation. Spacing informal and extended to minimize contacts between users. Motorized access provided or permitted. Primary access over primitive roads. Interpretive services informal, almost subliminal.
Roaded Natural and Roaded Modified	3	Site modification moderate. Facilities about equal for protection of site and comfort of users. Contemporary and rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about 3 family units per acre. Primary access may be over high standard roads. Interpretive services informal, but generally direct.
Rural	4	Site heavily modified. Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials. Extensive use of artificial surfacing of of roads and trails. Vehicular traffic control usually obvious. Primary access usually over paved roads. Development density 3-5 family units per acre. Plant materials usually native. Interpretive services often formal or structured.
Urban	5	High degree of site modification. Facilities mostly designed for comfort and convenience of users and usually include flush toilets; may include showers, bathhouses, laundry facilities, and electrical hookups. Synthetic materials commonly used. Formal

walks or surfaced trails. Regimentation of users is obvious. Access usually by high-speed highways. Development density 5 or more family units per acre. Plant materials may be foreign to the environment. Formal interpretive services usually available. Designs formalized and architecture may be contemporary. Mowed lawns and clipped shrubs not unusual. This category applies to private lands.

Diameter Breast Height (DBH): The diameter of a tree measured 4.5 feet from the ground.

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.)

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 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 between benefits and costs occurring at different points in time.

Dispersed Recreation: Outdoor recreation which occurs outside of constructed and maintained recreational facilities (scenic driving, hunting, backpacking, nordic skiing).

District Ranger: The official responsible for administering the National Forest System Lands on a Ranger District.

Diversity: The distribution and abundance of different plant and animal communities and species within an area.

Diversity Index: A mathematical expression of the relative degree of wildlife habitat diversity per unit of area: $DI = \frac{TP}{2 / \overline{A \times pi}}$

where TP is the total perimeter of an area, plus any browsable edge within the area in meters or feet, A is the area in square meters or square feet, and pi is 3.1416.

E

EA: See Environmental Assessment.

EIC: See Ending Inventory Constraint.

EIS: See Environmental Impact Statement.

EPA: Environmental Protection Agency.

EPP: See Erosion Prevention Plan.

EVC: See Existing Visual Condition.

Economic Cost: Total fixed and variable costs for inputs, including costs incurred by other public and private parties, opportunity costs, and cost savings.

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.

Endangered Species: Plant or animal species identified by the Secretary of the Interior and listed in the Federal Register as in danger of extinction throughout all or a significant portion of its range.

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.

Environmental Analysis: An analysis of alternative actions and their predictable short- and long-term environmental consequences.

Environmental Assessment (EA): A concise public document required by the regulations implementing the National Environmental Policy Act that briefly provides sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.

Environmental Consequences (Effects or Impacts): The physical, biological, social, and economic results of implementing a given alternative.

Environmental Impact Statement (EIS): A statement of the environmental effects which would be expected to result from proposed alternative management actions.

Erosion: The detachment and movement of soil from the land surface by wind, water, or gravity.

Erosion Prevention Plan (EPP): An integrated erosion plan which states the Best Management Practices necessary to protect the soil and water resources on ski areas. The techniques, the scheduling of work, and the priorities for treatment are all addressed in the plan.

Escarpment: A steep land form characterized by a face abruptly terminating high lands.

Even-Aged Management: Management of forest stands that results in trees of essentially the same age growing together. The following methods produce even-aged stands:

Clearcutting: The removal, in a single cut, of all trees in a stand larger than seedlings.

Shelterwood Cutting: The removal of all trees in a series of two or more cuts over a period of not more than 20 years.

Seed Tree Cutting: Similar to clearcutting, except that a few of the better trees of the desired species are left scattered over the area to provide seed for regeneration.

Even-Aged Stand: A forest stand composed of trees having no or relatively small differences in age.

Existing Visual Condition (EVC): A description of the degree to which the natural landscape has already been altered.

F

FEIS: Final Environmental Impact Statement (See Environmental Impact Statement.)

FERC: Federal Energy Regulatory Commission.

FIL: See Fire Intensity Level.

FLPMA: Federal Land Policy and Management Act.

FLW: The benchmark which maximizes Present Net Value (PNV) for non-market resources.

FPA: Further Planning Area. (See Further Planning.)

FSH: Forest Service Handbook.

FSM: Forest Service Manual.

FVC: See Future Visual Condition.

FY: Fiscal Year--October 1 through September 30.

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.

Fire Intensity Level (FIL): A number on a scale of one to six (one being the lowest), which reflects the rate of heat release (BTU/second) per unit of fire front (in feet).

Fixed Cost: A cost committed for the planning period. In Forest planning, the total cost of the minimum level benchmark.

Forage: All browse and herbaceous plants that are available to feed livestock or wildlife.

Forb: Any herbaceous plant other than grasses or grass-like plants.

Foreground, Middleground, Background:

Foreground - the portions of a view between the observer and up to 1/4 or 1/2 mile distance.

Middleground (middle distance) - the space between the foreground and the background; the area located from 1/4-1/2 to 3-5 miles from the viewer.

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.

Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA): An Act of Congress requiring the preparation of an assessment of the nation's renewable resources and a program for their management. Forest planning is a part of this national planning process.

Forest Highways: A designated forest road under the jurisdiction of, and maintained by, a public authority that is subject to the Highway Safety Act. Forest Highways are designated, as such, where the use and development of National Forest System lands affect the public road system necessitates Federal investments to ensure these roads are safe and adequate.

Forest Supervisor: The official responsible for administering the National Forest System lands in a Forest Service administrative unit (one or more National Forests).

FORPLAN: A linear programming model used for developing and analyzing Forest planning alternatives.

Fuels: Any material capable of sustaining or carrying a forest fire, usually natural material both live and dead.

Fuelwood: Wood cut into short lengths for burning.

Further Planning: A category into which certain roadless areas on the Forest were placed by the RARE II study and in which they were retained by the California Wilderness Act of 1984. Recommendations for the management (wilderness or nonwilderness) of Further Planning Areas will be made in the Forest plan.

Future Visual Condition (FVC): Describes the projected appearance of the landscape (from natural to altered) under each alternative by the fifth decade.

G

GAWS: See General Aquatic Wildlife System.

Game Species: See Harvest Species.

General Aquatic Wildlife System: A combined aquatic data base and information system. It is the quantitative method used to inventory, monitor, describe, and predict fisheries habitat condition and vulnerability from existing to potential land uses.

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 may not have a specific date for completion.

Goods and Services: The various outputs, including onsite uses, produced by forest and rangeland renewable resources.

Grazing: Consumption of forage by animals; typically used to describe domestic livestock use (under permit) of National Forest land.

Grazing Allotment: See Range Allotment.

Grazing Permittee: See Range Permittee.

Groundwater: Subsurface water in the part of the ground that is wholly saturated.

Group Selection: The cutting method in which trees are removed periodically in small groups resulting in openings that do not exceed an acre or two in size. The result is an uneven-aged stand.

H

H2O: The benchmark which maximizes water yields for five decades.

HVDC: High Voltage Direct Current.

Habitat: The sum of environmental conditions of a specific place that is occupied by an organism, a population, or a community.

Habitat Capability Model: A set of habitat factors determined necessary to support a given wildlife species or group of species.

Hacking: A method of gradually releasing birds of prey into the wild.

Harvest Species: Species of animals or fish that are hunted or fished for human consumption.

Herbicide: A substance used to inhibit or destroy plant growth.

Holding Area: See Staging Area.

I

ID Team: See Interdisciplinary Team.

IPM: See Integrated Pest management.

Inputs: Land, labor, and capital required to produce outputs. Inputs are generally represented by activity costs.

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 wherein pests, their impacts, and management are considered an integral part of resource management planning and decision-making.

Intensity Level: See Fire Intensity Level.

Interdisciplinary Team (ID Team): A group of individuals with different training who solve a problem or perform 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 Streams: Streams that do not contain water year-round.

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.

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.

K

K-V Funds: Funds collected from timber sales under the Knutson-Vandenberg Act of 1930 to be used for reforestation, timber stand improvement, and to protect and improve the future productivity of renewable resources on timber sale areas.

KGRA: Known Geothermal Resource Area: On the Inyo, this term refers to the Mono-Long Valley KGRA located on the northern part of the Forest, north and east of Mammoth Lakes and south of Mono Lake.

Key Fawning Area: An area important for mule deer during the fawning season (early summer). It typically includes good vegetative cover to hide fawns from predators and protect them from severe weather.

Key Winter Range: An area important for mule deer during the winter months. It typically includes palatable and nutritious shrub species on lands mostly free of snow during the winter.

L

LBU: This Forest Plan Alternative was eliminated. It estimates the expected outputs and services that could be provided in the future if the 1982 budget were cut by 25%.

LTSYC: See Long-term Sustained Yield Capacity.

Landline Location: To locate, survey, mark, and post the boundaries of National Forest System lands.

Landownership Adjustment: The transfer of the ownership of lands by land exchange, land purchase, donations or other methods.

Lease Blocks I and II: Land units that have been leased for geothermal exploration and development; located north of Mammoth and south of June Lake, both east and west of Highway 395. (See map in Chapter III of the EIS under Minerals: Leasable.)

Lek: Sage grouse strutting grounds used during the mating season for courtship displays.

Lifestyle: The characteristic way people live, indicated by consumption patterns, work, leisure, expressed values, and other behavior.

Local Roads: See Roads.

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 intensity of management consistent with multiple-use objectives.

Low Standard Service: A level of recreation management (including maintenance and services) prescribed when recreation costs are reduced in an alternative.

M (MM): As a prefix to a unit of measure, M indicates thousand; MM indicates million. Common examples are:

MAUM - thousand animal unit months

MBF (MMBF) - thousand (million) board feet

MCF (MMCF) - thousand (million) cubic feet

MRVD (MMRVD) - thousand (million) recreation visitor days

M(MM)$ - thousand (million) dollars

M acres - thousand acres.

MA: See Management Area.

MBNFSA: Mono Basin National Forest Scenic Area.

MCWD: Mammoth County Water District.

MIS: See Management Indicator Species.

MIR: See Minimum Implementation Requirements.

MKT: A Forest Plan Alternative which was eliminated. It emphasized high level outputs of market resources.

MKV: The benchmark which maximizes Present Net Value (PNV) for market value resources.

MLV: The benchmark which emphasizes Minimum Level Management.

MMR: See Minimum Management Requirement.

Mammoth/June: The geographic area bounded by U.S. 395 on the east; State Route 203 on the south; the John Muir and Ansel Adams Wildernesses on the west; and the ridgeline of the June Lake complex on the north.

Management Area (MA): A contiguous area of land used in planning, to which one or more prescriptions are applied. Management areas do not vary between alternatives; however, the prescriptions applied to them do vary.

Management Concern: A management problem requiring resolution.

Management Direction: A statement of multiple use and other goals and objectives, the management prescriptions, and the associated standards and guidelines for attaining them.

Management Emphasis: The primary focus of a multiple-use management prescription or of an alternative.

Management Indicator Species (MIS): A wildlife species whose population and trend in a certain habitat type indicates the population and trend of other species that are also dependent on that habitat type.

Management Intensity: The management practice or combination of management practices and their associated costs designed to obtain different levels of goods and services.

Management Prescription: Management practices selected and scheduled for application on a specific area to attain multiple-use benefits and other goals and objectives.

Market Outputs: Outputs normally exchanged in markets as evidenced by transactions. Timber, range, developed recreation, and minerals are market outputs produced on the Inyo.

Maximum Modification (VQO): See Visual Quality Objectives.

Mean Annual Increment: The average yearly growth of a tree, calculated by dividing the volume of the tree by its age.

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.

Mineral Production: Extraction of 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.

Minerals, Leasable: Minerals which are developed (explored, mined, extracted, etc.) by a permit or lease, in contrast with mineral 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, and deposits of sulfur in Louisiana and New Mexico. Locatable minerals on acquired land are leasable.

Minerals, Locatable: Minerals on public domain lands which are mined and processed to recover intrinsically valuable substances such as gold and copper and 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. Developed through a claims location and patent process. Locatable minerals on acquired land are leasable.

Minerals, Salable: Minerals that occur in high-volume, low-unit-value deposits and have no distinct or special economic value over similar materials. Disposal is authorized through a sales system, by the Materials Act of 1947. Examples are sand, gravel, stone, and common clay.

Minimum Implementation Requirements (MIR): The management requirements which are necessary to ensure a minimum level of public acceptance.

Minimum Management Requirements (MMR): Constraints or activities necessary to maintain viable wildlife populations and to prevent permanent impairment of the productivity of the land.

Mining Claims: That portion of the public estate held for mining purposes in which the right of exclusive possession of locatable mineral deposits is vested in the locator of a deposit.

Mitigate: Actions to avoid, minimize, reduce, eliminate, or rectify the adverse impacts of a management practice.

Modification (VQO): See Visual Quality Objectives.

Monitoring and Evaluation: The periodic evaluation on a sample basis of management practices prescribed by the Forest plan, to determine how well objectives have been met, how closely management standards have been applied, and whether actual environmental consequences are similar to those predicted.

Multiple Use: The management of all 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.

N

NPB: See Net Public Benefit.

NEPA: See National Environmental Policy Act.

NFMA: See National Forest Management Act.

NFMAS: See National Fire Management Analysis System.

NFS: See National Forest System Land.

NON: The benchmark which maximizes Present Net Value (PNV) with a recommendation that no Further Planning Areas become wilderness.

NNL: National Natural Landmarks. (See National Registry of Natural Landmarks.)

NRT: See National Recreation Trail.

National Environmental Policy Act (NEPA): The 1969 Act of Congress that represents a basic national charter for protection of the environment.

National Fire Management Analysis System (NFMAS): A broad process to assist fire managers in fulfilling their planning and analysis roles. The system consists of: (1) Fire Management Analysis, and (2) Budget analysis.

National Forest Management Act (NFMA): A 1976 Act of Congress that amends the 1974 Forest and Rangeland Renewable Resources Planning Act (RPA). NFMA requires the preparation of Regional and Forest plans and guides their development.

National Forest System (NFS) Land: Lands administered by the U.S. Department of Agriculture, Forest Service.

National Recreation Trail (NRT): A trail designated by the Secretary of the Interior or the Secretary of Agriculture under the National Trails System Act. National recreation trails are designed to provide a variety of outdoor recreation uses in or reasonably accessible to urban areas.

National Register of Historic Places: A listing maintained by the U.S. Department of Interior, National Park Service of areas that have been designated as historically significant. The National Register includes places of local and state significance, as well as those of value to the nation in general.

National Registry of Natural Landmarks: A register of areas possessing such exceptional values or qualities for illustrating or interpreting the natural heritage of our nation that they are considered to be of national significance. Some examples are significant natural landforms, land or aquatic ecosystems, and geologic formations.

National Wild and Scenic River System: Rivers with outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values and 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 (1964) and subsequent wilderness designations irrespective of the department or agency having jurisdiction.

Net Public Benefit (NPB): The overall 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.

Nondeclining Yield: Timber scheduled for harvest so that any given decade's production does not fall below the previous decade's production.

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, water. Although not normally exchanged in markets, the Forest Service calculates and assigns monetary values to these outputs for analysis purposes.

O

OHV: See Off-Highway Vehicle.

OSV: See Over-Snow Vehicle.

Objective: A time-specific statement of measurable results that respond to pre-established goals.

Objective Function: A term used in linear programming referring to the item to be maximized (or minimized) in the problem's solution; such as maximize PNV, maximize timber.

Off-Highway Vehicle (OHV): Vehicles that can be operated off of constructed roads. Examples include 4-wheel drives, dune buggies, and some motorcycles.

Over-Snow Vehicle (OSV): Over-snow tracked or ski vehicle.

Older Seral Stages: Age classes of trees or shrubs that have passed the period of young, vigorous growth. Many wildlife species are dependent on the older seral stages of forested environments; these stages include large trees generally exceeding 50 feet in height with a total tree canopy of 40 percent or greater. Commercial timber stands are typically harvested before reaching older seral stages.

Opening: An area of land from which timber has been harvested (generally using even-aged management). The maximum size of openings is 5 to 40 acres for forest types on the Inyo. 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.

Outputs: Goods, services, or on-site uses produced from forest and rangeland resources.

Overstory: That portion of the trees in a forest which forms the upper or uppermost layer.

P

P: Primitive. (See Recreation Opportunity Spectrum.)

PAOT: See Persons-At-One-Time.

PILT: Payment in Lieu of Taxes.

PNV: See Present Net Value.

PRO: An Alternative which has been eliminated from the Forest Plan. This Alternative's objective was to determine the Forest's ability to meet timber targets from the Region's high-productivity Alternative.

PRF: See Preferred Alternative.

PSD: See Prevention of Significant Deterioration.

PSW: Pacific Southwest (Region 5 of the Forest Service)

Partial Retention (VQO): See Visual Quality Objectives.

Perennial Stream: A stream that flows throughout the year and from source to mouth.

Permittee: An individual or organization that conducts activities on National Forest land under the stipulations of a Forest Service permit. Examples of permitted activities are grazing, ski area operation, resort operation, and hydroelectric plant operation.

Persons-At-One-Time (PAOT): The unit of measure for recreation capacity defined as the number of people that can use a facility or area at one time.

Physiographic Province: A region having a particular pattern of relief features or land forms that differs significantly from that of adjacent regions. The Inyo National Forest lies in two physiographic provinces--the Sierra Nevada and the Great Basin.

Piagi: The larval or caterpillar stage of the Pandora moth during which time it defoliates Jeffrey pine trees by eating the needles. Piagi is one of the native foods of the Paiute/Shoshoni People.

Planning Period: One decade. The time interval within the planning horizon that is used to show incremental changes in yields, costs, effects, and benefits.

Planning Records: A system that documents data collections, analyses, interdisciplinary team decisions, and activities that result from the process of developing a Forest Plan, revision, or significant amendment.

Plantation: A stand of trees resulting from planting or artificially seeding an area.

Preferred Alternative (PRF): The Forest Plan Alternative which emphasizes a mixture of commodity and amenity resource outputs to optimize Net Public Benefit (NPB).

Prescribed Fire: Intentional use of fire under predetermined weather and fuel conditions to achieve specific objectives such as rejuvenating or type-converting vegetation.

Prescription (Rx): The set of management practices applied to a specific area to attain specific objectives. Region 5 distinguishes between FORPLAN prescriptions and management prescriptions. FORPLAN prescriptions are sets of "pure" management activities without spatial allocation or standards and guidelines. Management prescriptions are written as a result of allocating FORPLAN solutions to specific lands areas (Management Areas) and imposing standards and guidelines. (See also Management Areas.)

Present Net Value (PNV): The difference between the value of discounted benefits derived from all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area.

Preservation (VQO): See Visual Quality Objectives.

Prevention of Significant Deterioration (PSD): A planning and management process of the Clean Air Act for allocation and use of air resources.

Productive Reserved: A category of land that is capable of producing commercial timber products but has been removed from the managed timber base by congressional or administrative designation (such as Wilderness or Research Natural Areas).

Public Issue: A subject or question of widespread public interest identified through public participation relating to management of National Forest System lands.

R

R: Rural. (See Recreation Opportunity Spectrum.)

RARE II: See Roadless Area Review and Evaluation II.

REA: Rural Electric Association.

RGN: The benchmark which maximizes domestic livestock grazing for five decades.

RIM: See Recreation Information Management.

RM: Roaded Modified. (See Recreation Opportunity Spectrum.)

RN: Roaded Natural. (See Recreation Opportunity Spectrum.)

RNA: See Research Natural Area.

ROS: See Recreation Opportunity Spectrum.

RPA: The Forest and Rangeland Renewable Resources Planning Act of 1974. Also refers to the national assessment and recommended program developed every five years to fulfill the requirements of the Act.

RPA Program: The national direction (under RPA) for long-range management of renewable resources on National Forest System lands. This direction serves as the basis for the Regional targets assigned to each Forest.

RVD: See Recreation Visitor Day.

Rx: See Prescription.

Range:

Primary range - includes areas which are readily accessible, have available water and will be used before livestock significantly graze other areas.

Secondary range - areas less preferred by livestock which will ordinarily not be grazed significantly until the primary range has been used.

Suitable - land that is or can be made accessible to livestock, that produces forage or has inherent forage-producing capabilities, and that can be grazed on a sustained yield basis under given management goals.

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 (such as trees) not suitable for livestock consumption.

Unsuitable - area that should not be grazed by livestock because of unstable soils, steep topography, or inherent low potential for forage production.

Range Allotment: An area designated for grazing a prescribed number and kind of livestock.

Range Permittee: An individual who has been granted written permission (a grazing permit) to graze livestock for a specific period on a range allotment.

Ranger District: An administrative unit of a National Forest supervised by a District Ranger who reports to the Forest Supervisor.

Rare Species: One that, although not presently threatened with extinction, is in such small numbers throughout its range that it may be endangered if its environment worsens; the "rare" category is a State category, not a federal one.

Reach: A continuous unbroken stretch of a stream with homogeneous characteristics; an extremity of a stream; a specified portion of a stream.

Recovery: The achievement of viable populations of threatened or endangered plant or animal species.

Recreation Experience Level: A classification (using a scale of 1 for primitive to 5 for modern) of the level of development in camp and picnic sites pertaining to the types of recreation opportunities and modifications in the environment that can be expected.

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 three miles or more from conventional (two-wheel drive) roads, generally 5,000 acres or more in size, with an essentially unmodified natural environment. Users will probably experience a high degree of isolation, closeness to nature, tranquility, and self-reliance.

b. Semi-Primitive Non-Motorized (SPNM) - An area more than 0.5 mile but less than 3 miles from conventional roads, 2,500 to 5,000 acres in size, with only subtle modifications of an otherwise natural setting. Users will have experiences similar in kind (but to a lower degree) to those found in the Primitive ROS class.

c. Semi-Primitive Motorized (SPM) - Same as Semi-Primitive Non-Motorized but with motorized use of primitive roads and trails. Users would have experiences similar to those in the SPNM class, with the addition of motor vehicles.

d. Roaded Natural (RN) - An area accessible by conventional roads; resource modifications and structures are evident but harmonize with the natural environment. Users would experience isolation and interaction with other parties in roughly equal proportions.

e. Roaded Modified (RM) - Same as Roaded Natural, except that resource modifications and structures are more evident and the probability of interaction with other parties would be much higher.

f. Rural (R) - The setting is accessible by conventional road and substantially modified with structures or other cultural modifications. Users would experience much interaction with others; there would be little opportunity for isolation.

g. Urban (U) - The setting is strongly dominated by structures, highways and streets. Users would not consider this setting attractive for conventional forest recreation. This category applies to privately-owned land on the Forest.

Recreation Visitor Day (RVD): Twelve hours of recreation use in any combination of persons and hours such as one person for twelve hours or three persons for four hours.

Recruitment: Replenishment. In terms of wildlife biology, to achieve successful reproduction or to replenish a supply of habitat elements, such as snags or down logs.

Reforestation: Reestablishing a crop of trees on forest land by natural or artificial methods.

Regeneration: Same as reforestation.

Regeneration Cutting: Harvesting timber stands so that new crops can be planted. This method is usually applied to stands which cannot economically be managed for commercial production because of poor stocking, health, thrift, quality, or species composition.

Region 5: The Pacific Southwest Region of the Forest Service, including primarily the National Forests in California, with small additional acreage in Oregon and Nevada.

Regional Forester: The official responsible for administering a single Region of the Forest Service.

Regulation Classes:

Regulation Class I silvicultural prescriptions are even-aged management prescriptions for existing timber stands with full timber yields expected. These represent harvest regimes on lands not otherwise constrained that result in optimum timber production in volume and/or value. Practices in this class are:

a. Clearcutting without thinning (nonintensive harvest in FORPLAN)

b. Shelterwood without thinning (nonintensive harvest in FORPLAN)

c. Clearcutting with thinning(s) prior to harvest.

Regulation Class II silvicultural prescriptions address "special conditions" for existing timber stands. Reduced timber yields would be expected. These represent harvest regimes on lands designated to meet nontimber objectives that result in a mean rotation longer than optimum for timber production. Generally other values are accounted for by constraints on harvest rates, not by modifications to yield tables; the exceptions are group selection (item e) and specialized prescriptions (item f). Practices in this class are:

a. Clearcutting without thinning (nonintensive harvest in FORPLAN)

b. Shelterwood without thinning (nonintensive harvest in FORPLAN)

c. Clearcutting with thinning(s) prior to harvest

d. Shelterwood with thinning(s) prior to harvest

e. Group selection (harvest openings less than two acres in size) or single tree selection

f. Specialized prescriptions that contain unique yield tables and/or constraints on harvest rates such as deer winter range prescriptions with wider spacing and no release.

Regulation Class III prescriptions are for existing stands which are equivalent to the former "marginal timber yield" categorization. Timber outputs resulting from prescriptions in this class will be regulated as a separate, non-interchangeable component of the allowable sale quantity. Practices in this class are:

a. Removal of single trees or small groups of trees for sanitation, salvage, or hazard reduction (assume yields based on past 10-year experience)

b. Stand maintenance along zones to maintain the vigor of the stands; yields are often linked to other harvest in adjacent areas; generally this practice is used for streamside and highway zones if not otherwise managed by independent sales

c. Prescriptions for marginal productivity (lands producing less than 20 cubic feet per acre per year) and/or disputed regeneration

d. Group selection (clearcuts less than two acres in size or single tree selection.

Rejuvenation: The treatment of vegetation (by burning or chemical or mechanical means) so that vigorous, young growth is stimulated.

Relicted Land: The land that has been exposed by the declining level of Mono Lake and which lies between the elevation of 6,417 feet and Mono Lake as it varies from day to day.

Research Natural Area (RNA): An area established specifically to preserve a representative sample of an ecological community; primarily for scientific and educational purposes.

Resident Trout: Trout that live year-round and reproduce in a stream or lake (contrasted with trout raised in a fish hatchery, planted, and removed by anglers).

Retention (VQO): See Visual Quality Objectives.

Right-of-Way: 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.

Riparian Area: Geographically delineable areas with distinctive resource values and characteristics that are comprised of the aquatic and riparian ecosystems.

Riparian areas on the Inyo National Forest consist of: (1) as a minimum, areas that are a 100-foot horizontal distance from the edge of standing bodies of water, lakes, and perennial streams, and (2) all wetlands, including all ephemeral or intermittent streams which support riparian vegetation, wet meadows springs, seeps, and bogs. See Streamside Management Zones for ephemeral and intermittent streams not included in wetlands.

Riparian Area-Dependent Resources: Water-dependent vegetation, wildlife, fish (and other aquatic animals), soil, and water.

Roadless Area: As defined by the Roadless Area Review and Evaluation (RARE), 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.

Roadless Area Review and Evaluation (RARE) II: The assessment of roadless areas within the National Forests as potential wilderness areas as required by the National Wilderness Act. This refers to the second such assessment which was documented in the Final Environmental Impact Statement of the Roadless Area Review and Evaluation process, January 1979.

Roads: A general term denoting a route 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.

ROS Class: See Recreation Opportunity Spectrum.

Rotation Age: The length of time between the formation or regeneration of a tree stand and its final cutting.

S

SAOT: See Skiers-at-one-time.

SCE: Southern California Edison.

SHPO: State Historic Preservation Officer.

SIA: See Special Interest Area.

SMZ: See Stream Management Zone.

SPM: Semi-Primitive-Motorized. (See Recreation Opportunity Spectrum.)

SPNM: Semi-Primitive-Non-Motorized. (See Recreation Opportunity Spectrum.)

SRI: See Soil Resource Inventory.

SSR: See Stream Channel Stability Rating.

Salvage: Dead or deteriorating trees often cut before their timber becomes worthless.

Sanitation Harvest: The removal of dead, diseased, insect infested, damaged, or otherwise low vigor trees to minimize losses from pests.

Sediment: Solid material, both mineral and organic, that is suspended in or being transported by water.

Selection Cutting: See Group Selection and Single Tree Selection.

Sensitive Species: Species that have appeared in the Federal Register as proposed additions to the endangered or threatened species list, and those that are on an official state list or are recognized by the Regional Forester as needing special management in order to prevent them from becoming endangered or threatened.

Sensitivity Level: A particular degree or measure of viewer interest in the scenic qualities of the landscape.

Seral Stage: The developmental or successional stage of a biological community (related to age class).

Shelterwood Cutting: Cutting a timber stand in two or more stages. The first cutting leaves some mature trees which provide shade to help seedlings get established. The shelterwood system is a form of even-aged timber management.

Silviculture: Generally, the science and art of cultivating forest tree crops.

Silvicultural System: The entire process by which forest stands are tended, harvested, and replaced. A silvicultural system includes all cultural practices performed during the life of the stand such as regeneration cutting, fertilization, thinning, improvement cutting, and use of genetically improved sources of tree seeds and seedlings to obtain multiple-resource benefits. Silvicultural systems are classified as even- or uneven-aged.

Single Tree Selection: 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 Preparation: The preparation of an area for regeneration, involving the removal of slash and/or competing vegetation and usually the exposure of bare mineral soil.

Size Class: For purposes of Forest planning, size class refers to the three intervals of tree stem diameter used for classification of timber.

Seedling/Sapling: less than five-inch diameter.

Pole Timber: five to eight-inch diameter.

Sawtimber: greater than eight-inch diameter.

Skiers-At-One-Time (SAOT): A measure of ski area capacity represented by the number of skiers that can occupy the ski area at once.

Slash: The residue left on the ground after timber cutting or after other disruptions such as storms or fires. Slash includes unutilized logs, uprooted stumps, broken stems, branches, twigs, leaves, bark, and chips.

Small Game: Birds and small mammals normally hunted or trapped.

Snag: A standing dead tree from which the leaves and most of the branches have fallen.

Soil Productivity: The natural capacity of a soil to produce a specified plant species or sequence of species under a specified system of management.

Soil Resource Inventory (SRI)/Soil Survey: The systematic examination, description, classification and mapping of soils.

Soil Surveys: The systematic examination of soils in the field and laboratory, including description, classification, and mapping of soils, and the interpretation of soils according to their productivity and behavior under use and management.

Order I:	Very intensive investigations used for site-specific work, such as individual building sites, experimental plots, and irrigation and drainage studies.
Order II:	Intensive investigations used for project level work.
Order III:	Intermediate level investigations used for forest planning purposes on lands subject to heavy recreational use or timber management.
Order IV:	Broad reconnaissance investigations use for forest-wide planning.

Special Interest Area (SIA): Areas established and managed for their unique or outstanding natural values, such as botanical, geological, scenic, or historical features.

Special-Use Permit: A permit authorizing the occupancy and use of National Forest land in the manner specified.

Species: A fundamental category of plant or animal classification.

Staging Area/Holding Area: An area in which mule deer gather during migration, typically while waiting for weather to clear or snow to melt before moving to higher elevations.

Stand: A community of trees or other vegetation types that is sufficiently uniform in composition, constitution, age, spatial arrangement, or condition to be distinguishable from adjacent communities and to thus form a management entity.

Standard Service: Management of recreation facilities which provides for vegetation management, full maintenance of facilities, appropriate toilet cleaning and garbage pickup, and information and interpretive services for the recreation area.

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 fully utilize the growth potential of the land.

Stratum: A three-part timber category based on tree species, age class, and stocking level.

Stream Channel Stability Rating (SSR): A method for evaluating stream channel stability was developed to evaluate the resistance of mountain stream channels to the detachment of bed and bank materials and to provide information about the ability of streams to adjust to and recover from potential changes in flow and/or increases in sediment production. The system was developed to be used in conjunction with other hydrologic analyses to augment silvicultural prescriptions and improve watershed management. A brief description of the items rated and the modifications employed in this study area included below.

The stream channel stability evaluation procedure involves subjective field evaluation of fifteen items. The channel cross-section is divided into three components: upper banks, lower banks, and channel bottom. Upper banks are rated for slope, mass wasting, debris jam potential, and bank protection by vegetation. Lower banks are rated for channel capacity, bank rock content, obstructions, cutting, and deposition. Channel bottoms are rated for rock angularity, brightness, consolidation, scouring and deposition, and clinging aquatic vegetation.

Each item is given a rating value which is weighed in terms of its importance as an indication of streambank stability. For instance, scouring and deposition of the channel bottom, which is an important factor, is heavily weighted, ranging from 6 to 24. In contrast, channel capacity, rock angularity, brightness, and clinging aquatic vegetation are all less important, and have values ranging only from one to four.

After a stream reach has been rated, values for the items are totaled. A score of less than 38 is considered "excellent", indicating a stable, erosion-resistant stream. A score of 39 to 76 is considered "good"; a score of 77 to 114 is considered "fair", and a score of 115 to 142 is considered "poor". It is important to note that a low score indicates stable streambank conditions, while a high score indicates unstable, eroded streambanks.

Stream 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. May include floodplains and wetlands, riparian areas, inner gorges, perennial streams, and intermittent streams showing signs of recurrent annual scour or deposition.

Succession: The gradual changing of a biological community over time (including the replacement of one community by another) until that change comes to a halt and the climax community is reached.

Successional Stage: A phase in the gradual changing of a biological community (same as seral stage).

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 manage

Suitable Timber Land: See Tentatively Suitable Timber Land.

Suppression: Actions taken to extinguish or confine a fire.

Sustained Yield: See Long-term Sustained Yield Capacity.

T

TBR: The benchmark which maximizes timber production for one decade.

T&E: Threatened and endangered species. (See Threatened Species, Endangered Species.)

TSI: See Timber Stand Improvement.

Target: A statement used to express planned results to be reached within a stated time period.

Tentatively Suitable Timber Land: Lands tentatively considered suitable for commercial timber management must meet the following criteria:

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 five years after final harvest.

e. Where adequate information is available to project responses to timber management activities.

Term Permit: A grazing permit or a special-use permit issued for a specified period of time, but which has a termination date.

Thinning: Cutting timber to improve the quality and growth of the trees that remain. In commercial thinning, merchantable timber (timber of salable quality), is cut. In precommercial thinning, non-merchantable trees are cut.

Threatened Species: Any species which is likely to become an endangered species within the foreseeable future and which has been designated in the Federal Register as a threatened species.

Tiering: Refers to the practice of analyzing general alternatives and environmental consequences in broader Environmental Impact Statements and more detailed alternatives and consequences in site-specific environmental documents. The more specific environmental document is then tiered to the analysis found in the more general one.

Timber Production: The growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs and bolts for industrial or consumer use. Does not include fuelwood.

Timber Stand Improvements (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.

Trade-off: The impact on an output or cost caused by changing another output or cost.

Trailhead: The parking, signing, and other facilities available at the beginning of a trail.

Trampling and chiseling: A measure of the degree of livestock utilization and the extent of livestock damage along a stream reach. Trampling is defined as hoof marks, soil disturbance, soil compaction with evidence of hoof marks; bare soil with evidence of hoof marks, and trampled vegetation. Cattle trails bordering the stream or crossing it are included in this concept only when basal vegetation has been removed and bare ground has been exposed. Chiseling is identified by arc-shaped cuts in streambanks caused by cattle or sheep hooves.

Tuff: A type of light-colored volcanic rock commonly found on the Inyo National Forest north of Bishop.

Type Conversion: The conversion of one vegetation type or plant species to another, such as shrub to grass or sagebrush to bitterbrush.

U

U: Urban. (See Recreation Opportunity Spectrum.)

USFS: United States Forest Service, Department of Agriculture.

USFWS: United States Fish and Wildlife Service.

USGS: United States Geological Survey.

Understory: Low-growing vegetation such as grasses, shrubs, or small trees growing under a stand of trees. Also, that portion of trees in a forest stand below the overstory.

Uneven-aged Management: Management of forest stands which results in trees of several or many ages growing together. Cutting methods producing uneven-aged stands are single-tree selection and group selection.

Unplanned Ignition: A fire started at random by either natural or human causes or a deliberate arson-set fire.

Unsuitable Timber Lands: Refers to land which is not suited for timber production according to the criteria listed above under Tentatively Suitable Timber Land.

V

VAC: See Visual Absorption Capability.

VQI: See Visual Quality Index.

VQO: See Visual Quality Objectives.

Variety Class: A classification system with three visual landscape categories:

a. Distinctive (Variety Class A): Unusual and/or outstanding landscape variety that stands out from the common features in the landscape.

b. Common (Variety Class B): Prevalent, usual, or widespread landscape variety; also refers to ordinary or undistinguished visual variety.

c. Minimal (Variety Class C): Little or no visual variety in the landscape; monotonous or below average compared to the common features in the landscape.

Viable Populations: Reproducing populations of plants or animals of sufficient numbers and distribution to assure indefinite perpetuation of the species.

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: The state of visual alteration measured in degrees of deviation from the natural appearing landscape.

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 visual condition levels ranging from Type I (appears to be untouched by human activities) to Type VI (appears to be drastically disturbed).

Visual Quality Objectives (VQO): A set of measurable maximum levels of future alteration of a characteristic landscape. These levels are:

a. Preservation: Ecological change only.

b. Retention: Human activities are not evident to the casual Forest visitor.

c. Partial Retention: Human activity may be evident but must remain subordinate to the characteristic landscape.

d. Modification: 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.

e. Maximum Modification: Human activity may dominate the characteristic landscape but should appear as a natural occurrence when viewed as background.

Visual Resource: The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

W

WFHR: See Wildlife and Fish Habitat Relationships.

WFUD: See Wildlife and Fish User Day.

WHR: Wildlife Habitat Relationships. (See Wildlife and Fish Habitat Relationships.

WIN: See Watershed Improvement Needs.

WLI: A Forest Plan Alternative which has been eliminated. It recommends a substantial amount of quality acreage for wilderness while maintaining or increasing commodity outputs through intensified management of lands outside wilderness.

WLN: The benchmark which maximizes Present Net Value (PNV) with all Further Planning Areas as wilderness.

Watch List I: Those plant species which the California Native Plant Society lists as needing more information before their legal status can be determined.

Watch List II: Those plant species which the California Native Plant Society has listed in the past, but are currently delisted.

Water Rights: The legal right to use water.

Water Yield: The total amount of water coming from an area of land, commonly a watershed, over a given period of time.

Watershed: The entire area that contributes water to a drainage system or stream.

Watershed Improvement Needs (WIN): An inventory of meadow complexes on the forest which have a history of being used for grazing. This inventory determines their condition of being either healthy, damaged or threatened. Erosion (gullying or headcutting) has been documented for over 25,000 acres.

Wild and Scenic River: A river set aside under the 1968 Wild and Scenic Rivers Act to preserve its natural environment and water quality. The following are the subcategories of wild and scenic designation:

a. "Wild River Areas: Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America."

b. "Scenic River Areas: Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads."

c. "Recreational River Areas: Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past." (16 U.S.C. Sec. 1273 (b))

Wild Trout Stream: A stream designated by the State of California to managed exclusively for the propagation of wild trout (those hatched in the wild); such streams are not stocked with hatchery-stocked trout.

Wilderness: As defined by the Wilderness Act of 1964, wilderness:

a. is undeveloped Federal land without permanent improvements or human habitation; is protected and managed so as to preserve its natural conditions;

b. has outstanding opportunities for solitude or primitive recreation;

c. 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 ignition.

Wildlife and Fish Habitat Relationships (WFHR): A system for organizing information about wildlife and fish species, their habitats, and the relationships between them that is used in land and resource management planning.

Wildlife and Fish User Day (WFUD): Twelve hours of recreation use involving wildlife or fish (primarily hunting and fishing).

Withdrawal: Withholding an area of Federal land from settlement, sale, location, or entry allowed under the general land laws to reserve the area for a particular purpose or program.

Y

Yield Table: A tabular statement of resource outputs expected to be produced under a specified set of conditions.

Z

Zone of Influence: The geographic area surrounding and intermingled with National Forest lands wherein people live whose lives are most directly impacted by Forest management decisions and activities.

IX

INDEX

CHAPTER IX. INDEX

AMB Alternative: 8, 158-167, 195-196, 343, 351-352, 355, 360, 364, 369-370, 376, 384, 389-390, 392, 397-398, 402, 406, 412-413, 428-430, 436-437, 440, 446, 455, 460, 466, 474, 485-486

AMC: see Alternatives Eliminated

AMN Alternative: 7, 148-157, 196, 343, 351, 355, 359-360, 363-364, 369, 376, 383-384, 389, 391, 397, 402, 406, 412, 427-428, 436, 440, 446, 454-455, 460, 466, 473, 484-485

Air Quality: 22, 48, 91, 205, 229-231, 352-355, 487

Alpine Ski Area, Existing and Under Study: 10, 26, 104, 272, 277-280, 417

Alternatives: 3-16, 58-62, 86-99, 107-189, 198-215

Alternatives Eliminated: 80-86

Ancient Bristlecone Pine Forest: 26, 102

Bald Eagle: 29, 74, 84, 98, 333

Benchmarks: 63-79

Bighorn Sheep: see Mountain Sheep

Blue Grouse: 30, 99, 334

CEE Alternative: 6-7, 138-147, 194, 343, 350-351, 355, 359, 363, 368-369, 375-376, 383, 389, 391, 397, 401-402, 406, 412, 424-426, 436, 440, 445-446, 454, 460, 466, 472-473, 483-484

CUR Alternative: 5, 118-127, 197, 342, 349-350, 354, 358-359, 363, 368, 375, 382, 388, 391, 396, 401, 405-406, 411, 421-422, 435-436, 440, 444-445, 452-453, 459, 466, 471-472, 481-482

Campground: see Developed Recreation Site

Colorado Cutthroat Trout: see Cutthroat Trout

Concentrated Recreation Area: 104, 378

Cultural Resources: 22, 32, 48, 92, 109, 118-119, 128, 138, 148, 158, 198-199, 205, 231-234, 355-360, 487

Cutthroat Trout: 23, 72, 83, 109, 119, 129, 139, 149, 159, 244-246

Dams: see Facilities

Designated Wilderness: 100, 377

Developed Recreation Site: 9-10, 26, 78, 85, 95, 105, 169, 272-277, 286, 415-417, 419-425, 427-429

Dispersed Recreation: 10-11, 26, 78, 95, 105, 169-171, 272-273, 280-286, 415, 417-418, 420-429

Diversity: 22, 48-49, 89, 206, 234-237, 360-364, 487

Economic Factors: 13-16, 18-20, 32, 47, 182-198, 205, 218-224, 340-343

Environmental Factors: 16-18, 22-38, 198-204, 216-493

Energy: 23, 49, 92, 207, 237-239, 364-365, 491-493

FLW: see Benchmarks

Facilities (Roads and Trails): 23, 49-50, 92-93, 109, 114, 119, 124, 129, 134-135, 139, 144-145, 149, 154-155, 158-159, 164-165, 175-176, 207, 239-244, 365-370

Fire Suppression: See Protection

Fish: 12-13, 23, 33, 50, 76, 84-85, 93, 109, 117, 119, 127, 129, 137, 139, 147, 149, 157, 159, 167, 172-173, 178, 199, 207-208, 244-248, 370-376, 487

Fisher: 330

Forest Requirements: 91

Forest-Wide Standards and Guidelines: 91

Four-Wheel Drive Vehicle: see Off-Highway Vehicle (OHV)

Fuelwood: see Timber

Further Planning Areas: 23-24, 33, 50-51, 181, 199, 208, 248-251, 376-384

Gas: see Minerals

Geology: 24, 51, 93, 208, 251-253, 384-390

Geothermal: 25, 259-260

Golden Eagle: 98

Golden Trout: 23, 119, 129, 139, 149, 159, 245, 370

Goshawk: 12, 30, 76, 85, 88, 99, 172, 334

Grazing: see Range

Great Gray Owl: 30, 99, 335-336

Groundwater: see Geology

H2O: see Benchmark

Hairy Woodpecker: 338

High Level Timber Management: 103

Hunting: see Dispersed Recreation

Hydroelectric: 23, 237-238

Interpretive Services: 95

LBU: see Alternatives Eliminated

Lahontan Cuttroat Trout: see Cutthroat Trout

Lands: 24, 51, 93-94, 109, 115, 119, 125, 129, 135, 139, 145, 149, 155, 159, 165, 176, 208, 253-258, 390-392

Livestock: see Range

MKT: see Alternatives Eliminated

MKV: see Benchmarks

MLV: see Benchmarks

MMR: see Benchmarks

MMRs: see Minimum Management Requirements

Management Indicator Species (MIS): 29-31, 88, 98-99, 329-338, 479

Management Prescriptions: 99-107, 113, 123, 133, 143, 153, 163, 174

Mass Transit: 241

Minerals: 8, 25, 34, 51-52, 94, 109, 115, 119, 125, 129, 135, 139, 145, 149, 155, 159, 165, 176, 179, 200, 209, 258-263, 392-398

Minimum Implementation Requirements (MIRs): 90-91

Minimum Management Requirements (MMRs): 87

Mining: see Minerals

Mono Basin National Forest Scenic Area (MBNFSA): 25, 102, 263-264, 398

Mountain Bike: see Dispersed Recreation

Mountain Sheep: 12, 30, 74, 84, 99, 101, 172, 336-337

Mule Deer: 12, 29, 74, 76, 84, 98, 101, 172, 330-333, 480-486

Multiple Resource Area: 106

NON: see Benchmarks

Nelson Mountain Sheep: see Mountain Sheep

Nordic Skiing: See Dispersed Recreation

Off-Highway Vehicle (OHV): 95

Oil: see Minerals

Outfitter-Guide: see Wilderness

Over-Snow Vehicle (OSV): See Dispersed Recreation

Owens Sucker: see Fish

Owens Tui Chub: 244

PRF Alternative: 4-5, 108-117, 195, 342, 349, 354, 358, 363, 367, 375, 382, 388, 391, 396, 400-401, 405, 411, 419-420, 435, 440, 444, 451-452, 459, 466, 471, 480-481

PRO Alternative: see Alternatives Eliminated

Paiute Cutthroat Trout: see Cutthroat Trout

Peregrine Falcon: 12, 29-30, 74, 84, 98, 172, 333-334

Pest Management: 25, 52, 94, 110, 119, 129, 139, 149, 159, 209, 264-265, 399-402

Pine Marten: 330

Potential Alpine Ski Areas: 104-105, 279

Prairie Falcon: 98

Present Net Value (PNV): 182-183, 190-197

Proposed Wilderness: 100, 377

Protection (Fire Management): 25-26, 34-35, 52, 94, 110, 115, 119, 125, 129, 135, 139, 145, 149, 155, 159, 165, 176, 200, 209, 266-267, 402-406, 487

RGN: see Benchmarks

RPA Alternative: 6, 128-137, 194-195, 342-343, 350, 355, 359, 363, 368, 375, 383, 389, 391, 397, 401, 406, 411-412, 422-424, 436, 440, 445, 453, 459, 466, 472, 482-483

Range: 9, 26, 34, 52-53, 72, 83, 95, 103-104, 110, 115, 119, 125, 129, 135, 139, 145, 149, 155, 159, 165, 168, 176, 200-201, 210, 267-271, 407-413

Recreation: 9-11, 26, 35, 53, 95, 110, 115, 119-120, 125, 129-130, 135, 139-140, 145, 149-150, 155, 159-160, 165, 168-171, 176, 201, 210-211, 271-287, 413-430, 487

Recreation Opportunity Spectrum (ROS): 26, 179-180, 285-287, 416, 418, 422, 424, 426, 428, 430

Recreation Residences: 95

Research Natural Areas (RNAs): 26-27, 54, 95, 101, 110, 120, 130, 140, 150, 160, 180, 211, 287-290, 430-432

Resident Trout: see Fish

Rights-Of-Way: see Lands

Riparian: 13, 27, 30, 54, 89, 96, 110-111, 120, 130, 140, 150, 160, 173, 211, 235-236, 290-292, 337-338, 432-437, 480, 482-486

Roads: see Facilities

Sage Grouse: 30, 99, 334-335

Semi-Primitive Recreation: 105-106

Sensitive Plants: 27, 54, 212, 292-294, 437-440, 487

Sierra Nevada Mountain Sheep: see Mountain Sheep

Sierra Nevada Red Fox: 330

Snowmobile: see See Dispersed Recreation

Social Factors: 20-22, 32, 48, 198, 205, 224-229, 344-352

Soils: see Watershed

Solar: 239

Special Interest Areas and National Natural Landmarks: 27, 55, 96, 111, 120, 130, 140, 150, 160, 212, 295-296, 440-441

Spotted Owl: 30, 99, 335

TBR: see Benchmarks

Threatened, Endangered and Sensitive Species: 87-88, 98

Timber: 11, 27-28, 36, 55, 72, 83, 96, 103, 111, 116, 120, 126, 131, 136, 140-141, 146, 150, 156, 160, 166, 171, 177, 180, 202, 212, 297-305, 441-446

Timber Policy Requirements (TPRs): 90

Trails: see Facilities

Trout: see Fish

Tule Elk: 337

Uneven-Aged Timber Management: 103

Utility Corridor: see Lands

Visual Resources: 28, 36, 55, 97, 111, 120, 131, 141, 150-151, 161, 181, 202-203, 212-213, 305-309, 447-455, 488

WLI: see Alternatives Eliminated

WLN: see Benchmarks

Water: see Watershed

Watershed: 28, 37, 56, 72, 83, 89, 97, 111, 116, 121, 126, 131, 136, 141, 146, 151, 156, 161, 166, 177, 203, 213, 309-324, 455-468, 488

Western Sucker: see Fish

Wild and Scenic Rivers: 29, 56, 98, 102, 111, 121, 131, 141, 151, 161, 181, 213, 324-326, 468

Wilderness: 11-12, 29, 37, 56, 78, 86, 98, 100, 111, 121, 131, 141, 151, 161, 171-172, 181, 203, 213, 273, 326-328, 377, 468-474

Wild Horse and Burro: 26, 268, 271

Wildlife: 12-13, 29-31, 37-38, 56-57, 85, 88, 98-99, 111-112, 116-117, 121, 126-127, 131-132, 136-137, 141, 146-147, 151, 156-157, 161, 166-167, 172-173, 177-178, 203-204, 213-215, 328-338, 474-486, 488

Williamson Sapsucker: 338

Wind Power: 23, 239

Wolverine: 330

Wood: see Timber

Yellow Warbler: 337-338

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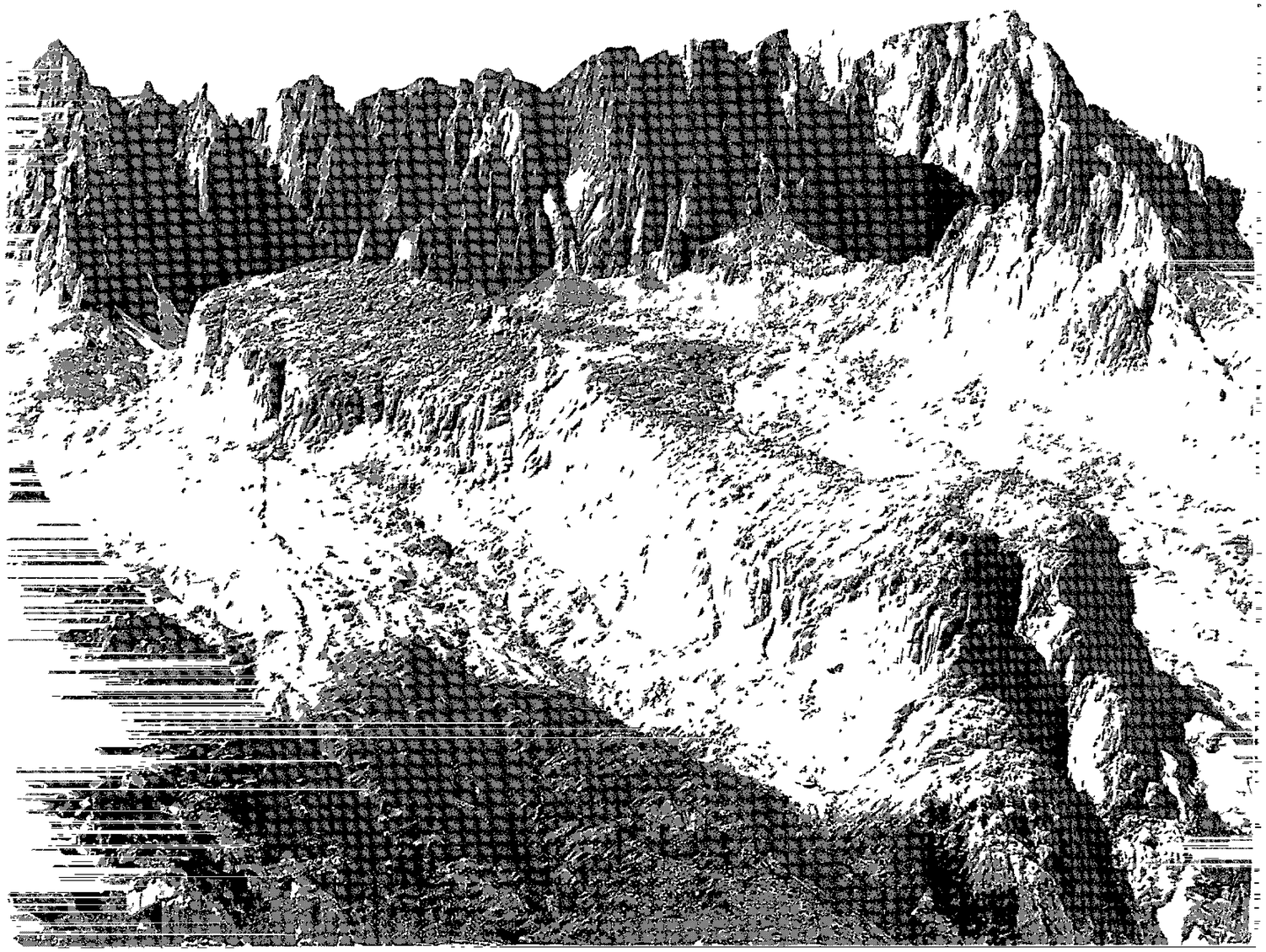
Forest Service

APPENDIX

INYO
NATIONAL FOREST
LAND AND RESOURCE MANAGEMENT PLAN



Inyo National Forest

Pacific Southwest Region USDA Forest Service

Environmental Impact Statement Appendix

for the

Land and Resource Management Plan

1 9 8 8

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TABLE OF CONTENTS

Appendix A. Public Response Appendix..... 1

Appendix B. Resource Allocation Model and Analysis Process..... 534

Appendix C. Further Planning Area Description and Evaluation..... 595

Appendix D. Roadless Area Allocations..... 716

Appendix E. Major Silvicultural Systems and their Application.... 722

Appendix F. Economic Efficiency Analysis..... 743

Appendix G. Budget Appendix..... 745

Appendix H. Timber Supply Appendix..... 751

Appendix I. Bibliography..... 761

Appendix J. Glossary..... 777

Appendix A

Public
Response

APPENDIX A. PUBLIC RESPONSE APPENDIX

PUBLIC COMMENTS AND FOREST SERVICE RESPONSE TO THE DRAFT ENVIRONMENTAL IMPACT STATEMENT AND PROPOSED INYO NATIONAL FOREST PLAN

SUMMARY OF PUBLIC INVOLVEMENT..... 3
How to read the Public Comments and Forest Service Response..... 6
Public Response Profile..... 7

PUBLIC COMMENTS AND FOREST SERVICE RESPONSES
Air Quality..... 8
Cultural and Historical Resources..... 10
Diversity..... 13
Energy..... 17
Geothermal Resources..... 20
Hydroelectric Energy..... 30
Facilities..... 35
Roads..... 39
Geology..... 47
Herbicides..... 48
Lands..... 49
Corridors..... 53
Minerals..... 55
Pest Management..... 68
Planning Process - NEPA..... 71
Budget..... 82
Protection..... 84
Range Management..... 88
Recreation..... 117
Alpine Skiing..... 122
Developed Recreation..... 133
Dispersed Recreation..... 145
Off-Highway Vehicles..... 160
Over-Snow Vehicles..... 176
Nordic Recreation..... 184
Research Natural Areas..... 188
Riparian Areas..... 192
Sensitive Plants..... 205
Socioeconomic Environment..... 213
Soils..... 223
Special Interest Areas..... 224
Timber Management..... 228
Vegetation..... 276
Visual Resources..... 278
Water..... 289
Wild and Scenic Rivers..... 300
Wilderness..... 304

Wildlife..... 332
Fisheries..... 344
Goshawks..... 351
Management Indicator Species..... 352
Mountain Sheep..... 354
Mule Deer..... 359
Peregrine Falcons..... 366
Sage Grouse..... 367
Sensitive and Threatened and Endangered Species..... 369
Editorial Comments..... 373

COPIES OF LETTERS..... 379

LIST OF RESPONDENTS..... 464

SUMMARY OF PUBLIC INVOLVEMENT

The Draft Environmental Impact Statement and the Proposed Land and Resource Management Plan for the Inyo National Forest became available to the public on October 15, 1986 for a 90-day review period. During this time, the Forest conducted workshops to assist the public in understanding the format of the documents. These workshops were held locally in Mono and Inyo Counties and in several Southern California locations.

In response to public request, the original review period was extended an additional 60 days. The comment period closed on March 15, 1987. A formal public hearing was held in Bishop, California on January 26, 1987.

The Inyo National Forest received a total of 3,747 letters, postcards, and other responses. Of the total, 1,933 were pre-printed postcards generated by the Mammoth/June Mountain Ski Resort.

Every letter or input was read and analyzed. Each substantive statement was specifically identified and coded. These individual statements were entered into a computer database to assist in sorting by resource subjects. An interdisciplinary team of specialists worked together to group similar comments, subjects, and concerns into a unique set. These unique public comments were then responded to by the interdisciplinary team with review by the Forest Management Team. Pages 8 - 373 of this Appendix display the unique comments for each resource and the Forest Service response. Detailed analysis of each letter and comment is available in the planning records at the Forest Supervisor's Office.

The public response included three letters that appeared to propose alternatives. These letters were from Eastern Sierra Earth First, Friends of the Inyo and the Scenic Shoreline Preservation Conference, Incorporated.

The Earth First response proposed that the majority of the Inyo National Forest be recommended for wilderness designation or managed as "Wilderness Recovery Areas". They proposed 880,000 acres of recommended wilderness including all roadless areas and RARE II released areas, and 280,000 acres of "Wilderness Recovery Areas." The management philosophy in "Wilderness Recovery Areas" would be to "...recreate or simply allow a return to conditions which existed prior to human disruption..." by closing poorly maintained unnecessary roads and eliminating grazing, logging and mining to aid in the recreation of intact ecosystems.

The WLN Benchmark Alternative described in the DEIS which was carried forward to the analysis of alternatives as the AMC Alternative is similar to the proposed Earth First alternative. The AMC Alternative recommended all further planning areas for wilderness designation; 62% of the Inyo Forest lands would be wilderness. With an additional 5% of Forest lands already having other restrictive designations such as the Mono Basin National Scenic Area, Research Natural Areas and the Ancient Bristlecone Pine Forest, only 33% of the Forest would be available for the full range of management options. The AMC Alternative was eliminated from detailed study because there would be very little opportunity for future management to change in response to changing public needs or environmental conditions. Because the Earth First Alternative proposed an even greater number of acres for wilderness or the restrictive

designation of "Wilderness Recovery Areas", it would have been eliminated from detailed study for the same reasons.

The responses from the Friends of the Inyo and the Scenic Shoreline Preservation Conference, Inc. were analyzed in the same manner as all other responses. Neither proposed a complete alternative, but, rather, were an organized series of comments. Each comment was coded, analyzed, and appropriate changes were made to the Final Plan and EIS.

Major Issues and Concerns Identified by the Public Response

The public identified and commented on many issues. The following five issues were identified as critical: allocation and distribution of wilderness; timber management; livestock grazing; OHV use; and management of the geographical area from Mammoth Lakes north to June Lake. The issue of management in the Mammoth to June area included the issues of alpine skiing, geothermal resources, timber management, dispersed recreation including nordic skiing and snowmobile use, wildlife management, visual resources, and the effects of Forest Service management activities on the infrastructure of local communities.

Other areas of concern included vegetative diversity, fisheries, lands, minerals, the planning process including budget and monitoring, riparian areas, sensitive plants, and water.

Public response on the five critical issues are summarized as follows:

ISSUE: Management of the area from Mammoth Lakes north to June Lake

Public comment was polarized relative to future management direction within the area north of the Town of Mammoth Lakes, bounded on the east by U.S. 395, the west by the John Muir and Ansel Adams Wildernesses, and the north by the ridgeline of the June Lake complex. Some supported making portions of the area available for alpine ski development within the planning period as opposed to others who supported maintaining the area in some type of limited access category or wilderness designation. Some advocated protecting the Glass Creek drainage from development by designating it as a Special Interest Area.

While timber harvest in the red fir stands was supported by some, others felt there should be no harvesting in order to retain existing old growth conditions. An additional concern was that if these stands were harvested, even-aged silvicultural practices should not be used. Some respondents felt the draft Plan would have adverse impacts on wildlife populations including migration of mule deer.

Both the future of nordic skiing and snowmobiling were questioned, involving perceived conflicts between the two uses. There was some feeling expressed that a nordic concessionnaire operation with groomed trails is inappropriate in the area. Finally, there were concerns that the cumulative effects of all proposed activities, including geothermal development, should be addressed in the Forest Plan.

ISSUE: The Allocation and Distribution of Wilderness on the Forest

Public comment ranged from a desire for maximum wilderness to no more wilderness. There was particular interest in the amount of wilderness acres and location of the boundaries in the White and Inyo Mountains. Those desiring maximum wilderness advocated including all roadless areas and Further Planning Areas as a minimum.

Some felt that the percentage of total Inyo Forest lands recommended for wilderness designation was inadequate. Reasons for increased wilderness included preservation for future generations, maintenance of ecological and species diversity and the philosophy that priority should be given to wildlife and plant species over the recreational needs of man by designating some areas that are not typically considered "wilderness quality".

Those opposed to additional wilderness were concerned that the designation is too restrictive. They felt that California has enough wilderness and that wilderness designation denies access to public lands for specific sectors of society such as handicapped and older Americans.

ISSUE: Timber Management, except in the Mammoth/June area which is covered in the Mammoth/June issue

Much public comment was received regarding the timber management program on the Inyo National Forest. Some respondents advocated no further timber harvest and associated roadbuilding, others supported continued harvest as recommended in the Preferred Alternative while some others supported an increased harvest level as proposed in the RPA Alternative. There was particular concern about the harvest of pure stands of red fir and Jeffrey pine. Also, there was concern regarding harvest methods. Some supported continued clearcutting; others advocated the use of uneven-aged management techniques.

Other issues included the appropriate allowable sale quantity, acres allocated to the suitable timber landbase, and fuelwood management. Some felt that the contribution of the Inyo Forest to the local economy and to the Forest Service timber targets is insignificant and that the Forest should discontinue timber harvesting. Others pointed out the importance of Inyo Forest timber to their companies.

ISSUE: Livestock Grazing

Public comment relative to livestock grazing ranged from support of current levels to elimination of grazing Forest-wide. Some felt that grazing should be reduced or eliminated to improve range condition. Others supported continued livestock grazing at current or reduced levels.

There was particular concern about riparian habitat as it is affected by livestock grazing. There was support expressed for the Plan's statement that riparian dependent resources receive priority but respondents wanted an explantion of how this would be accomplished.

Other issues included the cost-effectiveness of grazing, grazing in wilderness and the statement in the Draft Plan that demand for red meat is increasing.

Respondents expressed specific concerns about grazing in Monache Meadow, the Kern Plateau and in the White Mountains especially Cottonwood Creek.

ISSUE: Amount of "Open Area" and trails designated for OHVs and OSVs.

Public comments were polarized as being pro-OHV or anti-OHV. Pro comments supported the protection or improvement of existing roads, trails and open areas. Some favored expanded trail systems and interest was overwhelmingly for trail riding rather than cross-country use.

Those opposing OHVs felt these uses are not compatible with other forest uses. Specific concerns were noise, dust, trail damage, erosion, watershed damage, disturbance to wildlife, destruction of plants, air pollution, public safety, and fire hazards.

There seemed to be some confusion regarding Management Prescriptions #17 and #18. Both Prescriptions allowed for OHV use only on current or designated roads and trails. Some respondents seemed to interpret Prescription #18 as allowing cross-country travel. Some proposed maintaining the current use in Poleta Canyon as the only "open area" on the Forest.

READING PUBLIC COMMENTS AND FOREST SERVICE RESPONSE SECTION

The public comments received on the Draft Environmental Impact Statement and Proposed Land and Resource Management Plan were synthesized into 1183 unique comments which are listed in 45 categories. The interdisciplinary team which reviewed all the public comments attempted to capture each unique idea, comment, concern, or issue.

The changes made to the Draft EIS and Plan were not made because of the numbers of times a comment was received, but are reflective of the unique information supplied by the public.

Each public response was assigned an identification number. Respondents can find the ID number assigned to their response on Pages 375-478 of this Appendix.

You will notice that each comment is followed by a number(s) in parentheses, perhaps followed by several more numbers in a second set of parentheses. The first set of parentheses refers to the ID number(s) whose language makes up this comment. Sometimes, several ID numbers were combined into a single comment that could be answered by one Forest Service response. For the most part, the language in the comments is directly from the public responses; very little paraphrasing was done. The second set of parentheses includes those ID numbers that were considered similar enough to be answered with the same Forest Service response. For example:

COMMENT: The Plan should state explicitly that wildlife needs are to take precedence over livestock needs. In the Golden Trout Wilderness, cattle grazing should be severely limited to protect wildlife. (1489, 1843) (65, 2170)

The language displayed in the comment is from ID Numbers #1489 and #1843. ID Numbers #65 and #2170 included similar statements that were answered by the same Forest Service response.

Of course, most respondents had many individual comments included in their letters. Each comment was individually coded and responded to. The individual comments of each ID number are tracked in the database which can be reviewed in the Forest Supervisor's Office.

PUBLIC RESPONSE PROFILE

Total Responses Received	3747
Number of Comments Coded	8496
Total Number of Unique Comments	1183

Totals by Respondent Category

Individuals	3593
Conservation or Environmental Groups	32
Motorized Recreation Interests	11
Recreational Forest Users	26
Forest Industry	11
Business and Commercial Interests	28
Academic Individuals or Groups	6
Resource Professionals	15
Tribal Groups	0
Local Public Agencies	3
State Public Agencies	6
Federal Public Agencies	7
Elected Local Officials	7
Elected State Officials	1
Elected Federal Officials	0

AIR QUALITY

COMMENT: Insufficient information is given on the issue of air quality in the DEIS and Draft Plan. (1632)

RESPONSE: Little detail is given on air quality monitoring because the pristine character of the air in the area has never warranted an extensive monitoring network. The Air Pollution Control Board monitors the suspect areas presently, and, as new areas become suspect, the monitoring program will expand.

COMMENT: One way to improve air quality and to alleviate the problem of smoke from woodstoves would be to stop the gathering and sale of fuelwood until stoves in the area are equipped with catalytic burners or, as a minimum, meet the Oregon standards for emissions from wood burning stoves. (382) (1548)

RESPONSE: Emission standards for woodstoves are set by County or City regulations.

COMMENT: Coordinate with local jurisdictions to minimize off-Forest air quality impacts such as woodstove smoke and dust from dry lakes and receding shorelines. (1638)

RESPONSE: We do coordinate with the Great Basin Air Pollution Control District, the Environmental Protection Agency, the California Department of Forestry and the Bureau of Land Management.

COMMENT: The Mono Basin is an integral if not representative example of the health of our Forest's varied ecosystem. The impacts of presently exposed 15,000 acres of alkali lake bed, and the potential exposure of thousands more, with the resulting dust, must be addressed in the Plan. (300)

RESPONSE: The Mono Basin National Forest Scenic Area corresponds to Management Area #1 and is managed under Prescription #6. The question of the exposed lake bed and air quality problems will be discussed in the Scenic Area Management Plan which is being developed on a separate time frame as directed in Title III Section 304 of the California Wilderness Act of 1984. The Scenic Area Management Plan, upon completion, will be incorporated as an amendment to the Forest Plan.

COMMENT: Air Quality. Please add to the list on Plan IV-18: "The Forest Service will exert its authority over National Forest System lands in order to assure that these lands are managed to maintain air quality that complies with all applicable regulations and prevents significant deterioration of air quality." (1617) (225, 2213)

RESPONSE: This is federally mandated.

COMMENT: Air Quality, DEIS III-6. Please define BACT and PSD. They are not in the glossary. What is their significance? (1634)

RESPONSE: We have added these terms to the glossary.

COMMENT: Air Quality. On DEIS IV-18, please add dewatering of alkaline lakes to your indicators for activities that take place on Forest Service lands that affect air quality. The "assumption" that "the only substantial changes in air quality would be the long-term changes associated with community growth and geothermal/mineral development" should also list "the dewatering of alkaline lakes". This section correctly goes on to identify "water mining (groundwater pumping) and water regulation including diversions" as activities that impact air quality on the Forest and as a "consequence common to all alternatives." However, the document incorrectly assumes that these activities are "outside Forest Service control", especially in the case of Mono Lake. As we have previously mentioned, no matter the alternative, the U.S. Government, as owner of properties littoral to Mono Lake, has direct jurisdiction over the causes of degradation to these lands. It should be stated here that, in all alternatives, the Forest Service will exert its authority to resolve this problem. (1617)

RESPONSE: This will be addressed in the Mono Basin National Forest Scenic Area Plan.

COMMENT: The DEIS watershed section should mention the exposure of the alkali lake bottom due to water diversions from Mono Basin and the increasingly severe dust storms which have violated State and Federal Air Quality Standards. (See Bruce H. Kusko and Thomas A. Cahill. April 1984. Study of Particle Episodes at Mono Lake, Final Report to California Air Resources Board on Contract #AL-144-32). The accompanying desiccation of streams has resulted in the destruction of riparian vegetation, the lowering of water tables, major erosion of stream banks and pervasive stream channel instability. (1617)

RESPONSE: This will be addressed in the Mono Basin National Forest Scenic Area Plan. Both statements are true.

COMMENT: With regard to skiing, what of the air quality in the Owens Valley and Mammoth Lakes communities? More cars mean lower air quality; more people in Mammoth mean more wood fires; and more wood fires mean less trees and firewood for locals and poor air quality. There will be more sewage and a much higher demand for water. Shouldn't the Forest Service look into these aspects and address them more specifically in the Plan? (2177) (62, 1632)

RESPONSE: Prior to any further development of ski terrain between Mammoth and June Mountain, a cumulative impact analysis will be done addressing the concerns expressed above. Refer to additional language added under the facilities element for Management Area #8.

CULTURAL RESOURCES

COMMENT: The increase in carbon dioxide along with the increase in flurocarbons and the manmade chemicals may lead to a general warming of the planet and a decrease in precipitation in many areas. These effects will probably become apparent in the next few decades. While this may be a longer time scale than you are required to look at for the purpose of formulating the Forest Plan, I believe that this should be considered since the Forest will definitely be affected by this phenomenon. (1547)

RESPONSE: This is beyond the scope of the Forest planning process.

COMMENT: Air Quality, Plan III-6. Current direction and opportunities for change. The statement that "There is no evident need for change in management" is incorrect. Windborn dust blowing from the exposed Mono Lake bed continues to violate State and Federal emergency levels for particulates. Mono Lake's dust contains 10 times the sulfates of Owens dust, as well as other substances suspected to be harmful to plants, animals and humans. Dust storm episodes carry this dust many miles beyond Scenic Area boundaries into surrounding Forest lands and beyond state lines. This section should be brought up to date, since the U.S. Government has been found to be an owner of Mono Lake bed lands (State of Ca., ex. rel. State Lands Commission v. U.S.A., et al, S-80-0696). It appears to us that the best way that the Forest Service could take this opportunity to change current policy would be to exert its authority to establish a minimum lake level that would solve the windborn dust problem. (1617) (129, 278, 1843, 2170)

RESPONSE: This will be addressed in the Mono Basin National Forest Scenic Area Plan.

CULTURAL AND HISTORICAL RESOURCES

COMMENT: It should be noted that the opportunity exists to coordinate historical and prehistorical preservation efforts with local jurisdictions and historical groups through the preparation of local historic preservation elements. (1638)

RESPONSE: Local jurisdictions and historical groups, as well as other interested publics such as Indian tribes, will be consulted when an action which requires the development of historic preservation elements is undertaken.

COMMENT: Pinyon-juniper forested areas generally have the highest density of archaeological sites in the Inyo National Forest and are subject to destruction by woodcutters and off-road users. Rebuilding habitat and protecting archaeological features in these areas can be accomplished by a moratorium on woodcutting and limited vehicle access. (1642)

RESPONSE: Strategies for the protection of all cultural sites, including road closures, will be developed as appropriate. Woodcutting policy and OHV

restrictions will be evaluated for the effects they have on the cultural resources of the pinyon-juniper forest.

COMMENT: Cultural resources inventory should be a high priority of the Forest Service. Mining, logging and ORV abuse should not occur on any lands that have not yet been inventoried (95%) for cultural resources. (1634)

RESPONSE: The effects of all undertakings on cultural resources will be considered prior to allowing that activity. The project area will be inventoried and all sites evaluated for significance. Significant cultural sites will be protected. Continued monitoring will assess the effectiveness of protection measures and remedial action will be taken where necessary.

COMMENT: Pleased to see recognition of the need for surveys and inventories of cultural resources. Did not see any firm plan for protecting the areas prior to survey. (1900)

RESPONSE: An environmental analysis is prepared for any site specific proposal or activity which considers impacts on all resources including cultural resources.

COMMENT: Regarding the archaeological districts (such as Round Mountain - Casa Diablo), I feel that sheep should be barred. They do a great deal of damage, disrupt the soil, remove grass, roots and all. (1900)

RESPONSE: The allotment management plan for each livestock allotment is the vehicle to outline protection measures for all resources including cultural resources. Public participation will be invited in the development of the allotment management plans.

COMMENT: Regarding the cabin at Casa Vieja Meadows in the Mount Whitney District, this cabin would probably not qualify as essential for the safety of snow surveyors nor would it be essential to the administration of Golden Trout Wilderness, thus the long range goal is probably for removal unless the structure is determined eligible for retention as a historic place. I do know that this is a unique cabin that represents a way of life in the Forest Service that is gone forever. I believe it qualifies as a historic place and should be eligible for historic preservation. (33)

RESPONSE: The *Forest-wide Standards and Guidelines* for wilderness incorporate existing wilderness management plans. The Golden Trout Wilderness Management Plan contains direction for the Casa Vieja Guard Station cabin. Before any action would be taken to remove the structure, we would do a determination of significance, which means to determine the eligibility of the structure for the National Register of Historic Places. Retention or removal of the cabin could also be affected by its need for snow survey shelter.

CULTURAL RESOURCES

COMMENT: In the Inyo National Forest, there is no mention of the area known as the Mammoth Consolidated Gold mine. The Town of Mammoth Lakes would like to have this area designated to be maintained as a historical site. (1891)

RESPONSE: The Town of Mammoth Lakes just recently decided to take over restoration of the Mammoth Consolidated Gold Mine and make it available to the public as an historical attraction. The Forest Plan will not deal with the management of the mine as an historical attraction. Recreation direction for Management Area #9 - Mammoth is to provide trail opportunities with the community of Mammoth Lakes. This would cover access to the Mammoth Consolidated Mine.

COMMENT: There should be closure of some 4WD roads in Pizona because of erosion, and people are stealing petroglyphs. (1261)

RESPONSE: The well preserved state of cultural resources in the Pizona Management Area will be maintained through appropriate measures which may include road closures.

COMMENT: With such a high density of cultural sites, it is a shame that only five percent of the Forest has been inventoried. (1634) (1777)

RESPONSE: The inventory is being done as quickly as possible given budget and manpower constraints.

COMMENT: The High Sierra Stock Users Association believes that certain areas of the Inyo National Forest show an important living part of our national heritage that should not be allowed to disappear from the American scene. One example of this is Jordan Hot Springs. Although we recognize that the Golden Trout Wilderness Management Plan governs the use of Jordan Hot Springs, we feel that it is incumbent upon Forest Service leadership to take an active role in seeking to preserve aspects of our cultural heritage. Although the facilities at Jordan Hot Springs are not ten thousand years old as some of the Indian prehistoric sites may be, they have played an important role in the development of this part of California. For this reason, we feel very strongly that efforts should be expended by Forest Service leadership to protect such sites rather than simply letting such sites be lost through inaction. It may be that the environmental pendulum swung too far when the Golden Trout Wilderness was created. (1666)

RESPONSE: Jordan Hot Springs will be evaluated for significance to determine if it is eligible for listing on the National Register of historic places.

COMMENT: A complete inventory of the existing prehistoric sites should be implemented in the Pizona country, and a program for research and protection should be considered. (1608) (1638)

RESPONSE: See Appendix A of the Plan for a list of plans that will be prepared during Plan implementation.

DIVERSITY

COMMENT: The Forest Service is to be commended for recognizing the need for a monitoring and evaluation program. Before a program can begin, baseline data needs to be established. Species diversity as a category to be monitored is allotted a low level of precision and validity. This is unacceptable; it must be improved. (2115)

RESPONSE: This comment is referring to vegetation diversity, and the application of diversity guidelines on the Forest. The major concern seems to lie in the allocation of vegetation communities/seral stages on the Forest and especially the allocation of old growth conifer stands. The Forest is in the process of developing an implementation plan for allocating old growth on a timber compartment basis. The monitoring guidelines will be modified to reflect this and other monitoring methods relative to diversity.

COMMENT: Diversity, Plan IV-19. This discussion presents problems. Where did the 5% come from? It seems arbitrary and insufficient. Please explain since diversity is measured Forest-wide, the 5% figure for seral stage 4C (70% or more canopy cover) could mean that the 5% left is in a non-lumbering area and hence all the other 95% could be cut. This is unacceptable. The provisions of Paragraph 2 should be clarified to indicate how stripping the Forest of the various timber types and seral stages will be avoided. How does this concept of management apply to those types which are not logged such as foxtail pine? Isn't alpine fellfield a plant community? Does it fall within this management plan of diversity? Will seral states of shrubs be arbitrarily manipulated to achieve "desired" seral stage diversity ? This entire diversity section needs to be expanded to cover many such questions. (1431)

RESPONSE: The Forest-wide Standards and Guidelines for diversity were derived from regional guidelines. These should be viewed as minimum required levels of diversity for the various successional stages, vegetation communities and canopy cover types. In forested habitats, these levels would only be implemented on lands identified suitable for timber management, approximately 69,000 acres. The remainder of the Forest would not be managed for timber harvest purposes. Thus, within areas prescribed for timber management, 10 percent would be managed in the older seral stages (approximately 40+% canopy cover). Outside of this area, there would be no reduction of old-growth forested stands.

The diversity portion of the Plan has been rewritten to better incorporate various sections of the Preferred Alternative. This information is currently in the Plan, but is scattered throughout several areas.

COMMENT: The EIS must make clear that intensive timber harvesting will reduce biological diversity Forest-wide. The EIS occasionally acknowledges this; DEIS IV-28 states "suitable timberlands would shift toward earlier successional stages and greater diversity due to timber management". There is no shortage of earlier successional stages on the Forest; by contrast, there is relatively little old growth and that amount is being gradually

liquidated. The EIS should recognize that old growth enhances the Forest's overall biological diversity and that harvesting such areas reduces diversity; this provides another powerful reason to preserve such areas. (1649) (127, 1108, 1617, 1634, 2170)

RESPONSE: Intensive timber harvesting will reduce the potential habitat for late seral stages on only 69,200 acres allocated to this Prescription. In areas where Jeffrey pine has been historically harvested (mostly Management Areas #5 and #7), the old growth should actually increase as 10% of this area will be allocated to old growth management. Currently, there is essentially no old growth Jeffrey pine in these Management Areas outside of the Indiana Summit Natural Area. The areas where old growth is expected to decrease are in the lodgepole pine timber types that fall within Management Areas #4, #5 and #7. Since the FEIS and Final Plan will recommend that pure stands of red fir be removed from the timber base, species dependent on this habitat will not be adversely affected by management activities.

COMMENT: It is my feeling that the proposed Guidelines for diversity do not meet NFMA standards for maintaining biological diversity (36 CFR 219.27(G), 36 CFR 219.26). (1634)

RESPONSE: The Standards and Guidelines for diversity exceed those set forth in the Regional guidelines. They also meet the legal intent for maintaining biological diversity as defined by NFMA.

COMMENT: In the result of fire suppression, it is doubtful that maintenance of 5 percent of each timber type and 10 percent of each shrub type in each seral stage could bear much resemblance to an historically diverse condition (DEIS III-22). This comparison should be made and retention standards for seral stages of naturally diverse vegetative types should be designed to address existing deficiencies. The 5.4 percent listed here as a minimum to be kept in this seral stage is not enough to maintain the Inyo's existing wildlife diversity and abundance. (2170, 2190)

RESPONSE: In shrub communities, fire suppression and livestock grazing probably influenced the change in vegetation communities from a shrub-steppe type to one that is predominantly shrub dominated. The goal of 10 percent in each of three seral stages would increase the diversity of otherwise monotypic stands. This would more closely approximate upland shrub habitats as they existed historically.

The goal of 5 percent in each timber type/seral stage combination is the minimum Regional standard. The only area where this minimum level would be managed for is in those areas identified as suitable for timber management. The remainder of the Forest would not be placed under timber management and thus would have percentages that exceed the minimum.

The 5.4 percent criteria refers only to stands suitable for timber management that were allocated for old growth purposes to meet diversity requirements. While assessing needs for old growth, we determined that in order to meet 10

percent old growth requirements in areas suitable for timber management, that 4.6 percent could be obtained using areas unsuitable for timber management that were interspersed among stands suitable for timber management. The remaining 5.4 percent would be allocated for old growth management from the suitable timber stands. The remainder of the Forest would not be managed for timber harvest purposes, thus old growth percentages on these acres would be higher.

Since the pure red fir stands will not be harvested under the Preferred Alternative, this old growth allocation applies primarily to Jeffrey pine stands, and lodgepole pine to a lesser extent.

COMMENT: We are not satisfied with the treatment of diversity in the Plan because it provides for maintenance of diversity in terms of the structure and age of communities. Biological diversity (the number and relative abundance of species) is not adequately addressed. We believe it is this facet of diversity that Congress was seeking to protect in FLPMA and related legislation. The Plan does not show adequate concern for the effects of the proposed increases in road building, timber harvest, grazing and recreation on species diversity. (1108) (65, 89, 104, 176, 381, 400, 466, 904, 938, 979, 1107, 1216, 1232, 1332, 1431, 1433, 1485, 1509, 1541, 1565, 1617, 1631, 1634, 1638, 1648, 1663, 1709, 1857, 1907, 1930, 1982, 1985, 2047, 2061, 2109, 2117, 2130, 2147, 2170, 2178, 2190)

RESPONSE: Diversity is much more than the application of vegetation/seral stage guidelines. It is the combination of many different physical and biological phenomena that together make up habitats. Plant species, seral stages, crown closures, vegetation structure, snags, and down logs are all criteria that contribute to diversity. In the Forest Plan, diversity was addressed using requirements developed for vegetation patterns; down log/snags; threatened, endangered, and sensitive species; species that are ecological indicators; species of special interest; harvest species; aquatic ecosystems; and riparian habitats. The concept of diversity is to insure that viability of all species and habitats will be maintained.

COMMENT: Under the "monitoring objective" column of "diversity" activity, delete "Forest-wide". Distribution of successional stages should apply to each management area. "Forest-wide" would permit some areas to be in noncompliance so long as the overall Forest average was met. (1431)

RESPONSE: The Forest-wide Standards and Guidelines for wildlife habitat types state that requirements will be met on areas of approximately 10,000 acres. This should insure interspersion of various vegetation communities and seral stages.

COMMENT: The protection of wildlife habitat and species diversity should receive priority over other uses. The following management goals for Inyo are totally unacceptable. 59-65% decrease in old growth forest, 32-69% decrease in early and mid-successional brush, 17% decrease in wet meadows, and a 9% increase in grazing. This planned reduction of wildlife habitat is irresponsible and poor management. The Forest projects (DEIS Table IV-46)

that implementation of the Preferred Alternative will result in decreases in key MIS habitat. These decreases will significantly contribute to a reduction in forest diversity. Neither the Plan nor the DEIS address the reductions in MIS habitat in terms of decreases in diversity. (1730, 2047) (225, 381, 400, 466, 938, 979, 1180, 1216, 1232, 1332, 1485, 1509, 1541, 1565, 1648, 1663, 1709, 1857, 1907, 1930, 1982, 1985, 2061, 2103, 2109, 2117, 2170)

RESPONSE: With the removal of pure stands of red fir from the suitable timber base in the Final Plan, the reduction in old growth will be significantly less. Decreases in old growth will occur mainly in lodgepole pine within the areas intensively managed for timber harvest and in mixed stands of Jeffrey pine and red fir. Decreases in old growth will occur only within the suitable timber base. The remaining acres of forested habitats outside of this area will have increases in the old growth component.

The decrease projected for mid and early brush seral stages is a result of management activities designed to reduce monotypic mature stands to a stage more indicative of historical conditions. This activity would result in increasing diversity in these stands, not decreasing it. The decrease in wet meadows is the result of not implementing watershed restoration on all wet meadows on the Forest.

COMMENT: Diversity, Plan II-5. Should state that livestock grazing reduces diversity by consuming preferred species, increasing the frequency of nonpreferred plants and the invasion of annuals and alien species. (1617)

RESPONSE: Light or moderate grazing can improve species diversity. Overgrazing results in the decrease in diversity by allowing invasion of exotic annuals and other nonpreferred species. Overgrazing can also be a causal factor in creating headcuts and streambank erosion. This in turn can lower water levels, resulting in undesirable changes in vegetation communities. The key to effective livestock grazing lies in the ability to adequately control stocking densities and distribution so that the results enhance habitats, not detract from them.

COMMENT: Diversity Standards and Guidelines, Page IV-19. What is meant by managing for a "threshold level of vegetation types and seral stages"? Threshold of ecosystem or community collapse? A healthier standard would be: (1) Identify all ecosystems on the Forest and inventory all plant and animal communities and population levels; (2) Manage ecosystems to retain or recover genetically viable plant and animal populations; (3) Manage for sufficient acreage and dispersion of each ecosystem to prevent fragmentation and isolation of habitats. (1577)

RESPONSE: The Diversity Standards and Guidelines have been modified to improve clarity. Number 1 is not realistic given the current budgets.

ENERGY

COMMENT: Development of hydro and geothermal power on the Forest should be limited to areas which already have substantial developments of other types such as roads or buildings. (1027)

RESPONSE: Geothermal resources and stream flows suitable for development do not always coincide with previously developed areas. Development of these resources needs to occur where the resources are located. In working with potential developers, we encourage the use of existing disturbed areas, roads, or the clustering of facilities to the extent possible. An addition has been made to the Forest-wide Standards and Guidelines under Energy to reflect this philosophy.

COMMENT: We support natural power like hydro plants, geothermal, solar, windmill or whatever other type of natural energy sources are available, preferably in that order. (43)

RESPONSE: While implementation varies from Forest to Forest, the national policy is to encourage energy production on National Forests where it can be done in an environmentally acceptable fashion.

COMMENT: In your section titled Environmental Consequences - Assumptions, add: "Impacts from energy development can be mitigated by reducing the size of the development and/or its location; impacts can be prevented by denying the development when environmental consequences are unacceptable. The cumulative impacts of existing energy developments on Forest resources will be evaluated, as dictated by the requirements of CEQA and NEPA, and measures taken to repair any damage to Forest resources that has already occurred." (2170)

RESPONSE: We agree that impacts from development can be prevented by denying proposed projects. However, including this statement in the EIS implies that the Forest Service has the authority to deny proposed development, which in some cases it does not. Based on an analysis of a proposed small hydro project, the Forest can recommend denial of the project to the Federal Energy Regulatory Commission (FERC) if the estimated impacts are considered unacceptable. The FERC can, however, issue a license even if the Forest recommends denial of a project. For these projects the FERC will ask the Forest for impact mitigation measures which the FERC would include as license conditions. These mitigation measures could include a recommended instream flow which the project must maintain.

Geothermal leases extend to the lessee the right to explore for and develop the geothermal resource, providing that development complies with the conditions set forth in the lease. The Bureau of Land Management and the Forest Service jointly analyze the effects of geothermal development. The two agencies may differ on the magnitude or importance of the identified impacts. The BLM has the authority to approve geothermal development over the recommendations of the Forest Service if agreement concerning impacts and mitigation effectiveness cannot be reached.

ENERGY

Activities on National Forest System land are governed by the National Environmental Policy Act of 1967. Some level of environmental document is completed on all projects. These analyses include an appropriate level of cumulative impact analysis, generally identified during the scoping process. We feel that including this wording within the EIS is redundant and unnecessary.

COMMENT: Management Prescription #3, Energy. Does this mean that no new energy developments can be installed? How about new power lines? This needs further explanation because bighorn sheep do not react negatively to facilities such as power lines and towers. Will mining be excluded from this Prescription if it conflicts with wildlife values? Based on the sheep that are located on the Angeles National Forest, sheep respond to lack of food and human presence rather than the presence of facilities. The management direction that is given here for energy does not seem ripe for a broad brush statement, but rather it should respond to a site specific case. This seems like a de facto withdrawal, subject to the interpretation of the current Forest Officer. Management Prescription #4, Energy. Same comment as above. The assumption is that facilities will significantly affect wildlife values. Why not put this in the positive and say that the energy developments need to be compatible with wildlife values. (29)

RESPONSE: We have included wording suggested by your comment. However, we have also retained the concept of recommending against energy development where identified impacts are unmitigable and/or unacceptable. Ultimately the responsible Forest official will make a decision based on a site specific environmental document whether or not a proposed project is appropriate. It should be clear that for Prescriptions #3 and #4 the management emphasis is on wildlife and that wildlife needs will influence the extent of and restraints on energy development.

COMMENT: Cumulative impacts of energy development, particularly geothermal and small hydro, need to be assessed. (1634) (91, 328, 1617, 1857, 2180, 2190)

RESPONSE: We agree. However, we do not feel that the Forest Plan is the place to document those effects. The Forest Plan does not specifically permit any energy development. The FEIS discusses energy development as a possible management activity, discusses in general terms where it could occur, acknowledges commitments which have already been made, and provides management direction for addressing it on a site specific basis. Cumulative impacts will be discussed as directed by NEPA for specific projects at the time the projects are proposed and their effects analyzed.

COMMENT: A solar energy production plan should be considered. Solar energy does not adversely affect the environment in areas such as water quality, air quality and noise pollution as geothermal does. The Inyo National Forest is known for its high number of sun days per year. (2115)

RESPONSE: While we are interested from an informational point of view in solar development, there has been little indication that private industry is interested in solar development on the Forest. We feel that production or development plans should come from industry, not from the Forest. The impacts of such a plan would be analyzed once it is proposed.

COMMENT: Prescription #5 - Energy. This is really confusing! Here you are allowing energy exploration or development. What about wind energy? Are you going to allow a wind farm in a Research Natural Area? Should this be the same as Prescription #4 and say that the energy development should be compatible with the value of the particular area? Lands - Permit no utility right-of-way if not consistent with the energy direction.

What are the Forest goals for wind energy development? Or here, are you talking about the Forest goals for some other resource (IV-20)? Have any guidelines for evaluation of wind farms been established in the Plan? Page III-10 is not clear. The Forest policy for wind farms has not been established. (29) (33, 129, 225, 1616, 1891, 2170)

RESPONSE: We have rewritten the energy management direction for Management Prescription #5 to read "Allow no energy exploration or development". This will be consistent with the direction under lands and minerals.

There are no established goals or guidelines for wind energy development on the Inyo National Forest. National policy is that energy production is an appropriate use of National Forest System land. With wind energy, as with small hydroelectric energy, the Federal Energy Regulatory Commission (FERC), has jurisdiction over the issuance of energy production licenses. The Forest Service has no control over who applies for permits to develop such facilities. The Forest Service responds to the FERC with license conditions based on site specific environmental documents which analyze the effects of the proposed projects. Until more specific policy can be established, the Forest-wide Standards and Guidelines for energy state that wind energy must be compatible with the attainment of Forest goals for other resources.

COMMENT: In regards to Plan IV-58 - Energy, should this not read "Allow no energy development or exploration"? (912)

RESPONSE: We agree that the wording in the Draft Plan is inappropriate and have removed it.

COMMENT: It should be noted that Mono County is in the process of securing a grant to fund the preparation of an energy element for the County's General Plan. Policies developed from the study may be appropriate for application to Forest as well as private lands. (1638)

RESPONSE: We believe that close coordination between the Counties and the Forest is essential when dealing with energy related issues. We will be most interested in the final wording of the County's energy element.

ENERGY

COMMENT: Please add a Forest-wide Standard and Guideline for Energy as follows: Investigate the potential for new energy developments to provide affordable power to Forest facilities and local communities. (1638)

RESPONSE: The Forest is not in the business of producing power either for our own or others consumption.

Geothermal Resources

COMMENT: Proceed with geothermal exploration and development in the Hot Creek Airport area only. No other areas. (2031)

RESPONSE: Geothermal development will depend on the location of a developable resource and restrictions which are not prohibitively expensive. Once geothermal leases are sold, it's up to the developer to propose a location for the development.

COMMENT: Refusal of geothermal drilling on Monache Meadows. (1376) (281)

RESPONSE: An environmental analysis was completed during 1985 which analyzed the effects of leasing geothermal resources in the Monache area. The Decision Notice written subsequent to the analysis denied geothermal leasing because the analysis identified what were considered unacceptable impacts. Denial of leases does not prevent drilling; however, some of the unacceptable impacts were directly related to the improvement of access to the area. For some drilling activities, these same impacts could be incurred. It should be noted that the area has not been withdrawn from mineral entry. Future geothermal proposals would need to be reanalyzed based on up-to-date resource information.

COMMENT: No further geothermal exploration or development should be allowed until cumulative impacts of existing geothermal development plans on Forest values have been determined and appropriate mitigation plans detailed. The heavily industrial character of geothermal operations must be more clearly recognized in the Plan and its major areas of impact should be more specifically addressed. While these are, for the most part, mentioned in the Plan, their potential for serious disruption or long-term degradation of the environment are not given the emphasis that we believe to be their due. This is particularly true given the uncertain magnitude of future geothermal development on the Inyo National Forest. These areas of impact include air pollution from atmospheric emissions and fugitive dust, water pollution from accidental spills of geothermal fluids and chemical materials, degradation of aquatic ecosystems and fisheries, disturbance of wildlife and destruction of their habitat, depletion of the hydrothermal systems that supply Hot Creek and other hot springs, depletion of groundwater, consumptive water use, land form transformation, visual impacts of industrial facilities and operational areas, industrial noise, and increased vehicular traffic including heavy trucking on the roads of the region. (466, 118) (274, 278, 329, 341, 400, 467, 914, 923, 933, 950, 953, 954, 993, 1007, 1107, 1118, 1162, 1195, 1223,

1252, 1317, 1399, 1407, 1430, 1433, 1532, 1545, 1565, 1573, 1583, 1599, 1617, 1638, 1644, 1659, 1660, 1716, 1729, 1730, 1763, 1795, 1837, 1858, 1862, 1876, 1884, 1891, 1907, 1943, 1948, 1954, 1977, 1991, 2030, 2045, 2060, 2071, 2077, 2081, 2087, 2089, 2099, 2102, 2115, 2129, 2170, 2178)

RESPONSE: We strongly agree with the need to identify and understand the potential impacts, both individual and cumulative, which could result from geothermal development. As you suggest, they are many. Impacts have been identified in the following environmental documents prepared for activities in the Long Valley Known Geothermal Resource Area: the National Leasing Environmental Impact Statement prepared by the Department of the Interior, the Mammoth-Mono Unit Planning Environmental Analysis, the Leasing Environmental Analyses for Lease Blocks I and II, and site specific environmental documents for the past and current exploration and development proposals. As we understand more about the local geothermal system and the effects of its development, additional impacts may be identified.

Based on many sources of information, the Forest Plan attempts to identify what is the most appropriate use of any given parcel of land. The direction provided by the Plan can certainly affect which site specific uses occur; however, the approval of specific uses is not authorized by the Plan. For this reason, the Plan identifies, in a generic way, impacts associated with different uses but does not analyze those impacts in great detail. We do not feel that it's appropriate for the Plan to attempt to detail the impacts of site specific uses or developments, some of which may never happen.

The detailed analysis occurs on a project specific basis in a separate environmental document. Cumulative impacts are identified and mitigation measures are developed as part of the analysis. The mitigation measures would be included as conditions of exploration or development should the analysis not identify unmitigable, unacceptable impacts.

The decision that some form of geothermal development in the Long Valley Known Geothermal Resource Area is appropriate has already been made. Personal philosophies will differ over the correctness of the decision, how much or little development is appropriate, and where development should occur, if any. However, the leases extending the right to develop have been sold. The task now is to assure that the impacts which occur are kept to levels identified as acceptable in the environmental documents.

COMMENT: As well as involving consumptive water use, geothermal energy development will inevitably contribute to water quality degradation through sedimentation and accidental spills of geothermal fluids and chemical materials. (118)

RESPONSE: We agree that ground disturbing activities contribute to sedimentation. The magnitude of the sediment problem would depend on how successful mitigation measures are in preventing sediment from moving to stream channels. We disagree with the implication that any surface disturbance will degrade water quality. We believe that the implementation of Best Management Practices significantly reduces the potential for water

quality degradation from sedimentation even in those areas where sediment could reach live streams. Geothermal development was included in the term

"other facilities" because we believe that the magnitude of sedimentation caused or expected based on current operation and plans is very small compared with other Forest uses and activities.

Accidental spills are always possible. Emergency plans are developed to minimize damage when they occur. However, we would disagree that spills are inevitable and that they will inevitably degrade water quality. We believe that proper design of facilities, implementation of Best Management Practices and that careful handling and storage of materials will prevent most accidental spills from affecting water quality.

COMMENT: The inherent conflicts between the industrializing effects of geothermal energy development and the recreation priorities of the Forest must be acknowledged and more fully addressed in both the Plan and the EIS. (118)

RESPONSE: While not termed inherent conflicts, the potential conflicts between recreational developments and geothermal development were identified as an issue/concern early in the planning process. The discussion of conflicts is carried through the recreation section in the EIS. Geothermal conflicts are identified in the recreation section of the Affected Environment under the headings of Developed Sites and Dispersed Area where the discussion includes classifying geothermal development as "industrial complexes". Geothermal conflicts are further discussed in the Recreation Consequences section under Consequences Common To All as it would affect developed and dispersed recreation. These discussions are not extensive. However, there were extensive discussions of the conflicts between recreation use and geothermal development in the two leasing. We believe that the discussion in the EIS is appropriate to insure that the conflicts between recreation and geothermal development will be thoroughly addressed during the analysis of specific developmental proposals.

COMMENT: I believe that allowing geothermal development would create a risk of a severely lowered water table in an already arid community. I would like to see restrictions against this in the Final Plan, at least until studies can be done to assure the effect of that level and its effects on the overall ecology. (1372) (1586, 1949)

RESPONSE: We agree that geothermal development could result in lower water tables. The type of development which could result in such a groundwater decline is one which relies on groundwater for cooling purposes. To date we have not received any plans which have proposed to construct this type of development. The only water consumption proposed by existing plans is for well drilling, human use, and landscape watering. It should be noted that wording has been added to the Plan saying that new developments of any type in the Mammoth area will be denied if water is not available to support the need. Prior commitments made by geothermal lease agreements would not be subject to this commitment. However, the importance placed on water

consumption in the leasing documents would result in a detailed analysis of impacts from groundwater if it were proposed.

COMMENT: Geothermal energy development is not mentioned in the summary discussion of alternatives except as a source of cash receipts. Geothermal development will have significant to heavy impacts on various forms of recreation use and enjoyment and on the environmental integrity of the Inyo National Forest. It must be considered as one of the major factors to be discussed in the evaluation of the proposed alternatives. (118)

RESPONSE: This portion of the summary discusses what management activities would occur under each alternative. Geothermal development will not vary as the result of alternative implementation nor is it a Forest management activity. We agree that there should be a discussion of minerals/energy activities in this section and have added some language in that section.

COMMENT: In the DEIS summary, I suggest you add the following: Geothermal development will result in periodic water pollution and stream degradation in addition to being a source of sedimentation. (118)

RESPONSE: We disagree that water pollution and stream degradation are inevitable. They are not part of the existing environment which this section describes.

COMMENT: In reference to the DEIS summary, there is no evidence that the effects of geothermal development have been considered in assessing the environment consequences of implementing Forest planning alternatives. (118)

RESPONSE: Geothermal development is not a consequence of Plan implementation since it could occur whether or not an alternative is implemented. The decision to lease the geothermal resources within Lease Sale Areas I and II (commonly known as Lease Block I and II) was made based on planning documents which existed prior to Forest Plan development. Activities which occur within the leased areas must comply to the degree possible with the Forest Plan, however, the leases extend a right to develop the resource which cannot be revoked or altered by implementation of any of the Plan alternatives.

COMMENT: In the discussion of the individual alternatives in Chapter II of the DEIS, I suggest including a statement such as "The encouragement of geothermal development should be conditioned by its potential conflicts with recreational values and uses." (118)

RESPONSE: Geothermal development occurs in response to existing laws and the attainment of national goals in energy and mineral development. Efforts are made to resolve the conflicts between recreation and geothermal development.

ENERGY

COMMENT: In the Environmental Consequences section of the DEIS, geothermal energy development should be listed among indicators of disturbance to cultural resources. (118)

RESPONSE: It is included in the discussion as a direct indicator of disturbance under indicators in the cultural resources section.

COMMENT: In the Environmental Consequences section of the DEIS, please state that geothermal development will have significant impacts on fish habitats as a consequence of siltation and accidental spills of geothermal fluids and chemical substances. (118)

RESPONSE: Geothermal development is identified as having the potential to affect fisheries and fish habitat.

COMMENT: In the Environmental Consequences section of the DEIS, geothermal development should be included as an indicator of impacts on outstanding geological features. (118)

RESPONSE: Geothermal has been added as an indicator.

COMMENT: In the Environmental Consequences section of the DEIS, under Recreation, the effect of geothermal energy development on recreational resources should be expanded to include impacts of industrialization, noise, industrial traffic, impacts on air and water quality, consumptive water use and visual impacts. On Page IV-146, geothermal development should be specifically discussed as a land disturbing activity and as a source of water pollution. On Page IV-178, it should be directly acknowledged that geothermal energy development and production involve short-term gain (30 to 50 years) and long-term negative impacts such as loss of top soil, land form alteration, and probable hot springs diminution or destruction. (118)

RESPONSE: These effects are analyzed in more detail during the evaluation of specific geothermal development proposals.

COMMENT: Lands that have geothermal potential should be kept available for development. Because local demand for aggregate will increase as local sources are depleted, sites with this potential should remain available for future development. (1432) (2048, 2179)

RESPONSE: We agree that these resources are very limited in extent and that we should maintain the option to provide a supply of these resources in the future.

COMMENT: The proposed Plan has identified several areas within the Inyo National Forest where geothermal development should be allowed. In other areas it is not clear whether geothermal energy development will be permitted. Additionally, we have not been able to determine whether low voltage power lines required for geothermal development are compatible with

certain Management Prescriptions or Management Area Direction. The Plan should recognize the need for lower voltage power lines specific to each geothermal project wherever geothermal resources are discussed. (1093)

RESPONSE: The leasing of geothermal resources in new areas on the Forest would be on a case-by-case basis, either as noncompetitive applications are received or if the Federal government should choose to lease another area

competitively. Environmental documents would be completed to analyze the effects of additional leasing.

Environmental documents which analyze the effects of geothermal leasing would include the effects resulting from the location of low voltage powerines needed to support specific geothermal development proposals.

COMMENT: Please revise the Plan summary (Page III-19, third paragraph, fifth sentence) to read: "Although shallow subsurface testing has occurred, and four to five deep exploratory wells have been drilled, additional work is needed to better define the extent and quality of the resources." (1093)

RESPONSE: We have made the suggested change.

COMMENT: Management Area Direction for Area #7 is deficient in recognition of geothermal development and subsequent management direction. Additionally, Areas #8 and #9 have existing leases and obvious potential. It would follow that these areas should have Management Area Direction specific to geothermal resources. Portions of Areas #3, #4, and #5 are also within the KGRA, but don't merit specific area direction regarding future lease actions. (176) (2175)

RESPONSE: In general, the Management Area Direction further defines how a particular resource will be managed if the Forest-wide Standards and Guidelines or laws and regulations are not specific enough. We feel that the management of the geothermal resource is specifically defined by existing laws and regulations that are included by reference in the Forest-wide Standards and Guidelines. We do not feel that additional Management Area Direction is necessary.

COMMENT: A Forest map showing the first and second geothermal lease blocks with areas of no surface occupancy and other restrictions should have been included in the map packet. (118)

RESPONSE: The map in the minerals section of the Affected Environment chapter of the EIS shows the locations of the two lease blocks but without surface occupancy restrictions. The number of maps included with the EIS was deliberately kept to those needed to display alternatives, management areas and prescriptions, and major public use areas (OHV and OSV use). If included, the large number of resource oriented maps would overwhelm the EIS and Plan, would make the documents considerably larger than they currently are, and would make the printing costs prohibitive. For these reasons, we

are not planning to include the maps that you refer to. These maps are available for review at the Inyo National Forest Supervisor's Office in Bishop, California.

COMMENT: Although the document includes a site specific map, Figure III-12, showing the lease areas within the Mono-Long Valley Known Geothermal Resource Area, it would be useful to display the boundaries of the KGRA on a base map

to portray the extent of the KGRA. The identification of which areas of the KGRA are within the focus of the Forest Plan would be much easier to grasp if the acreage was on a base map. The use of acreage numbers without a MPA just adds to the complexity of the document package. (2175)

RESPONSE: We agree and have included the boundary of the KGRA (Known Geothermal Resource Area) on a map in the minerals section of the Affected Environment chapter of the FEIS.

COMMENT: Management Area #7. Any further geothermal power production facilities proposed here should be encouraged, through mitigation, to include ground water recharge of the "waste" cooling water to minimize the potential ground water withdrawal impacts. (1608)

RESPONSE: Existing state and federal regulations prohibit the discharge of waste geothermal fluids to surface drainages. Development proposals on the Forest rely on reinjection to dispose of these fluids. As you suggest, injection of waste geothermal fluids helps prevent reservoir pressure drops and lowering of fluid levels within the reservoir and connected aquifers.

COMMENT: There should be a recommendation for a full field EIS to assess the combined impact of the KGRAs (Known Geothermal Resource Areas). You should stress that geothermal proposals will be required to provide a cumulative impact analysis with a case-by-case consideration. (1845) (2178)

RESPONSE: We agree that cumulative impacts of new development need to be analyzed on a case-by-case basis as development is proposed. We are not, however, in a position to complete full field evaluation of the KGRA (Known Geothermal Resource Area). The existing lease areas were evaluated for environmental impacts at the leasing stage. The leases were sold with the stated right to pursue development based on the leasing analysis. Additional environmental analyses are directed for specific exploration or development proposals. There are no provisions for an additional area-wide analysis other than for cumulative effects. It should be noted that the analysis which was completed for Lease Block II was based on an estimated development size of 200 megawatts. Two hundred megawatts was believed to represent a full field development size for that lease area. As far as the remainder of the KGRA is concerned, there is no need to complete an environmental analysis of the effects of geothermal leasing if no one is interested in development in the area.

COMMENT: Geothermal plants have the potential to produce significant amounts of toxic effluents. Plans should be developed to mitigate the disposal of any brines and cooling tower emissions by these power plants. (1431) (487, 2120)

RESPONSE: We agree that there is the potential for these effects depending on the type of power plant facilities built. The section which you refer to (Affected Environment) is not the place to discuss these effects, however. Environmental documents analyzing the proposed facilities would identify the

types of potentially hazardous materials which could be part of the proposed development and their potential affects.

COMMENT: Need a cost-benefit analysis of geothermal development in pristine areas. (2178) (1836)

RESPONSE: The decision to lease geothermal resources or to impose mitigation measures on geothermal development are based on an environmental analysis of the effects of the proposed development. An economic analysis is a part of the overall analysis.

COMMENT: The third paragraph under "Issues, Concerns, and Opportunities" should clarify the fact that it is the Bureau of Land Management which authorizes the development of geothermal resources on National Forest lands through consultation with the Forest Service. The Forest Service is not the authorizing agency for geothermal development. (2175)

RESPONSE: The wording changes have been made.

COMMENT: Where on the west side of U.S. 395 is the "potential geothermal area" located? How are they mitigated to minimize their effects? Is the possibility of undergrounding the proposed power line along an existing corridor or an existing roadway shoulder being considered as a viable option? Are the visible impacts of this proposal from nearby high vista points being considered? (1608) (278)

RESPONSE: Potential geothermal development west of U.S. 395 will be limited to the existing lease areas unless the Federal government decides to lease additional land within the Known Geothermal Resource Area. The existing lease areas are shown on a map in the minerals section of the Affected Environment chapter of the EIS. Mitigation of potential impacts to resources such as visual quality are identified during the analysis of specific exploration or development proposals. All possible mitigation, such as burying powerlines, is evaluated for use where the situation is appropriate.

COMMENT: Of the nearly two million acres in the Forest, none is or would be managed with an emphasis on mineral development under the Plan. This is particularly troubling because of the land that has been identified as

possibly having commercially producible geothermal resources and has been leased to developers so those resources could be utilized. (1644)

RESPONSE: When the decision was made to lease land for geothermal development, the decision was, in effect, made to emphasize this use and to make other resource tradeoffs. There are no other areas on the Forest where mineralization is significant enough to emphasize its development. In addition, mineral development is given an emphasis of its own in the way it is treated by law. Unless withdrawn from mineral entry, mineral development can legally occur on any National Forest System land regardless of the applied prescription.

COMMENT: It concerns us that much of the land in Lease Block II would be subject to a new management prescription under the proposed Plan. The current emphasis on timber production is entirely compatible with geothermal development. The proposed management emphasis on nordic skiing would allow geothermal activities to be "modified or prohibited". (1644)

RESPONSE: The laws and regulations which govern geothermal development would allow developments to be modified or denied. Leasing the geothermal resources extends the right to develop if the resource is found; however, the Bureau of Land Management retains the right to modify plans of operation or to deny development if identified impacts are unacceptable and unmitigable. In theory, denial would not happen in areas where surface occupancy is allowed by the leasing document. We disagree that any particular emphasis will result in the modification or prevention of geothermal development.

COMMENT: The proposed Forest Plan paves the way for further restrictions to be placed on currently developable acres. Having paid over six million dollars for the rights to develop the geothermal resources on that land, we consider this to be contrary to our interests and to the expressed intent of the Department of Agriculture. (1644)

RESPONSE: We understand that the wording in much of the Plan is such that existing management activities and land uses could be subject to new pressures from changes in management emphasis. This is partly the result of the generic nature of the Plan. We recognize that the geothermal lessee has been extended the right to pursue the development of the geothermal resource should it exist. We also recognize that the leasing document already removed areas from development where conflicts with other surface uses were identified as unacceptable; these were identified as no surface occupancy. It is our intent to accommodate geothermal development as provided for under the terms of the lease while, at the same time, maintaining as many of the other public uses and resources as possible.

COMMENT: There is little evidence to support the assumption that geothermal development would have a significant impact on Hot Creek (Plan IV-38). Under most current development scenarios, 100% of produced fluid is reinjected. Hence, there is no net consumption of geothermal fluids. As cooling is

accomplished in a closed system, using air as the cooling medium, no water is consumed at any point in the process. Sampling programs now in place have not shown that geothermal production has any appreciable effect on flow, temperature, or chemistry of surface waters in Hot Creek or spring flow at the hatchery. (1644)

RESPONSE: We agree that the scenarios which you have mentioned are true, and we have modified the wording to make that point. We have retained a discussion of impacts to fisheries which could result from the withdrawal of water from surface sources since we have no way of guaranteeing that such a withdrawal will not be proposed in the future.

COMMENT: The assumption of cumulative negative impact on Hot Creek is not valid. It represents a worst case scenario which, pending further study, is probably not accurate. (1644)

RESPONSE: It represents a scenario that is potentially the most critical in term of unacceptable impacts to local thermal features. It also represents part of a scenario which is the most unacceptable to the public in general. Until further refinement of the thermal hydrologic model demonstrates beyond a reasonable doubt that withdrawal of thermal fluids by multiple users will not cause unacceptable impacts to Hot Creek, we will retain the assumptions as stated.

COMMENT: Geothermal development. We request a formal agreement for multiple use be prepared for each permittee and that plowed roads for geothermal activities be either restricted to certain non-peak snow months or carefully mitigated with current users. (1104)

RESPONSE: We agree that there have been impacts to winter recreationists from snowplowing activities. We could have done a better job of informing the public, providing for crossing points, relocating affected user routes, and/or guiding users into areas away from the plowed roads. These types of measures are developed during the evaluation of impacts from specific exploration/development proposals and will be included in future project evaluations. The most important aspect of the process is making sure that mitigation measures are implemented in a timely fashion. We do not plan, however, to prepare multiple use agreements as suggested.

COMMENT: The DEIS (II-70) equates leasable minerals with total power plants. The FEIS should explain this. The estimated annual output by decade indicates that the total output of power plants will increase from one during the first decade to six during the fifth decade. Does this mean six power plants for the last ten years or six power plants for the fifty year period? (2213)

RESPONSE: Geothermal resources are the only leasable minerals on the Inyo National Forest. Equating the leasable resource on the Forest with six (6) power plants came as the result of evaluating the reasonable potential of the two existing lease areas. No development scenario was developed for the first lease block; however, the existing information suggests that there is

sufficient resource to support two power plants. The Lease Block II environmental document evaluated four 50-megawatt plants as a development scenario. A total of six power plants was used as a measure of leasable mineral resources for each of the alternatives. The number of power plants listed for each decade is the total number estimated to be in existence by the end of the decade. The numbers are not additive. By the end of the sixth decade there are expected to a total of six power plants on the Forest.

Hydroelectric Energy

COMMENT: Obviously, water on the Inyo supports more wildlife than any other factor found in the Forest. There appears to be concern whether hydroelectric development would even be cost-effective. You state that hydro would reduce the amount and condition of aquatic and riparian wildlife habitats, scenic quality, and water based recreation. The Forest Service should decide to protect these resources that so many visitors and residents depend on (not to mention wildlife) and not allow any hydro development on the Forest. To do otherwise seems foolish. (1205) (3, 134, 139, 157, 160, 231, 281, 293, 319, 329, 358, 400, 430, 437, 449, 467, 481, 914, 933, 944, 945, 980, 993, 1008, 1015, 1032, 1159, 1174, 1185, 1188, 1191, 1202, 1231, 1236, 1248, 1269, 1295, 1317, 1332, 1407, 1429, 1430, 1485, 1487, 1545, 1583, 1585, 1589, 1594, 1617, 1622, 1626, 1632, 1659, 1660, 1716, 1730, 1731, 1748, 1757, 1776, 1784, 1798, 1804, 1837, 1841, 1858, 1866, 1868, 1876, 1891, 1893, 1930, 1943, 1974, 1977, 1983, 1987, 1996, 2030, 2045, 2054, 2059, 2091, 2102, 2115, 2119, 2120, 2129, 2142, 2147, 2152, 2161, 2170, 2178)

RESPONSE: As you suggest, water dependent resources such as riparian vegetation, wildlife and fishery habitats, recreation, and visual quality are very important on the Inyo National Forest. While emphasizing these resources, we must, to the degree possible, still be responsive to National Forest Service goals and objectives. These goals include energy development. In preparing our response to the Federal Energy Regulatory Commission (FERC) for license conditions, we compare the estimated impacts of each small hydroelectric proposal with the Forest-wide Standards and Guidelines relating to water dependent resources, and we review regulations and national policy. Generally, we would recommend in favor of a small hydro development which could maintain an instream flow sufficient to support water dependent resources. The instream flow recommendation would be accompanied by other actions which the developer would need to take to further minimize impacts of the project. The Forest will continue to recommend against any project which could result in water dependent resources dropping below the acceptable level.

COMMENT: Regarding your section titled Issues and Concerns - Energy, in the application of the "General statement of response" to hydroelectric power development, there is a need to establish limits first, rather than allowing an unspecified degree of degradation and then attempting mitigation. (2170)

RESPONSE: We believe that the phrase "while establishing the limits to which such development can acceptably affect other resources and environmental

values" does what you suggest. Many limits are already defined by the Forest-wide Standards and Guidelines. These and other limits, identified during the environmental analysis of proposed development, would be applied on a case-by-case basis if development was recommended.

COMMENT: Forest-wide Standards and Guidelines - Energy. Energy development is inconsistent with many Forest goals, objectives, and management directions, particularly those relating to wildlife, fish, habitat, diversity and riparian areas. Authorization of new hydroelectric power generators is inconsistent with Forest goals as developments of this type are known to have adverse impacts on riparian resources, which include degradation of resident trout fisheries, wildlife habitat, and visual resources. At the time of FERC relicensing of existing hydro powerplants, the Forest Service should insure that minimum streamflow (as established by the Forest Service, California Department of Fish and Game, etc.) are reestablished in all streams dewatered by hydro diversion. Also, energy conservation practices should be applied to all Forest Service management activities. (2170) (953, 1015, 1107, 1185, 1532, 1565, 1576, 1898, 1907, 1933, 1980, 2210)

RESPONSE: A Forest-wide Standard and Guideline for fish calls for the Forest to "negotiate with the Federal Energy Regulatory Commission and the affected utility companies to rewater selected reaches of streams for the reestablishment of resident trout fisheries." A Forest-wide Standard and Guideline for water calls for the Forest to "obtain water availability assurances for existing and foreseeable future nonconsumptive uses through the special use permit and the Federal Regulatory Commission `4E report' processes." The Forest is currently working to reestablish instream flows as a part of the hydro relicensing process.

COMMENT: What are the proposed plans for dam sites for hydro power on Big Pine Creek and where will the dam or dams be located? (0120)

RESPONSE: There are currently no plans for additional dams or powerhouses on Big Pine Creek.

COMMENT: We do not need any more hydroelectric power development. Rewater all dewatered streams to recover the riparian habitat. Guidelines should be: A) Prohibit winter flow depletions (Nov. - March) to prevent degradation of fisheries; B) Restore mean monthly flows (April - Sept.) to protect fisheries and riparian values. (1532)

RESPONSE: We agree that the guidelines which you have suggested are desirable from a fisheries standpoint. However, in many cases, they are currently outside of our ability to enforce. The Forest-wide Standards and Guidelines relating to fisheries call for working with the Federal Energy Regulatory Commission and the affected utility companies to rewater selected reaches of streams; maintaining instream flows in unimpacted stream reaches needed to support existing fisheries; and maintaining water levels in reservoirs and natural lakes to support fisheries to at least existing

levels. We feel that these guidelines provide long-term direction for reestablishment and/or maintenance of fisheries resources.

COMMENT: We believe that the Inyo National Forest should consider developing a Forest-wide hydroelectric power management plan that could lead to a better assessment of the cumulative impacts of these projects. Also, coordinated review of individual Federal Energy Regulatory Commission (FERC) applications with the Department of the Interior could increase opportunities to provide better habitat protection through FERC'S processes. (487)

RESPONSE: While a hydroelectric management plan is an interesting idea, without knowing specifically what you had in mind, we are unable to comment on how appropriate it would be to include it in the Forest EIS or Plan. It's quite possible that such a plan would come under the authority of the Federal Energy Regulatory Commission (FERC). We work closely with the FERC in providing our best recommendations for resource protection.

COMMENT: Under the recent Escondido Mutual Water Company vs. La Jolla Bands Mission Indians, any conditions proposed by the Forest Service to the Federal Energy Regulatory Commission with respect to the protection of natural resources in a hydroelectric licensing proceeding will be binding upon FERC. The Plan should include a discussion of the responsibility mandated by "La Jolla", identify cases in which adequate instream flows have not been provided, and set forth objectives for correcting past errors. It should indicate the criteria to be used, and a commitment to require suitable bypass flows to protect riparian dependent resources. (1108) (978, 1843, 2080, 2183, 2213)

RESPONSE: In general we agree with your synopsis of the "Escondido" decision. We disagree with the use of the word "any" because recommendations to the FERC are based on impacts identified in an environmental analysis of the proposed project. They cannot be just any recommendations we might happen to come up with. It's possible that some people would profit from a description of the "La Jolla" case and an explanation of the Federal Energy Regulatory Commission operating procedures. However, we have taken the position that direction provided by law, regulation and general policy will be included in the EIS and Plan by reference and will not be restated. We will be working in accordance with the Forest-wide Standards and Guidelines for fisheries and riparian resources to reestablish streamflows in streams listed in the Management Area Direction for each Management Area. Our goals are long-term, because we are constrained by agreements which provide for the long-term continuation of many existing uses/diversions regardless of new direction in the Forest Plan. The reestablishment of some flow is already occurring as the result of small hydroelectric relicensing activities.

COMMENT: In the Forest-wide Standards and Guidelines for energy, you should include the evaluation of energy developments, particularly hydroelectric projects, as they affect fish, wildlife, and recreational resources. (1433) (2023, 2170)

RESPONSE: We believe that the Standards and Guidelines for energy accomplish what you suggest. The wording refers the reader to other sections of the Standards and Guidelines by saying "...compatible with the attainment of established Forest goals for other resources or uses." The evaluation of any proposed small hydroelectric project would need to evaluate the impacts to fisheries, riparian resources, wildlife habitat, and recreation based on the Standards and Guidelines for those resources.

COMMENT: Oppose any further hydroelectric development until a Forest-wide cumulative impact study and Forest-wide power management plan that identifies all foreseeable projects and their impacts is prepared. (1108) (978, 1843, 2080, 2213)

RESPONSE: In October 1986, the Federal Energy Regulatory Commission completed an environmental impact statement which analyzed the effects, singular and cumulative, of eleven of the largest proposed hydroelectric projects proposed for construction on the Forest. This study constitutes a Forest-wide cumulative impacts statement for these projects. The cumulative effects of other proposed small hydroelectric projects will be studied on a case-by-case basis as the projects are proposed.

We are unable to respond to your suggestion concerning a Forest power management plan as we are uncertain what this plan would consist of.

COMMENT: The Forest Service should take a more active role in the management of existing small hydro facilities. (1430)

RESPONSE: The Forest Service actively participates in regulating small hydro projects. The Forest Service replies to the Federal Energy Regulatory Commission (FERC) with licensing conditions or recommendations for licensing small hydroelectric projects; issues special use permits (with conditions) for occupation of National Forest System lands by small hydroelectric facilities; and participates in the small hydroelectric relicensing process. As part of these three activities, the Forest Service assists in completing instream flow studies which assess changes to riparian vegetation and habitat, fisheries habitat, and visual condition. Finally, the Forest Service prepares environmental documents which document the potential impacts of small hydroelectric development on a site specific basis.

COMMENT: Regarding the Forest-wide Standards and Guidelines for energy, do not encourage small stream energy development. Allow it if requested and if it conforms to Standards and Guidelines #2 and #3. Small stream hydroelectric development devastates the riparian zone. (1431)

RESPONSE: We agree with your assessment of the word "encourage"; we have removed it.

COMMENT: Regarding the discussion on hydroelectric energy, replace: "It would be desirable... represented by many projects" with "prohibit small

hydroelectric developments of this type because they are known to have adverse impacts on riparian resources which in turn degrades resident trout fisheries, wildlife habitats, and aesthetic resources supply and demand." Replace: "the demand for energy ...when all resources are considered" with "due to the fact that small hydroelectric developments provide less than 1% of our Nation's energy needs, loss of critical riparian areas and wildlife habitats is an unacceptable trade-off for such small energy gains." According to the sixth electricity report by the California Energy Commission, California has an oversupply of electrical generating capacity well into the 1990's. In Forest Plan Management Emphasis, add to "The Forest Plan establishes specific direction...hydroelectric applications" that "It is the Forest's goal to prohibit new small hydroelectric developments. In addition, the Forest will take steps necessary to insure that at the time of FERC relicensing of existing hydroelectric development, minimum stream flow (as established by Forest, California Department of Fish and Game, and other public agencies and organizations) be reestablished in all streams dewatered due to diversions of any type." (2170) (1617)

RESPONSE: While we agree that small hydroelectric development can adversely affect the resources you mention, it is not the goal of the Forest to prohibit small hydroelectric development under all circumstances. National goals call for providing the opportunity to produce alternative energy from National Forest System land. These goals were established with the expressed purpose of increasing the total percentage of power produced from these sources. Within that context, it is the Forest's goal to assure that acceptable levels of water dependent resources are provided for when considering future development and to reestablish acceptable levels of water dependent resources wherever possible. For these reasons, we have chosen not to make the first two suggested wording changes.

Your suggested wording relating to Forest management emphasis, in effect, paraphrases what has been stated in the Standards and Guidelines referenced by the existing wording. While it is admittedly inconvenient for the reader to search out the areas referenced, we believe that greater detail is provided by directing the reader to these other areas. On a Forest-wide basis, we expect to be able to improve the condition of the resources mentioned by managing according to the Standards and Guidelines.

COMMENT: You should include the development and implementation of a monitoring and enforcement program concerning full compliance of minimum streamflow requirements at all FERC licensed projects within the Forest. When violations of the minimums occur, the Forest Service should contact the FERC and the SWRCB, and request appropriate actions pursuant to the Electric Consumers Protection Act (ECPA) and applicable state law. ECPA provides for fines of $10,000 per day for each day of violation. (1269) (2213)

RESPONSE: Chapter V of the Plan describes monitoring activities. One of the monitoring objectives listed under the riparian resource is to "determine whether mitigation measures for small hydro projects and geothermal development are sufficient and effective in maintaining riparian vegetation and other riparian dependent habitats". One of the mitigation measures for

small hydro development is the maintenance of instream flow requirements made part of the projects license conditions. Instream flows will be monitored as part of the process of meeting our objective for the riparian resource. We have noted your recommendations concerning communication with the FERC and SWRCB in relation to violations of instream flows.

COMMENT: All existing manmade impoundments in the Forest including those used for the diversion of water or hydroelectric power generation should be dismantled immediately.

RESPONSE: The removal of all existing manmade impoundments on the Forest is not a management option available to the Forest. Even if it were the National policy of the Forest Service to pursue this objective, and existing legal agreements between the Forest Service and those who constructed and use these facilities would prohibit their removal for many years.

FACILITIES

COMMENT: Encourage use of public transportation in the Mammoth Lakes area. The great amount of traffic and exhaust from vehicles is detrimental to the environment. (1260) (62, 80, 95, 158, 481, 1333, 1490, 1654, 2191)

RESPONSE: We agree that increased vehicle use in some areas is becoming a problem. Mass, or public, transportation is identified in the Forest-wide Standards and Guidelines as one of those options to be considered when appropriate. The Forest Service coordinates with the Town of Mammoth Lakes, Mono County, and the California Department of Transportation to insure that changes in off-Forest traffic flow and volume created by on-Forest uses is anticipated by the other agencies and can be planned for. These other agencies assist in developing environmental documents which analyze potential traffic changes resulting from on-Forest projects. The jurisdictions for the different highway/road systems belong to the separate agencies. It is their decision whether to provide public transportation or to encourage private development of mass transit systems. The Reds Meadow Shuttle is an example of the use of mass transit by the Forest on the Forest road system.

COMMENT: Give consideration for a regional mass transit system. In addition to the community of Mammoth Lakes, the following areas could all provide points for a transit route(s) which would help in removing a portion of the automobile traffic from the area's roads: Hot Creek geothermal area, Hot Creek Fish Hatchery, the Inyo Craters geological features, and the developed campgrounds. (1608)

RESPONSE: In the Forest-wide Standards and Guidelines, it's stated that we consider mass transit options when vehicle use exceeds the capacity of existing roads or threatens to damage resource values. The opportunities for mass transit go beyond this. A regional mass transit system may have great appeal and value in the Mammoth area. There are many areas of National

Forest that receive intensive visitation where a mass transit system could serve. However, the transit system would have to be centered in the community and integrated with those surrounding areas that could benefit and become a part of the total system. It would have to be economically viable and be able to pay for itself. Subsidized systems have been established in the past but have not lasted because of shortages of funds.

The Forest Land Management Plan is not the appropriate document to direct which areas can best be served by a mass transit system. A proposal for mass transit will initially have to be proposed by those entities that could support such a system. The Forest Service would be interested in coordinating with any planning effort to fully identify the potential for such systems. We have added the following language to the existing Standard and Guideline pertaining to mass transit: "or when public facilities can best be served by a community wide system proposed by another entity".

COMMENT: Reestablish the Inyo Craters Interpretive Trail. Rehabilitate and update existing interpretive site exhibits. Rehabilitate the Mammoth Visitor Center to emphasize self-service and after hours information. (1099)

RESPONSE: Direction for rehabilitation of facilities and upgrading facilities is located in the Forest-wide Standards and Guidelines under Developed Recreation - Public; it applies to all developed recreation and interpretive facilities. All facilities will be maintained at full service standards; this includes the above facilities. Since the backlog of maintenance needs is major, some time will be needed to fully rehabilitate all facilities if and when funding reaches full service levels. It may take 10-15 years to fully rehabilitate all facilities. The Inyo Craters Interpretive Trail and the Mammoth Visitor Center will be prioritized along with all other projects on the Forest.

COMMENT: I was pleased that the basics of an interpretive plan were included in the Plan. The public wants to see wilderness rangers, entrance station personnel, naturalists, and trail crews out in the forest as proof of active management. A joint interpretive and enforcement program can do much toward solving some of the more aggravating resource damage problems such as campfire prohibition areas. I recommend a planned series of general resource and management information articles in local and regional newspapers and magazines. Well publicized tours of scenic, special interest, and politically sensitive areas increase public understanding of management direction. An improved public relations program by revamping the Forest Host training program. It seems to me that if any resource values are to be maintained, the prime hope is through well developed educational programs. I do not find any effort to address this concept seriously. Encourage the further application of well produced self-guiding trail pamphlets and information. (1252, 1900, 1608) (1099, 1359, 1820)

RESPONSE: Direction under interpretive services in the Standard and Guidelines sets the stage for educational programs oriented towards resource values. Specific opportunities will be identified through District level

interpretive plans and recreation composite plans. The interpretive program would be budgeted at full service levels under the Preferred Alternative.

COMMENT: Work with Caltrans to develop winter snow play parking access along U.S. 395 at Smokey Bear Flat. Utilize the California Sno-Park program to develop parking areas for snow play along the Mammoth Scenic Loop Road. (1099)

RESPONSE: Add the following wording in the appropriate recreation direction for Management Areas #4, #5, and #8: "Coordinate with Cal Trans and Mono County to plan and develop parking and snow play opportunities along U.S. 395, State Route 203, State Route 158, the Lake Mary Road and the Scenic Loop Road."

COMMENT: Please consider any moves to coincide with the location of the White Mountain District Office and the present Forest Service compound. (1645)

RESPONSE: The co-location of the Forest Supervisor's Office and the White Mountain Ranger District office has been considered several times in the past. The most recent of these was in 1986. Consideration is still being given to the idea, but no decision has been made to implement the co-location move.

COMMENT: The future Mono Lake Visitor Center in Lee Vining is planned to serve as a northern gateway to the Inyo National Forest. This center's future use and management should include a discussion of how the future of Mono Lake will impact the success of programs at the visitor center. (1617) (2170)

RESPONSE: The Inyo National Forest is preparing an environmental impact statement which will evaluate the effects of different types of management on the natural resources of the Scenic Area. The evaluation will include an estimate of the effects on Scenic Area management from changes in the conditions of Mono Lake. Your comment has been forwarded to the leader of the team putting the EIS together.

COMMENT: The following indicators should be added to the facilities section (Pg II-6): There is a need to coordinate with local fire districts when planning structural developments on the Forest. There is a need to work with local communities and agencies when establishing administrative facilities in or near community areas. (1638)

RESPONSE: The section of the EIS referred to by this comment lists how the issues and concerns identified during the public scoping process were addressed. There were no issues or concerns identified relating to coordination with local fire districts when planning structural developments or administrative facilities on the Forest. Coordination between the Forest and local fire protection districts is currently accomplished through

continued informal communication; through involvement of the districts in the environmental documentation process for proposed developments on the Forest; and through notifications sent by county and city planning departments to affected parties or government agencies of proposed construction activities within the county or city. We agree that continued communication with the fire protection districts is in everyone's interest, and we believe that the current processes accomplish that objective.

COMMENT: How are the power production facilities, the community utilities and the Lee Vining Ranger Station complex to be minimized? Undergrounding electrical utility lines, where appropriate? Construction of more aesthetic views to hide the utility facilities (wood slatted chain link fencing, cinderblock wall, etc)? (1608)

RESPONSE: Management Area Direction for Management Area #2 - Lee Vining, provides for the development of a corridor viewshed analysis and plan for State Route 120 from the junction of U.S. 395 to Tioga Pass. That analysis would address the visual impact of power production facilities, community utilities, and the Lee Vining Ranger Station complex. The analysis would recommend specific actions which could be taken to improve visual condition where appropriate.

COMMENT: Facilities IV-21. 1. Please insert: "...consistent with Forest goals and objectives and local plans for the lands served...". 5. Please revise: "...coordinate Forest highway projects with affected agencies including safety improvements such as emergency access routes and avalanche sheds." 7. Please revise: "...provide new facilities where need can be justified and/or where promoted by local plans." 9. Please add: "...or when promoted in local plans." 10. Please insert: "...level of development, local plans, and the Forest goals..." 11. Please insert: "...whenever possible without endangering the safety of users, before developing...". (1639, 1638)

RESPONSE: We agree with the need to coordinate closely with local agencies and, when appropriate, support local goals and objectives. However, we believe that is is not in the Forest Service interest to include the additions which you have suggested. We retain the right to disagree with local plans should those plans be contrary with Forest Service goals and objectives. We also feel that the existing process of identifying and dealing with safety hazards is appropriate.

COMMENT: Minimal expansion of parking lots and rest stops. (437)

RESPONSE: We agree that parking lots and rest stops should not proliferate. Specific proposals to expand parking lots and build rest stops are received and analyzed on a site specific, case-by-case basis. These proposals may come from in-house to respond to recreation or other resource management needs, or they may originate from the counties, cities, or Caltrans.

COMMENT: I am particularly appalled by the number of bridges you people are constructing. (2154)

RESPONSE: The Forest is committed to providing and maintaining safe access along major routes within the Forest wilderness areas. To this end, there have been many trail bridges built over the past years. The specific bridge locations and the standards to which the bridges have been built, in some part, reflect the philosophy concerning wilderness recreation at the time. The current philosophy is to construct or reconstruct trail bridges only where the safety of the user is an overriding concern. In many cases, recent bridge construction has resulted from a fatality or near fatality at the specific site.

Roads

COMMENT: The Plan discusses several proposals that would increase the use of Forest land, including mining, lumber and public use. However, there is a very minimal discussion of the type of impacts these actions will have to the existing highway system. The California Department of Transportation has identified several locations where there are some major problems to the existing facilities. The final environmental impact statement (FEIS) should discuss the impacts to the existing highway facilities. Also, the FEIS should indicate some type of cooperation between the Forest Service and Caltrans in developing any type of improvement to the highway facility as a result of the proposed Plan. (30) (1036, 1040, 1042, 1759, 1845)

RESPONSE: We agree that changes in Forest use identified in the Plan would have an impact on Caltrans facilities. For example, it is likely that a major increase in use would occur if ski areas were expanded. However, on a broad scale, the Plan identifies appropriate uses of National Forest land; it defers the decision to actually allocate resources and approve land use or occupancy until specific projects are proposed and their impacts can be analyzed. The approval of additional ski area development would occur based on the analysis of the impacts of a project as identified in a separate environmental document. The fact that the current ski area use contributes to increased traffic congestion on U.S. 395 and within the Town of Mammoth Lakes emphasizes the need for detailed traffic analysis at the time of project evaluations. We have no way of knowing whether or not any specific project identified in the Plan would actually happen which puts those specific project impact analyses outside the scope of this EIS and Plan.

COMMENT: Roads from Deadman Campground up Deadman Creek drainage and above the Obsidian Dome on the Glass Creek drainage should be either converted to trails or allowed to revegetate. (1759)

RESPONSE: Recreation direction for Management Area #7 - Upper Owens River calls for a recreation composite plan that would include this area. The alternatives for this section of road will be explored in that document and a decision made on what type of access would best serve the area.

FACILITIES

COMMENT: In the facilities element of the Preferred Alternative (II-59), add: "To protect wildlife, scenic, soil and water resources, reduce road access by closure or obliteration wherever possible." Roads degrade wildlife habitat, visual resources, and soil and water quality; unnecessary roads should be removed or at least closed. (2170) (2190)

RESPONSE: The direction written in the Forest-wide Standards and Guidelines which is common to all of the alternatives for facilities is to "Eliminate public safety or resource protection concerns, by considering closure, relocation or reconstruction of non-system roads consistent with available budgets."

COMMENT: Management Prescription #17 - Limited Access. We concur with the direction to not upgrade 4WD roads to 2WD and to obliterate mining roads after they are no longer needed. The Forest should systematically analyze the potential to obliterate or close off other roads in these prescription areas; there are many that are redundant, poorly routed or constructed, unnecessary or detrimental to wildlife and scenic values. Add: "develop no additional...2WD or 4WD access." Add to the range element: "Reduce grazing if fish or wildlife habitat degradation is occurring." (1617)

RESPONSE: The analysis which you suggest will occur as part of updating the 1977 Interagency Motor Vehicle Use map. Roads open for use within Management Prescription #17 will be specifically designated in that update. Routes will be proposed for relocation or elimination where routes are poorly located or duplicated. No additional roads will be available for public use.

COMMENT: No new roads should be built into roadless areas in order to protect them for future wilderness consideration. The Final Plan should list all the roads that are to be closed and/or obliterated and maps of the proposed new roads. (278) (1634, 1673)

RESPONSE: The Plan evaluates the wilderness attributes of all the roadless areas on the Forest. The recommended areas were modified as a result of the Draft Plan public review and response. Some of the roadless areas not initially included in the wilderness recommendation have some wilderness attributes and are accessible by a limited number of existing low standard roads. These characteristics make them desirable for a limited access form of dispersed recreation, and they have been designated Management Prescription #17. The remaining roadless areas are included in other management prescriptions.

No maps of project road closure areas or of new road construction are included. New construction is identified as part of plans for specific projects. The exact location and total length of new roads are not known until these plans are completed. The estimates of projected construction on the Forest are our best current estimates. The Forest-wide Standards and Guidelines for facilities have been rewritten to reflect the need to balance the construction of new timber sale and other non-recreation roads with the removal of some existing roads. The closure of specific roads will need to

be evaluated on a road-by-road basis at the time of closure in order to identify roads most suitable for closure.

COMMENT: Inevitably the 68 miles of new road for logging and developed recreation access proposed will degrade high value natural resources such as deer migration routes, holding areas and summer range; mountain lion habitat; old growth forest; and scenic values. These conflicts must be specifically dealt with in the Plan, particularly for very sensitive areas like San Joaquin Ridge and Monache which are both very valuable to deer, mountain lions, spotted owls and other wildlife species as well as having outstanding scenic values. Retention of high value natural resources should have priority over development of any kind. Specific plans for closure or obliteration of unnecessary and resource damaging roads must be included in the Plan. The public identified the "need to reduce roads to prevent environmental damage" (Plan I-15), and the Forest-wide Standards and Guidelines recognize the need to "upgrade, close or obliterate road segments as needed for public safety and/or resource protection." Also, there is no need to construct new trails in the White Mountains. A 1983 report on bighorn sheep in the White Mountains recommended that no new trails be constructed in bighorn habitat.

We believe that the handicapped, senior citizens, and hikers of today would not be able to see or reach their destination without more improved roads. In other words, we can still maintain development of the land and hold the impact areas. (2170, 43) (27, 140, 151, 157, 166, 170, 171, 214, 232, 266, 278, 288, 289, 311, 322, 324, 331, 382, 383, 428, 438, 934, 970, 1161, 1176, 1363, 1401, 1430, 1471, 1545, 1566, 1581, 1592, 1617, 1619, 1632, 1633, 1648, 1650, 1654, 1656, 1691, 1705, 1717, 1721, 1757, 1780, 1781, 1908, 1933, 1936, 1938, 1947, 1980, 2005, 2030, 2061, 2101, 2111, 2120, 2137, 2142, 2190)

RESPONSE: Sixty-two of the sixty-eight total miles of road proposed under the Preferred Alternative are roads which would be built in support of developed recreation. Most of these roads are internal campground roads scheduled for existing and proposed campgrounds. Most of the new campgrounds would be within existing concentrated recreation areas. The impacts of these roads would be analyzed as part of the overall project impacts as the projects are proposed for development. These analyses are beyond the scope of the EIS and Plan.

The management emphasis within the White Mountains would be to minimize the development of facilities. Few, if any, trails would be built as trails are generally not needed. Where conflicts with mountain sheep are identified, preference would be given to the sheep. This is specifically stated in Management Prescription #3.

COMMENT: No road building should be permitted until the cumulative impacts on wildlife and watershed integrity are assessed. (1664)

RESPONSE: The cumulative impacts of road construction would be assessed along with those of the project which the roads support. These impacts would be analyzed on a project specific basis as projects are proposed.

FACILITIES

COMMENT: I am concerned about erosion from unimproved steep canyon roads along streams due to snowmelt runoff or heavy late summer-autumn tropical thunderstorms. In particular, Road 1N03 from the Burger Powerhouse to the beginning of the flat area before descending to the Log Cabin Mine. In about 1957 after two consecutive days of afternoon cloudburst type rains, the entire 2.1 miles of road was washed out. Because of the possibility of damage to the canyon, I suggest that the traffic be transferred to the special use permit road for mining purposes. (54)

RESPONSE: The roads which you refer to are within the Mono Basin National Forest Scenic Area. The Forest is in the process of completing a management plan for the Scenic Area which will include a transportation plan for roads. Road closures will be addressed in this plan. Your comment has been forwarded to the Mono Basin planning team.

COMMENT: In the Environmental Consequences section of the DEIS, mineral and energy traffic will undoubtedly use Forest roads in the future, as has already been done in the past and present, and this impact on facilities should be discussed. (118)

RESPONSE: The use of Forest roads is included under the facilities section. We agree, however, that the discussion should be expanded to include maintenance responsibilities and we have added some appropriate language.

COMMENT: Support maintaining McMurry Meadows at the existing level of road development. New roads or campgrounds would conflict with deer, cattle grazing and riparian values. (1019)

RESPONSE: The McMurry Meadows area lies within Management Area #17. The management emphasis is for mule deer and limited access. In both cases, the existing roads would be maintained, and no new roads constructed into previously unroaded territory. Road reconstruction or realignment could be made if necessary to protect resource values. No new roads are planned for this Management Area.

COMMENT: Roads should not be built in non-wilderness areas unless there is a compelling reason to do so. One might establish a policy that the benefit/cost ratio must be at least 3 before new roads be built or old ones widened. (1316)

RESPONSE: Overall road construction under the Preferred Alternative is limited to six miles of timber access road and sixty-six miles of recreation road, mostly within campgrounds. Most of the Forest will be included within areas where new road construction is limited or prohibited.

COMMENT: I strongly support adoption of the 1977 Interagency Motor Vehicle Use Plan. (1519)

RESPONSE: The Inyo National Forest was one of the agencies which participated in the development of the 1977 Interagency Motor Vehicle Plan (IMVUP). The IMVUP is currently in effect on lands administered by the Inyo National Forest. The reference to the IMVUP is located in the Recreation Section of the Forest-wide Standards and Guidelines under off-road vehicle use.

COMMENT: It is not clear where utility transmission line access or patrol roads fit into the mileage totals given. If they are uninventoried roads, closed to the public, please state so. (1093)

RESPONSE: The roads used to construct, maintain, and patrol the transmission lines through the Forest are not on the inventory of Forest roads. They were built and are maintained by the utility companies who own the utility lines. For this reason, they are not Forest Service system roads and are not reflected in the mileage totals given in the Plan. You would need to use the Interagency Motor Vehicle Use Plan to determine if these roads are open for use.

COMMENT: For Management Prescription #18, I recommend that the facilities element should also state: "Allow no new road construction that would degrade important wildlife habitat." (1433) (1836)

RESPONSE: The Forest-wide Standards and Guidelines which are common to all alternatives and management areas provide detailed direction for the protection of important wildlife habitat and riparian areas. Best Management Practices and accepted engineering methods are also common to all alternatives and management areas. We are relying on these Standards and Guidelines to protect the wildlife resource while at the same time allowing other uses of the land.

COMMENT: Love to see some of the funds in the road building and maintenance budget be redirected to badly needed trail reconstruction projects. (182) (1748)

RESPONSE: While there is some flexibility in funding trail construction and reconstruction, most dollars are locked into specific uses as the money comes to the Forest. This is the case with most Forest funding (money for timber harvest, land acquisition, minerals administration, etc.). These dollars are allocated to the Forests and the Districts as specific dollars to complete specific projects. Funding for trail work has decreased as has the overall Forest Service budget. Congress could increase trail funding by redistributing the current Forest Service budget or by increasing the overall Forest Service budget with trail funding enjoying its proportional increase. Trail improvements can also be accomplished through private donations of time, labor, and materials and voluntary assistance from the public.

COMMENT: Pizona Management Area. Add to the facilities element: "All roads in sensitive riparian areas should be closed." (1261)

FACILITIES

RESPONSE: Specific roads will be evaluated for closure on a case-by-case basis. The Forest-wide Standards and Guidelines for riparian areas call for giving emphasis to riparian values, for protection of streams and wetlands, and for preventing adverse changes in riparian habitat conditions. Relocating or closing roads that currently go through these areas will have a high priority.

COMMENT: "...construct a total of 6 miles of roads for timber management..." conflicts with Page III-28 "...21 miles of timber related collector road would be needed...". I support the former, but only if these roads do not enter existing roadless areas. (2185)

RESPONSE: The six miles of road referred to is the number of miles of road which would be needed for timber management if the Preferred Alternative were selected. These miles are in currently unroaded areas not recommended for wilderness and suitable for timber harvest. The 21 miles of timber related collector roads referred to would be the number of miles of road which could be constructed if all roadless areas with suitable timber land were roaded. Not all roadless areas are scheduled for timber harvest. The six miles are identified in the Preferred Alternative description. The 21 miles are described in the Affected Environment description.

COMMENT: We feel that the planned rate of road development on the Inyo Forest is not only needlessly expensive, but also exposes greatly increased Forest acreage to adverse environmental impact. The present emphasis on using National Forest to provide space for vehicular recreation is a mistake which damages the land and necessitates an unreasonable amount of enforcement work for already overtaxed Forest Service staff. The provision of improved roadhead camping amenities is a proper way to localize and control the impact of recreational use while giving visitors an enjoyable Forest experience. (1562) (2142)

RESPONSE: Recreational use of National Forest System land includes a wide range of activities from backpacking to motorhome camping at fully developed campgrounds to 4-wheel driving on primitive back country roads. Road construction supports one segment of the recreating public who feel that they have the right to share the National Forest with other users. Even with the proposed new road construction, a relatively small portion of the Forest will be available to this user.

COMMENT: Facilities (III-II). The fourth paragraph of this section is inaccurate. Current management direction for some Forest highways is inadequate for the danger of snow slides. Appropriate mitigation, including emergency access routes, has yet to be sufficiently addressed. (1638)

RESPONSE: In general we feel that the existing direction as identified in the Forest-wide Standards and Guidelines is adequate. Forest Service maintained roads subject to avalanche hazards are generally closed during the winter. In addition, the Standards and Guidelines call for either upgrading roads to a safe condition or closing them where they are unsafe. The Forest

Service will continue to coordinate with other agencies responsible for highway construction and maintenance both for long range planning and solving site specific problems. In the past, site specific reviews between the Forest and the counties or Caltrans have been productive in dealing with project level concerns. We believe that site specific problems should continue to be dealt with in this fashion.

COMMENT: Close Highway 168. (331)

RESPONSE: We have no plans to close Highway 168.

COMMENT: Do not want to see you close the road to Crooked Creek and Cottonwood Creek in the White Mountains. (955)

RESPONSE: Crooked Creek and Cottonwood roads will remain open for current uses. These roads will be within Management Prescription #17. The road to Sidehill Springs will be within a proposed wilderness. This road will be temporarily closed until Congress designates the area a wilderness or not. If the area becomes a wilderness, the road will be permanently closed. If not, the road will be reopened.

COMMENT: No trans-Sierra highway be built. (73) (402)

RESPONSE: To our knowledge there are no trans-Sierra highways being designed, planned, or even discussed.

COMMENT: We ask the Forest to consider closing the White Mountain Peak Road above the Barcroft Laboratory. (2152)

RESPONSE: The White Mountain Peak Road is currently closed to the public approximately one mile south of the Barcroft Research Station. The only use of the road above the station is for maintenance of facilities on the top of White Mountain Peak by personnel of the research station.

COMMENT: Keep roads out of the area east of the San Joaquin Ridge and the Monache Meadow area. (1205)

RESPONSE: The Yost and Glass Creek drainages and Monache Meadows are within Management Prescription #17. Existing roads will remain; no new roads will be constructed.

COMMENT: The road to Summit Meadows in the South Sierra Wilderness should be plowed and revegetated. There are no reasons for any exceptions. (382)

RESPONSE: Roads within the South Sierra Wilderness were closed when the wilderness was created, September 28, 1987. It is the objective of the Inyo National Forest to reclaim the road to Summit Meadows.

FACILITIES

COMMENT: We use the McCleod Camp road to access the upper reaches of Cottonwood Creek and therefore oppose closure of that road. (989)

RESPONSE: These segments have been reworded to indicate that the road to McCleod Camp will remain open.

COMMENT: Improve the Sherwin Creek Road to provide a paved scenic loop from Mammoth Lakes back to U.S. 395. (1359)

RESPONSE: There are currently no plans to pave the Sherwin Creek Road. The road is a good aggregate surfaced road and will be maintained to a standard generally driveable by most vehicles.

COMMENT: Management Area #12 - Benton/Casa Diablo. Close the Watterson Troughs, Clover Patch and Deer Springs roads and the roads between the Watterson Canyon Road and the Owens Gorge to all vehicular traffic and establish native plant species in disturbed areas. (140)

RESPONSE: These roads are not scheduled for closure as there are users who have a legal right to be in the areas served by these roads. Native vegetation will be used to complete rehabilitation on disturbed lands when they are reclaimed.

COMMENT: Management Area #13 - White Mountains. We recommend closing the main access road through the Bristlecone Pine Forest at the Schulman Grove Recreation Area and obliterating its entire length to the White Mountain Research Laboratory. We also recommend the following roads for closure and rehabilitation: Tres Plumas Flat Road, McCleod Road, Sage Hen Peak Road, Wyman Creek Road and Birch Creek Road. These closures are essential for the preservation and re-creation of the White Mountain ecosystem. No new trails should be built and existing trails should not be maintained. (140)

RESPONSE: Most of the White Mountain Management Area will either be included as proposed wilderness, designated as Research Natural Areas, included in the Bristlecone Pine Forest, or included within Prescription #17. Existing roads will generally remain open for use; however, no new roads will be constructed. Few, if any, trails will be constructed within this Management Area. Existing special uses, such as the research facilities at Crooked Creek and Barcroft will remain.

COMMENT: We strongly oppose the building of any new roads and support relocating roads out of fragile areas. The north fork of Cottonwood Creek (White Mountains) and Sidehill Springs Roads should be closed to protect the special values of these areas. No additional roads should be built in the Monache and Bakeoven Meadows areas. (1923)

RESPONSE: We are planning to construct a limited number of new roads. We rely on the Forest-wide Standards and Guidelines and Best Management

Practices to limit possible construction in fragile areas. Large geographical areas are included in Management Prescriptions which limit or prohibit new road construction altogether.

GEOLOGY

COMMENT: II-26, Geology. Do you mean 1200 acre-feet over the next 25 years or 1200 acre-feet per year? (1634)

RESPONSE: The 1,200 acre-feet figure is per year.

COMMENT: Despite any recent activity in the Mammoth area, it is still an active seismic zone. Earthquakes of magnitude 6 or higher are possible any time and probable. The real possibility of a major earthquake and/or volcanic eruption must be considered in any future development of recreational facilities in the Mammoth Mountain region. (1263) (411, 481, 2178)

RESPONSE: We agree. The discussion of the geology resource in the EIS and the statement on geology in the Forest-wide Standards and Guidelines address the concern both from the standpoint of risk to Forest facilities and to Forest users from seismic, volcanic, and landslide processes. The effects of these hazards would be addressed during the environmental analyses of specific projects.

COMMENT: A guideline should emphasize interpretation of geologic phenomena in this area. (1099)

RESPONSE: We have included an additional Standard and Guideline emphasizing the interpretation of local geologic features.

COMMENT: The geological formations in the area of the Inyo Craters and Glass Mountain are beautiful in their solitude. They are so very special because they provide easy access to examples of volcanic action which enables the public to see how our continent was formed. How would they be protected? (95)

RESPONSE: Currently there is no specific form of protection afforded to the recent volcanic features located between Mammoth and June Mountains. Examples include Wilson Butte, Obsidian Dome, Obsidian Flow, Deer Mountain and the Inyo Craters. Some of these features have been identified as candidates for designations as geologic Special Interest Areas. This designation would provide protection from future disturbance.

COMMENT: Management Area #9 - Mammoth. Add a geology directive: "Identify and protect for study special geologic areas." (1988) (1433, 2170)

HERBICIDES

RESPONSE: The Forest-wide Standards and Guidelines direct the Forest to evaluate candidates for classification as Special Interest Areas on a case-by-case basis and to nominate them by 1990. Outstanding geologic features are identified as possible candidates for this classification. No other areas within Management Area #9 were identified as having Special Interest Area qualities.

COMMENT: Please add a Forest-wide Standard and Guideline for geology that reads: "Conduct avalanche hazard mapping in conjunction with Caltrans and Mono County, and assess mitigation feasibility for endangered roads and built areas." (1638)

RESPONSE: We have added a Forest-wide Standard and Guideline for geology with wording similar to your suggestion.

HERBICIDES

COMMENT: The report mentioned that aerial application of herbicides in silviculture is unlikely to occur; however, I wish to emphasize that I think ground level application should always be improved. (783)

RESPONSE: With Integrated Pest Management, the alternative used will be based on the desired results and impacts. No use of herbicides is planned on the Inyo Forest during this planning period.

COMMENT: I oppose the use of toxic herbicides on the Inyo and all other National Forests. (96) (140, 151, 278, 1549, 1632, 1775)

RESPONSE: No use of herbicides is planned on the Inyo during this planning period.

COMMENT: Oppose the use of herbicides especially if the cut requires herbicides to provide a certain level of sustainable yield. The Inyo should develop a Plan that does not depend upon herbicides. (1108)

RESPONSE: The Inyo Plan does not depend upon herbicides for timber management.

COMMENT: The Inyo National Forest predicates its timber yield and yield production costs on the selection of the Preferred Alternative of the 1983 Vegetation Management for Reforestation DEIS, Page 2-39. The types of herbicides proposed for use on the Inyo National Forest and the number of acres on which those herbicides will be used annually should be discussed in the FEIS. (2213)

RESPONSE: Site-specific treatments are not within the purview of the Forest Plan. Those will be decided by environmental analyses for each proposal. The Inyo does not plan to use herbicides for timber management during the planning period.

LANDS

COMMENT: In the Standards and Guidelines for special uses, please insert in #1: "...with established Forest and community goals." In #2.C., please revise: "Private uses that will meet community needs identified in local plans." For #3, please add: "D. Private (exclusive) uses." (1638)

RESPONSE: We agree with the need to coordinate closely with local agencies and, when appropriate, support local community goals and objectives. However, we believe that it is not in the Forest Service interest to include the additions which you have suggested. We retain the right to disagree with local plans should those plans be in conflict with Forest Service Goals and Objectives.

COMMENT: In general, we do not support the outright acquisition of additional lands for Forest Service programs. Where land adjustments are needed in order to improve administrative efficiency, we urge you to exhaust all exchange efforts as a first priority. (1432) (27, 139, 281, 319, 944, 1249, 1261, 1269, 1532, 1776, 2152, 2183)

RESPONSE: The Forest land adjustment program is designed to acquire high priority parcels of land. The land might be high priority because of its wildlife habitat, for its recreational quality, or because its current use somehow detracts from uses or activities on adjacent National Forest land. Land acquisition often results in minor boundary adjustments which improves management in adjacent areas. Specific recommendations for land acquisition are maintained in a Forest land acquisition plan. Except under unusual circumstances, most acquisitions are made by trading other National Forest land for the desired parcels. Since the private landowners must want to trade, the Forest must wait until the private party is interested in exchanging, or until a second private party who wants a specific parcel of National Forest land purchases the private parcel and offers it for exchange. In either case, the acquisition program on the Forest is a long-term program whose goals may not be attained for years.

COMMENT: Some of the permittees on the Forest also function as the primary employers for local communities. The lack of affordable private land near the employment site has created a jobs/housing imbalance and resulted in substantial commutes for much of the local work force. Local jurisdictions have been unable to accommodate the fluctuating housing demand of seasonal employees and housing overcrowding and overpayment have resulted. The following indicator should consequently be included: "How can the Forest assist in meeting the local housing demand generated from activities on the Forest?" (1638)

LANDS

RESPONSE: We agree that the current land ownership patterns and the heavy economic reliance on seasonal recreationists and part time employees has resulted in a real housing problem. However, we feel that our current direction is appropriate in this case and will not add your suggested indicator. Most, if not all, of the increased private activity of permittees on National Forest land has been at the encouragement of the local communities and the permittees. For this reason, we feel that is is largely the responsibility of the communities and the permittees to provide seasonal housing from the private land base. We feel that private land, identified through community planning processes and developed by private parties, is the proper place for employee housing. The Forest will continue to consider exchanging National Forest System land into the private land base. The indicator which reads "Should National Forest Lands adjacent to growing communities be available (through exchange) for private development programs?" and the Forest Standard and Guideline for lands which in part reads "Apply the following priorities when disposing of Federal land: A) Tracts inside or adjacent to communities when such tracts would be used for public purposes, such as affordable housing" indicate our future commitment.

COMMENT: The Plan fails to meet 36 CFR 219.20 (A) which requires that "Lands in less than satisfactory condition shall be identified and appropriate action planned for their restoration." The Plan also fails to meet 36 CFR 219.20 (B) which requires "...direction for rehabilitation of lands in unsatisfactory condition." (2170) (1617)

RESPONSE: The first paragraph under 36 CFR 219.20 states that "In Forest planning, the suitability and potential capability of National Forest System lands for producing forage for grazing animals and for providing habitat for Management Indicator Species shall be determined as provided in paragraphs (A) and (B) which you reference. Lands so identified shall be managed in accordance with direction established in Forest Plans.". The Standards and Guidelines for range resources in the Plan provides this direction. The identification of specific parcels of land are outside the scope of the Forest Plan but would be identified as part of individual grazing allotment plans.

COMMENT: Please modify the DEIS (II-59) to include: "Lands for summer recreation development in Lee Vining and Lundy Canyons will not be acquired until an analysis of the human carrying capacity of these areas has been done." (2170)

RESPONSE: An analysis of human carrying capacity is one portion of a composite plan which is completed before any development is started in an area. However, adoption of your suggestion would reverse our current process. We have no way of knowing when, if ever, these private lands would become part of the National Forest System. Generally we will not complete a composite plan on land unless it is part of the National Forest System. Even if our goal did not include some form of development, the Forest Service would still be interested in acquiring the private lands within Lee Vining and Lundy Canyons because of other resource values.

COMMENT: Management Area #9. Assuming that the Forest map which indicates ownership is correct, we question the statement that this Management Area is composed mostly of private land. Actually, most of this area is National Forest System land or Los Angeles Department of Water and Power land. (2190) (1433)

RESPONSE: Land ownership within Management Area #9 is much more of a composite than the opening sentence under the description would indicate. The wording has been changed.

COMMENT: Because your Plan recognizes the value of day-use activities and open space adjacent to the community, we should not give up more Forest Service land for Mammoth development. No more land exchanges. Nordic skiing and private equestrian use must be considered for this open space. (1645) (1260, 1261)

RESPONSE: In communities where privately owned land is scarce, the Forest Service has often responded to requests for land exchanges by allowing federal land to move into private, county or city ownership. These requests generally originate from the local government organization or from private individuals who have plans for additional development within the community. In payment, the Forest Service could receive a parcel of land of equal value or land plus a sum of cash to make up the differences in value. Through this process, the Forest Service acquires parcels of land it considers valuable for a variety of resource reasons. This policy will continue on a site-by-site basis.

COMMENT: The Town of Mammoth Lakes would like to see the donation, exchange or acquisition by the Town of the area of land between the community center and Minaret Road (State Route 203). The area is north of Forest Trail and south and west of Minaret Road. The Town would like to see a possible donation, land exchange or acquisition by the Town of the area north of the fire station, approximately 35 acres known as the compound.

The Town would also like to see the donation, acquisition, special use permit or land exchange of the area east of Shady Rest Park, north of State Route 203, or south of 203, east of Meridian or the area east of the south gateway for a possible golf course. The area would cover approximately 170 acres. The Plan should consider the donation, land exchange or acquisition by the Town of the area known as the South Gateway area. This area could be utilized for a combination park and civic center area, a swimming pool or other uses needed by the Town. This area should be connected to the Mammoth Creek Park and extend from State Route 203 to the Mammoth Creek Road, covering the area between the Town and U.S. 395.

The Town of Mammoth Lakes supports all the policies of Management Area #9 except Number 4. This should be modified to permit expansion of Shady Rest Park to the east. (1891)

LANDS

RESPONSE: The consideration of specific parcels of land for acquisition by the Town of Mammoth Lakes is beyond the scope of the Forest Plan. Changes in the ownership of specific parcels of National Forest System lands would be initiated and would occur subsequent to appropriate review on a case-by-case basis.

COMMENT: When establishing priorities for land disposal to private ownership, the Forest should give preference to lands identified in local general plans for community expansion or identified as valuable open space, or to areas identified as marginally developable due to natural hazards such as avalanche. (1638)

RESPONSE: The Forest land acquisition program is primarily directed at acquiring land that has a high priority for achieving Forest goals and objectives. Some lands having a high priority from a local community standpoint may also have a high priority from a Forest Service standpoint. We are committed to working with the local communities wherever possible to accomplish shared objectives. However, we will not include the wording which you suggest as it limits our flexibility to achieve goals which may conflict with those of local communities.

COMMENT: Your idea of withdrawing lands is just in reverse of what it should be. You should be developing lands and supporting the people. Our population is growing, especially when we are legalizing 10.7 million from other countries yearly. These people cannot be expected to live like cattle in your big cities, especially during a cold nuclear war. (43)

RESPONSE: The Inyo Forest Plan is one of many plans which are currently being developed for the entire National Forest System. Each plan is unique based on the resources available on a specific National Forest. As an individual Forest, we recognize an obligation to provide various commodities such as timber, minerals, developed recreation, and range to the local communities. This obligation is being fulfilled to the extent we feel is reasonable. On a national basis, we have an obligation to provide high quality wilderness areas which are not available in other areas. The use of these areas increases each year, and it is obvious to us that this use will continue to increase in the future. While wilderness areas are not commodities in the same sense that lumber or cattle are commodities, there is a demand for these areas and, in creating them, we are supporting people.

COMMENT: I request that permittees, including summer home permittees, be kept at present levels. (73)

RESPONSE: Land is made available under special use permit if the proposed use is compatible with the established multiple use objectives of the area affected and if no suitable private land is reasonably available for the use. Generally, public uses have priority over semi-public uses which in turn have priority over uses which benefit the individual. There are no numerical quotas on special use permits nor upper limits on the number which can be in effect. We believe that the overall number of special use permits

will gradually increase as new activities occur on National Forest land and as Forest-operated facilities are turned over to private operation.

Corridors

COMMENT: Management Area #16. The lands element should read: "Designate a one mile wide utility corridor centered on the Pacific DC intertie."
Management Area #13. The following statement should be added as a lands element: "Designate a one mile wide utility corridor in the vicinity of State Route 168."

Plan III-17, fourth paragraph, third sentence should read: "The route paralleling the major interstate right-of-way for the Pacific DC Intertie will be designated a utility corridor as will a route between Big Pine and Deep Springs in the vicinity of State Route 168. The need for other routes will be considered." (1093)

RESPONSE: The Forest has agreed to participate in the completion of an analysis of possible transmission line corridors across National Forest land on the Inyo. Wording will be added to the Plan to provide for the adoption of the analysis and of any recommendations when they are available. The size and location of any potential corridors will be factors considered as part of the analysis. It is the intent of the Forest to minimize the number and size of potential corridors to the minimum necessary and to locate potential corridors where the environmental impacts are the least. For these reasons we feel that it is inappropriate to add wording to Management Area Direction which establishes corridors before the completion of the analysis.

COMMENT: Management Prescription #4. A lands element should be added to read: "Permit new utility rights-of-way which are compatible with the Mule Deer Habitat Emphasis. Construction of new facilities would need to be accompanied by appropriate habitat preservation measures such as minimizing new road development." For Management Area #12, a lands element should be added that reads: "Consider the use of alternate utility corridors if they cannot be accommodated on existing corridors." Modify the visual element to read: "Utilize existing power line routes as much as possible for the location of additional overhead lines. Minimize the creation of new routes through the area."

Management Prescription #11. A lands element should be added to read: "Permit new utility rights-of-way which are compatible with the Range Emphasis. New facilities would need to be accompanied by appropriate habitat preservation measures such as minimizing new development."

Management Prescription #17. A lands element should be added to read: "Permit new utility rights-of-way which maintain the unroaded characteristics of the land and which do not conflict with recreation and wildlife objectives. (1093)

LANDS

RESPONSE: We believe that the wording which you have suggested for inclusion as management direction under Management Prescriptions #4, #11 and #17 and Management Area #12 are either contrary to the Forest's intent to minimize the proliferation of new rights-of-way and utility corridors or are already stated in the Standards and Guidelines. The intent to minimize rights-of-way and utility corridors is clearly stated in the Forest Standards and Guidelines and participation in the utility corridor analysis with the BLM centers around this need. In addition, we feel that the environmental analysis of site specific rights-of-way and utility corridor proposals will identify where unacceptable conflicts with other resources exist, if they exist. We do not believe that it is appropriate or necessary to add the wording which you have suggested.

COMMENT: Throughout the documents the high voltage direct current (HVDC) intertie could be referred to as the Pacific DC Intertie instead of the 750-HVDC Oregon-Sylmar transmission intertie. This name would be more appropriate, eliminating some confusion about the operating voltages of the transmission line which have been changed in the last few years. (1093)

RESPONSE: We agree and have made the changes.

COMMENT: Management Prescription #5. This prescription allows energy exploration or development, but does not specifically permit a utility right-of-way. If energy is developed, a means of conveying that energy is required. The lands element should be modified.

Another major concern is the management direction which would appear to require this company to relocate its existing 115 KV transmission lines in Management Areas #4, #5, #7, #11, and #14 at such time as it is necessary to upgrade the lines. This line provides power to the Mammoth and June Lake communities. However, if the various proposed alpine and nordic ski areas are developed with a corresponding increase in residential and commercial development, it may be necessary to upgrade the existing transmission line to meet the higher energy demand. The cost of upgrading the existing line would be amortized by sale of the additional power transmitted; however, the substantial costs associated with relocation would be borne by all of our customers for the relatively minor benefit of moving the impact of the transmission line from one location to another. (1093)

RESPONSE: Management Prescription #5 has been rewritten to eliminate energy production as one of those activities which will be considered appropriate for Research Natural Areas. The rewrite precludes the necessity of adding wording providing for utility rights-of-way.

The long-term Forest goal is to reduce the visual impacts of manmade development wherever possible. Wording in the management direction for Management Areas #4, #5, #7, #11, and #14 is specifically directed at reducing the visual impact of power lines. In many places on the Forest these are the only manmade intrusion and eliminating them from the view of the Forest user results in major visual improvements. We understand that cost and the existence of an acceptable alternate alignment are important

considerations. We do feel, however, that it is reasonable to require those off-Forest people who benefit (utility customers and company) from a Forest use to pay for minimizing impacts to on-Forest people who use the Forest (recreationists and the public in transit) wherever it's reasonably possible.

COMMENT: The Inyo National Forest includes lands in an area vital to regional transmission of electric energy resources. The 750 KV DC Celilo-Sylmar line, operated by LADWP, is already a fixture in this area. The potential for additional use of this corridor is high; Southern California continues to grow and increase its demand for energy, and the Pacific Northwest and Intermountain states are poised to provide this energy. The Inyo/Bishop area is in a key position, due to its geographic and topographic situation, to accommodate these transmission needs. In addition to the 750 KV DC line corridor, other complementary corridors have been identified by industry in this area. The Plan is lacking and the DEIS is incomplete because this is not addressed. It is our understanding that the Bakersfield District, Bureau of Land Management (BLM), is undertaking a study of corridor options in the Inyo/Bishop area with input and cooperation from the Inyo National Forest and Nevada BLM. Sierra Pacific strongly recommends that the EIS and Plan be scheduled to incorporate the results of the BLM/Inyo National Forest study. We believe that to finalize the Plan without full consideration of this important social and economic issue renders it incomplete and contestable. (28) (150, 1093, 1261, 1532, 1608, 2192)

RESPONSE: The Forest has agreed to participate in the completion of an analysis of possible transmission line corridors through the area.

MINERALS

COMMENT: We support withdrawal of all National Forest System lands from appropriation under the mining laws. (298) (140, 151, 166, 171, 438, 934, 970, 2101)

RESPONSE: Withdrawal of the Inyo National Forest from mineral entry is not a management option available to the Forest. Only Congress, through legislation, can withdraw federally administered land from mineral entry. The Forest can, and has, recommended withdrawal of National Forest System land for specific purposes such as wilderness, administrative sites, and scenic areas. Through the mining laws, Congress has given the general public the right to enter onto public land. Given that Congress and the Administration have on numerous occasions declared their intention to encourage and foster mineral production from public lands, we do not feel that such a recommendation is appropriate in managing the Inyo National Forest.

COMMENT: Please do not permit mining. Do not permit geothermal development. (13, 495) (8, 9, 10, 11, 16, 21, 22, 44, 78, 140, 298, 450, 481, 1399, 1408, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446,

1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1586, 1592, 1774, 1781, 1820, 1858, 1947, 2017, 2026, 2120, 2136, 2137, 2197)

RESPONSE: The Forest Service is not in a position to unilaterally prevent mining activities on National Forest System lands. The mining laws give the general public the right to enter onto public land and Congress and the Administration have on numerous occasions declared their intention to encourage and foster mineral production from public lands. The Geothermal Steam Act of 1970 made geothermal resources available for development via a system of leasing. Geothermal resources on the Inyo Forest have been leased and the federal government is a partner in contract with several potential developers. Preventing these lessees from exploring for and developing geothermal resources would be a breach of contract.

COMMENT: Mining operations on Forest lands should be allowed to continue; however, new operations should be closely and cooperatively reviewed for their legitimacy. Speaking as an exploration geologist myself, I know personally that many mining operations are phony to begin with. Road construction, drilling sites, millsite preparation, and even phony operations in entirety have been known to happen many times. A legitimate exploration company should be allowed to proceed in steps after careful review and monitoring for good potential that warrants further work and does not exceedingly destroy visual quality. A qualified geologist(s) should be in the employ of the Forest Service. (65)

RESPONSE: We would prefer to deal with "legitimate" exploration and development companies. However, there is nothing in the mining laws which allows us to evaluate a mining company on its legitimacy or to require that any professional people be employed by the company. We evaluate the activities which the company plans to pursue; we work with the company to blend those activities with existing uses and resources. As long as a mining company is able to achieve our requirements, we have no reason to suspect its motives.

COMMENT: No new roads for mines or mine exploration. (467) (3, 329, 376, 377, 466, 923, 936, 953, 956, 957, 1188, 1232, 1282, 1374, 1430, 1504, 1659, 1660, 1868, 1930, 2115, 2161)

RESPONSE: THe U.S. mining laws give the owners of mining claims a nonexclusive right of access across the public lands to their claims. This right is only for the purpose of maintaining the claims and as a means of removing the minerals. Such access must be in accordance with the rules and regulations of the surface management agency. For the Forest Service, these regulations are located in 36 CFR 228. These regulations provide the authority to approve the route and method of access to minimize surface disturbance.

COMMENT: I am concerned with Management Prescription #18. From my reading of Prescription #17, it would seem that this would be a better solution to

allow legitimate access to mineral claims and allow for current recreation use. I think you should eliminate Prescription #18. (1205)

RESPONSE: We have chosen to retain Prescription #18. Mining access is equally provided for under both prescriptions; however, recreation opportunities provided by the two prescriptions are different. We feel that both prescriptions are needed to provide a full range of recreation opportunities.

COMMENT: Any new mining service should not cause the degradation of water or riparian zones. The Forest Service should more clearly spell out means of protecting these areas including the width of the zones to be specially managed to preserve riparian values. (1332) (914, 978, 2213)

RESPONSE: The conflicts between mining and water quality and riparian protection are difficult to resolve. We agree that water quality and riparian resources have very high priority. The Forest-wide Standards and Guidelines in these two areas have been written to clearly state our intent to improve the condition of these resources. We believe that specific restrictions on activities around streams and riparian areas should come from the evaluation of site specific proposals, not from the Forest Plan.

COMMENT: The second paragraph under Minerals: Leasable (Geothermal Energy), Plan III-19, should read: "BLM issues all authorizations for post-lease actions with input and concurrence from the Forest Service". Also, the supply and demand paragraph needs updating on resource verification. (176) (2175)

RESPONSE: We have made the appropriate changes.

COMMENT: Modify the Leasable Minerals section on Plan IV-24-26 to clarify the fact that any work must be done in conjunction with the Bureau of Land Management. (176)

RESPONSE: We have made the appropriate changes.

COMMENT: Regarding the Forest-wide Standards and Guidelines and the Affected Environment description for Leasable Minerals and Geothermal Energy, these sections should include the need to analyze the cumulative impacts of energy development, particularly geothermal projects, on fish, wildlife, and recreation resources. (1433) (1648, 1843, 2170)

RESPONSE: A cumulative impacts analysis is required by the National Environmental Policy Act (NEPA) of 1967. NEPA regulations are located in 40 CFR 1500 and apply to all federal agencies. These regulations are incorporated by reference in the Forest EIS and Plan. It is understood that environmental documents which analyze the impacts of specific projects will comply with the regulations in 40 CFR 1500. We believe that the best time to

do a cumulative analysis for a proposed project is in a project specific environmental document.

COMMENT: Mining is the most important of all the activities in the Forest. It is non-renewable and any land classified as mineralized should be drilled with a diamond core drill before they are put into parks or wilderness. Not just one hole, but a number of holes, drilled like a mining company does, before they dig. (465) (486, 1432, 2048, 2179)

RESPONSE: We make long range land use decisions based on the most complete, detailed information possible. Often the funds or time is not available to do that, and we must make land use decisions based on the best available information. We rely heavily on the expertise of our employees, of other government agencies, and of the public to assist us in obtaining the best available information.

COMMENT: The following are specific comments having to do with the Plan. Minerals Management (IV-25): 2. What activities does the Forest have in mind? Seems vague in terms of mining. Either you can mine or not mine. You cannot limit a mining activity in a valid existing claim. This needs clarification.

Minerals Management, Leasable Minerals (IV-26): 3. It is unclear what is meant by this paragraph. Are these pre-lease EAs or are these on lands that will be put up for lease? Are these the same EAs that are not withdrawn? Locatable Minerals (IV-26): Is this necessary for a guideline? I thought that land is available. This would indicate that some lands are not available that are not withdrawn. Saleable Minerals (IV-26): 2. What is defined as unacceptable damage? (29)

RESPONSE: Public Law 167, enacted in August of 1955, provides the authority for the surface management agency to approve proposed operations, require modification of proposed operations, or prohibit an aspect of operations on mining claims for the protection of non-mineral, surface resources. Specific direction relating to the Forest Service is located in 36 CFR 228.

The Forest-wide Standards and Guidelines for leasable minerals have been rewritten to separate the pre- and post-lease environmental document process and responsibilities.

The Forest-wide Standards and Guidelines for locatable minerals have been to indicate that all land not specifically withdrawn from mineral entry will be administered subject to existing mining.

Regarding the Forest-wide Standards and Guidelines for saleable minerals, "unacceptable" is defined by the decision maker subsequent to an environmental analysis of the proposed sale.

COMMENT: What does "encourage leasing" mean (DEIS, II-42)? What actions are contemplated under this term? Does this mean that minerals, as a resource,

has equal priority with all other resources on the Forest? How are you going to manage the mineral resource if the mineral leasing or mining proposal conflicts with some other Forest resource?

In regard to the Forest-wide Standards and Guidelines for common variety minerals (DEIS II-43), how do you define "unacceptable damage"? This is really undefined and will be a trouble spot for managers for years to come. What is unacceptable to one person may not be unacceptable to someone else. This Standard and Guideline should be changed to express what you really intend to say. Any disposal of a mineral material is going to cause some disturbance to the surface resource, but it may not be significant or unacceptable. (29)

RESPONSE: The Standards and Guidelines for minerals have been reworded to more accurately represent the Forest's responsibility toward leasing of energy resources. In the overall management program on the National Forest System lands, mineral resources are considered equally with other resources. Conflicts with other resource management goals and uses are identified in the analyses of project specific impacts. Resource trade-off decisions are made subsequent to those analyses.

In the Standards and Guidelines for saleable minerals, we agree that the word "unacceptable" is ambiguous. In this context, unacceptable is defined by the decision maker subsequent to an environmental analysis of the proposed sale. The disposal of mineral materials will result in surface disturbance and whether or not the impacts of the disposal are unacceptable will indeed by decided by different people who could have different points of view.

COMMENT: Description of Management Prescription #12 - Concentrated Recreation Area (DEIS II-52). If the area is not withdrawn from mineral entry, what are you going to do to minimize energy development? This conflicts with your Standard and Guideline for minerals. Are you going to withdraw all lands from mineral entry that you do not want conflicts to arise? The same comment applies to the description of Management Prescription #16 - Nordic Ski Areas. For Management Prescription #17 - Limited Access (DEIS, II-53), what is the reason to close mining roads to the public after the mining operation has been completed? If no safety problem exists, why not leave the road open to ORV use as long as the use is confined to the road? (29)

RESPONSE: The discussions of concentrated recreation areas and nordic ski areas in Management Prescriptions #12 and #14 refer to minimizing the conflicts with energy development. There is no implication that these areas are targeted for withdrawal or that energy development will be minimized. Where conflicts between the different land uses arise, the Forest will work with the different land users to eliminate the conflict or lessen its impact.

Prescription #17 is designed to maintain a specific recreational experience. We feel that increasing the number of roads in these areas, regardless of the reason for which they were built, will gradually diminish that experience.

MINERALS

COMMENT: The background section for minerals (Pg. III-47) needs further discussion on history. One condensed sentence does not truly reflect the actual past. Since past mining activity is important and long standing, a detailed discussion is necessary. A figure including mining districts, major past producers, and commodity identifiers could be included. In order to suggest length of the expanded section, a comparison to the recreation section indicates 17 pages as an approximate mark. (25)

RESPONSE: While we agree that a detailed discussion of mining history on the Forest would be interesting, we disagree that it is necessary in describing the current environment and resource management characteristics on the Inyo National Forest. We feel that the existing discussion is appropriate given the current state on mining activities on the Forest. In addition, we disagree that the length of the minerals discussion should be determined by the length of other resource discussions.

COMMENT: There should be some discussion on the largest producing mining operations (DEIS III-47). Further, there is very limited discussion on the mineral potential on the Forest. What is the mineral environment that would be affected by the proposed management activities? Under the management concerns for locatable minerals, there is no concern for the impact of other resources on the mineral resource. Washington Office policy is that minerals now have an equal standing for consideration as all the other resources. Therefore, management should be concerned just as much about how mineral exploration will be affected. This should be discussed.

How about a discussion on wind (IV-30)? The assumptions listed do not speak to the consequences of wind or solar farms. This entire section is very weak and does not adequately address the effect of management activities on energy development. It is difficult to refer back to all management direction to determine for myself the consequences of management activities on energy development.

In this section on minerals (IV-59), a discussion on access to mining operations is needed which includes limitations, existing problem areas, and opportunities for new road construction. I must compliment the authors, however, in that you did an excellent job on land availability for mineral entry.

On page IV-62, the total amount of land available for mineral entry is lower under the Preferred Alternative as compared to the CUR Alternative. Yet, the direction you have given in the mineral field is to encourage mineral development. Now that wilderness has been established, this should not be a factor in new land availability. How about recommending that some lands currently withdrawn be reopened except for wilderness? (29)

RESPONSE: We do not believe that a more detailed discussion of ongoing mining activities will significantly improve the description of the current environment and current management characteristics of the Forest. The fact that these mines exist and that they are in production is an indication of the current mineral environment. In most cases we do not have production information. A detailed description of the site specific facilities, mining

activity, and geologic conditions is outside the scope of the Plan. The information provided is a synopsis of U.S. Geological Survey and Forest Service information. The maps and reports which portray the site specific information are available for review at the appropriate Forest Service office. We agree with your concern about management concerns for locatable minerals and have included wording which indicates the management concern in this area.

For your concern regarding wind energy, please refer to the comments and resposnes for energy in this Appendix. We agree with your comment regarding mining access and have included wording addressing the question of access. We do not feel that any all inclusive statement or restrictions can be listed in the plan as restrictions or surface use requirements would be based on site specific conditions.

The lower numbers of acres available for mineral exploration and development reflect the increased acres of wilderness withdrawn from mineral entry under the PRF as compared to the CUR. A review of land withdrawn from mineral entry in support of Forest Service programs (not including wilderness) is under way. The decision to continue or remove existing withdrawals will be made on a case-by-case basis.

COMMENT: The mineralization of the White Mountains and Inyo Mountains is misrepresented in light of their present and reasonably expected future development. Economic constraints make future mining a slight possibility at best. (1565)

RESPONSE: Information on the existing mineral condition of the White Mountains and Inyo Mountains was compiled by the United States Geological Survey and published in 1983 in several separate reports on mineral resource potential. The summary of mineral potential acreages found in the EIS is, in part, based on the information in the USGS reports. We feel that the USGS reports accurately represent the existing mineral condition within the White and Inyo Mountains. While changing economic conditions make any given mineral deposit more or less developable, they do not change the natural mineral character of the deposit. Future economic conditions may make future mining a slight possibility or they may make it a highly profitable venture.

COMMENT: Mining should be kept at a level which does not damage the environment. (1592) (950, 1885)

RESPONSE: All mining activity results in some change in the environment. These changes are inherent to an industry which requires roads for access and various amounts of surface disturbance for operations. The Forest Service has been given the authority by Congress to work with the claimant/operator to accomplish mining operations and minimize surface impacts to the extent possible.

MINERALS

COMMENT: For the Forest Goal for minerals on Plan IV-5, change "...Forest resources are minimized." to "...Forest Service resources may be minimized." (1845)

RESPONSE: We disagree with the proposed wording change. The Forest will always work with the claimant/operator to minimize the adverse affects of mining activities even when other resource values are traded off in favor of mineral development. We will work toward achieving whatever minimum is possible given the site specific circumstances.

COMMENT: We are opposed to the closing and/or restricting of any mining. (1157) (1619, 1888, 2024)

RESPONSE: The Forest Service has been given the authority by Congress to work with the claimant/operator to accomplish mining operations and minimize impacts to surface resources to the extent possible. This authority has been given to the Forest Service because of its liability under other federal legislation for cultural and historical resources, threatened and endangered species, water and air quality, and its management responsibilities for other resources such as visual, wildlife, recreation, timber and vegetation. It's not uncommon for proposed mining activities to be in some form of conflict with other resource management activities. When these conflicts arise, it is often necessary to either forego other resource uses or alter proposed mining activities.

COMMENT: The average annual outputs by decade figures such as in Figure II-4 for each alternative with respect to minerals is not appropriate. Minerals output should be related to minerals production quantified in tons, ounces, or short ton units. Operating plans are good indicators of activity level, but do not delineate the stages of development on these active claims. We recommend you break this group of operating plans into appropriate stages of development. (25)

RESPONSE: We agree that actual production in ounces, pounds, or tons would be a more appropriate form of measuring minerals outputs. However, we have little production information to work with. Some production data is proprietary and many small miners do not report the output of their operations. The one measure of mineral activity that we do have is numbers of operating plans submitted for review. This information is in itself suspect as some miners choose not to submit plans. As you have suggested the number of plans implies little about what type of activity proposed or whether it is a small one-man operation or an open pit mine hundreds of acres in size. Plans are being made to keep track of the type of information you have suggested for use during the next Plan revision period. Development activity would be gained from plans of operation and on-site visits.

COMMENT: Mineral potential is unknown in designated wilderness areas (DEIS, Pg. II-176, Figure II-32). An attempt should be made to discuss minerals within these areas. Using available information, an idea of mineral worth could still be presented. USBM mineral resource studies of selected wilderness areas (Hoover, John Muir, Golden Trout, High Sierra) should be

available at your office. We could furnish you with minerals industry location system (MILS) printouts and production information, if needed, to properly complete this discussion. (25)

RESPONSE: For the purposes of the EIS and Plan, a discussion of mineral potential within existing wilderness areas is not essential. The Wilderness Act of September 1984 states: "Subject to valid existing rights then existing, effective January 1, 1984, the minerals in lands designated by this act as wilderness are withdrawn from all forms of appropriation under the mining laws and from disposition under all laws pertaining to mineral leasing and all amendments thereto". Subsequent wilderness acts have included wording which has withdrawn the land within the designated wilderness from mineral entry subject to valid existing rights. The mineral resources within existing wilderness areas are not subject to management activities and would not be affected by a management alternative.

COMMENT: We recommend that you combine a minerals potential map with a map indicating land available for mineral location (legal and management constraints), thus directly relating minerals availability to mineral potential. The public and your decision making body will then be better able to analyze the potential impacts on mineral development. The cost of adding an additional map should be small compared with the value the map would have complementing the Plan. (25)

RESPONSE: All land on the Forest not specifically withdrawn is available for mineral entry. Examples of land withdrawn from further mineral entry include all wilderness areas, the Mono Basin National Forest Scenic Area, administrative sites such as ranger station locations and campgrounds, and some rights-of-way and special use sites. Mitigation measures which would be required to lessen the impacts of mining activities on other surface resources would be identified on a site specific basis. This information is not available on a Forest-wide basis and is outside the scope of this planning document.

COMMENT: Your mineral potential rating and availability rating classifications (Figure II-32 on page II-176) are useful; however, we recommend another system. Our office reviews numerous EIS documents and has come across an excellent classification system as shown in Attachment 1. We suggest a modification of this using percentages as opposed to acreages. We feel it is easier to envision the comparison and comprehend the effects each alternative may have on mineral resources. (25)

RESPONSE: We agree that reporting percentages often has advantages over using acreages. Many reports written using data from the Forest Plan report the information in this form. However, there are several reasons why we have chosen to display information in acres: we have been asked to do so by the Regional Forester for Region 5; the use of acres is consistent throughout the document for most resources except where numbers of units (AUMS, PAOTS, SAOTS) or miles are more appropriate; and the reader can calculate percentages knowing acreages if interested.

MINERALS

COMMENT: Management Area #14 - Rock Creek/Pine Creek. The floundering Pine Creek Tungsten Mine should be closed immediately. The 808 acre site should then be developed as a concentrated recreation area. (140)

RESPONSE: The Pine Creek Mill Site, Portal, and much of the original workings are on patented (private) land. Most of the underground workings, while under National Forest System land, are controlled by the patented workings. As long as the Forest Service requirements for the uses of adjacent National Forest System lands are being complied with, the Forest has no reason or authority to force the closure of the mining operation.

COMMENT: The addressing of mineral exploration is not clear. If mule deer habitat has something to do with mineral exploration, then it should be clearly spelled out. Mine exploration should not be diminished simply because deer are in the area. There should be specific guidelines so that minerals can still be extracted without harming the deer. (233)

RESPONSE: The mining laws provide statutory authority for mining activities on National Forest System lands not withdrawn from mineral entry. The mining laws also give the Forest Service the authority to manage mining operations to accommodate, to a reasonable degree, other surface resources. The importance that the Forest Service gives to deer or some other surface resource vary depending on the location and type of the proposed mining activity. Mining activities within lightly used summer range, for example, would cause relatively little concern compared with mining activities proposed for a heavily used migration corridor. Specific operational guidelines which provide direction on how mining would coexist with other resources would be developed on a site specific basis. Mitigation measures are unavailable on a Forest-wide basis and site specific mitigations are outside the scope of the Plan and EIS.

COMMENT: The limited access and other restrictive designations (wilderness, bighorn sheep, RNA) for nearly 80% of the White Mountains will inhibit the exploration for and development of mineral resources in the White Mountains which are described by the Forest Service as the most heavily mineralized mountain range in California (Plan IV-120). (486)

RESPONSE: We believe that describing the White Mountains as the most heavily mineralized mountain range in California is an overstatement of the facts and have reworded that section. You are correct in saying that the designation of wilderness areas and RNAs would restrict mining activities as these areas would be withdrawn from mineral entry. Most of the remaining area in the White Mountains would be covered by Prescription #17. The limitations which apply under this prescription would limit off-road vehicle use to designated routes. Access for mining activities would still be permitted based on a Forest Service evaluation of routes and access methods proposed by the mining proponent. The majority of land identified by the USGS as having any potential for economic mineral production has been left out of any proposed wilderness or research natural area. Access into many of the mineralized areas will be more restricted by topography than land classification.

COMMENT: In the Forest-wide Standards and Guidelines for riparian areas, you do not speak to mining. Does the first Standard and Guideline in this section mean that mining is not allowed? What does "give emphasis" mean? (29)

RESPONSE: Riparian areas and riparian dependent resources are given priority over other resource uses when there are conflicts between uses. This does not mean that mining activities are prohibited in riparian areas. It does mean that the Forest will review proposed activities in these areas more critically, work toward alternative mining methods not involving occupation of riparian areas, or work toward minimizing mining activity in riparian areas where it can't be avoided.

COMMENT: Management Area #18 - Inyo Mountains. The area that is under the designation of proposed wilderness of 53,915 acres seems to contain "highly mineralized and unpatented mining claim activity". It also contains possible water rights for the Gray Eagle and White Eagle TALCM, and due to the legal description, or absence thereof, it is hard to determine the exact location of said water rights. Will the water rights of the Gray Eagle and White Eagle mines be compromised because of the proposed wilderness plan? (201)

RESPONSE: Although there has been some litigation on the subject of water rights within designated wilderness areas, there do not appear to be any all-encompassing federal regulations on this subject. Water rights are still within the jurisdiction of the individual states. If the claimants of these mines have consumptive water rights on file with the state, then the designation of the wilderness area should not have an effect on the execution of those rights.

COMMENT: The current mineral withdrawals should remain in effect. (1632)

RESPONSE: A review is being made of mineral withdrawals made in support of Forest Service programs. This withdrawal review does not include wilderness or other areas where the withdrawal was established by Congress. It does include such locations as campgrounds, Ranger Stations, and other administrative sites as well as potential administrative sites never used for their intended purpose. The continuation of the withdrawal status of these areas will be made on a case by case basis.

COMMENT: I would like to see more of a mining industry on the Sierras. (1258)

RESPONSE: The viability of the mining industry depends on market conditions such as commodity prices, operation costs, and the availability of the raw product. The management of National Forest lands certainly influences the cost and availability of raw materials; however, the Forest should neither promote nor discourage the mining industry as a whole.

MINERALS

COMMENT: For locatable and saleable minerals, wilderness, wildlife, wildlife habitat, riparian and low impact recreational values should be given precedence over mining development in environmentally sensitive and roadless areas, particularly with regard to road construction for new mining development. If mining is unavoidable in such areas, methods of access other than building new roads should be used. (2170) (914, 2007)

RESPONSE: The Forest Service has considerably different authority with regards to the administration of locatable and saleable mineral materials. The disposition of saleable mineral materials lies solely with the Forest Service. The decision to forego the excavation and use or sale of mineral materials can easily be made if other resource impacts warrant the trade-offs. The proposed use must be eliminated or a secondary source of materials must be found, often with its own associated resource impacts. The laws regarding locatable minerals are much more extensive and do not afford a similar latitude for control. The mining laws make government lands available for mineral related activities to varying degrees. With some notable exceptions, Forest resource management must, at a minimum, consider mineral development on an equal footing with other resources. Impacts to cultural resources and threatened and endangered species are managed under their own regulations. The Forest must consider every proposal to develop mineral resources and evaluate the consequences of the proposed development.

COMMENT: The mining claims in Lead Canyon are not clearly depicted or described. Will this in any way affect the current holder? (201)

RESPONSE: If the claims referred to are the Inyo Queen, Inyo Queen 2, Inyo Queen 3 and Inyo Queen 4, they are located within the Further Planning Area #5064 and would be within Prescription Area #2, Proposed Wilderness. If the area were designated a wilderness by Congress and the claimants desired to develop the claims, a validity exam would be requested. Should the claims be determined to be valid, a plan of operations which outlines any proposed development would be required. The Forest would work with the claimant to develop the claims while maintaining, to the extent possible, the wilderness characteristics of the area. Should the claims be determined invalid, the Forest would probably pursue a contest of the claims.

COMMENT: Direction for Management Area #7 is deficient in recognition of geothermal development and subsequent management or direction. Additionally, Management Areas #8 and #9 have existing leases and obvious potential. It would follow that these areas should have direction specific to geothermal resources. Portions of Management Areas #3, 4, & 5 are also within the KGRA, but don't merit specific area direction regarding future lease actions. (487)

RESPONSE: The Forest-wide Standards and Guidelines for leasable minerals have been rewritten to indicate the relation that the Forest Service has with the Bureau of Land Management which has permit authority for post-lease geothermal development on National Forest System lands. The description for Management Area #7 has been rewritten to state that the area contains

geothermal leases. We believe that additional Management Area Direction is unnecessary.

COMMENT: The reports lack a mineral potential map to check with the Preferred Alternative map showing Management Prescriptions. This is important because several Prescriptions are withdrawn from mineral entry, are proposed to be withdrawn from mineral entry or have limited vehicular access, or no new mineral development (1 to 9, 13 to 17). Prescriptions #9 to #13 have no statement about minerals, only #18 seems to be really open for mineral development and the mineral potential here is not shown. The document should discuss the relationship between locatable mineral development and surface management decisions. Management decisions concerning air quality, visual characteristics, recreation, etc. can significantly impact the ability of a claimant to develop his claim. A discussion should be included as to the types of reports/data (i.e. visual, archaeological, endangered species) which may be required for a certain Management Area in regard to mineral development. Claimants would then be aware of the Forest Service's surface concerns within that area.

Data on Page IV-62 are hard to relate in significance to the PRF map and understand if and how mineral development may be impacted. There are no maps showing mining claims or leases, making it impossible to relate mineral interest to mineral potential to PRF areas. Modify the leasable minerals section (IV-25,26) to clarify the fact that any work must be done in conjunction with BLM. (2175) (487)

RESPONSE: There are no resource maps included with the EIS or Plan. These maps are available for inspection at the Supervisor's Office for the Inyo National Forest or at the separate Ranger Districts. We appreciate the difficulty that faces the reader who truly wishes to analyze the effects of the proposed management plan on various resources. However, by not including these maps, we considerably reduce the size and expense of producing the Final EIS and Plan.

We do not believe that there will be any immediate or dramatic effect on mining claimants by implementation of the Forest Plan. The mining laws and regulations which will be followed under the Plan have been in effect for many years. Some changes may occur over time as surface resource emphasis changes and proposed plans of operation are reviewed in light of the new emphasis. The need for site specific environmental analyses, including which resources should be analyzed, are discussed with claimants.

For the purpose of analysis in the Plan, mineral interest is measured by the general location of the claims and appropriate geology and have been translated by the U.S. Geological Survey and our minerals staff into acreages of high, medium, low and no mineral potential. The changes in these acres by alternative (resulting mainly from different acreages of proposed wilderness or other withdrawn land) are displayed without regard to location. For the purpose of identifying the relative amount of land available under one management alternative or another, no additional detail is needed. The fact that under one alternative there are 28,000 acres of high mineral potential

PEST MANAGEMENT

COMMENT: Pest Management, Item 3, IV-26. The problem of the phytotoxicity of boron compounds toward certain other plants has not been carefully addressed. Since borax is water soluble, it will ultimately leach out of the stumps and into the watershed. Careless and indiscriminate application by people in a hurry will compound the problem. The use of boron compounds as fire suppressants was stopped some years ago because of their toxicity towards other plants. (382) (1634)

RESPONSE: Borax registered for use on conifer stumps is essentially the same as borax sold as a common household laundry detergent. It contains 13-15% boron. It is applied in small quantities to individual stump surfaces; there is no aerial drift. Borax that eventually enters the soil is broken down by microorganisms that utilize it as a source of energy and nitrogen.

COMMENT: There is nothing in the Plan about monitoring for exotic (foreign) plants which can intrude into the forest and, if established, have a serious, disruptive impact on native plants. Seeds are brought in on car tires, moved along trails by mud on shoes, etc. Look what has happened to the stand of winterfat in Little Cowhorn Valley because of the introduction of salsola. (382)

RESPONSE: The states and counties monitor noxious weeds. The Forest Service cooperates with other federal, state and local agencies in the control of noxious weeds as appropriate. The Inyo Forest is in the process of producing a sensitive plant management plan which will set guidelines for monitoring and protecting sensitive plants on the Forest.

COMMENT: Commend the Forest Service's past record with regard to the pandora moth and recommend that in the future the same practices are carried out - mainly nothing. It is obvious from the long historic record of the cyclical infestations that this insect does minimal damage. Its primary importance to the forest is probably in terms of nutrient recycling, converting pine needles to fertilizer from the caterpillar grass, and a short-term food supply for birds and other wildlife. (1631)

RESPONSE: Integrated Pest Management requires analysis of all valid alternatives. The preferred method for dealing with insect and disease problems is determined in a site-specific environmental analysis.

COMMENT: In the DEIS (III-54), the Great Basin tent caterpillar is listed as a "pest" defoliator of bitterbrush. Where has this been a problem, and what is the magnitude of the damage? If this is of concern, why is bitterbrush proposed to be removed preparatory to clearcutting, when the continuation of the much less damaging selective timbering method would preserve the bitterbrush? The amount of bitterbrush eaten by caterpillars cannot begin to compare with the effects of livestock, and these are not even listed as "pests". (1631)

RESPONSE: The western tent caterpillar has periodically defoliated bitterbrush stands in several areas on the Inyo Forest, most recently on the Mammoth and Mono Lake Districts. It is considered a potential pest because of the importance of bitterbrush as a browse species for both domestic and wild animals. Tent caterpillar impacts on bitterbrush are not well understood. The Inyo, in cooperation with the Regional office, is currently conducting a multi-year evaluation to better determine the nature and extent of those impacts. Effects to range and wildlife in regards to bitterbrush and logging are analyzed in site-specific environmental analyses.

COMMENT: Pest Management, Plan IV-26. We oppose the use of the area-wide broadcast spraying technique as a timber management practice due to its potential deleterious effects upon the general surrounding vegetative environment as well as upon the wildlife population. This should apply to both Management Prescriptions #9 and #10 and also to #11 insofar as it relates to proposed range conversion projects. (1431)

RESPONSE: The Inyo has not used broadcast spraying for timber management. No use is planned during this planning period.

COMMENT: Pest management. Insects and animals listed are native species integral to the health of natural ecosystems; they only become "pestiferous" when even-aged management is implemented to maximize timber production. Even-aged management is inappropriate on the Inyo National Forest, and these native species should not be treated as pests. Mistletoe berries, beetles and tent caterpillars, for example, are all important food sources for birds. (1548)

RESPONSE: The Inyo Forest recognizes the importance of native insects and other animals to the functioning and health of natural ecosystems. This is exemplified by the recent decisions to let pandora moth and tent caterpillar outbreaks run their natural course. Diseases, insects and animals are considered pests only when the damage they cause unacceptably interferes with meeting resource management goals and objectives. Even-aged management does not, "a priori", cause insects and other animals to become pests.

COMMENT: The argument under pest management (DEIS IV-66) that even-aged stands of trees offer the best defense against pest damage is seriously flawed. Monocultures of type or age are much more susceptible to attack by pests or diseases. It is precisely the genetic and life cycle diversity seen as needing "management" which provides the resilience in natural communities. Replacing forests rich in species diversity with tree farms only invites a repeat of the kind of widespread forest die-off occurring in Yosemite, where the essentially monoculture tree stands of lodgepole pine are succumbing to epidemic attack by a leaf miner. (1631)

RESPONSE: The narrative to which you refer does not state that "even-aged stands of trees offer the best defense against pest damage.". Healthy, vigorous trees and stands are generally less susceptible to insects and diseases than poorly-growing, unhealthy trees and stands. Sound vegetation

management, regardless of the "system" used, is a good way to create and/or maintain healthy stands and minimize susceptibility to unacceptable insect and disease damage. The situation referred to in Yosemite National Park principally involves two native insects (the lodgepole needleminer, a defoliator, and the mountain pine beetle, a bark beetle) in extensive, unmanaged areas of native lodgepole pine. In essence, the insects are playing a significant role in the natural succession of these pine stands.

COMMENT: The Forest cannot be seen as a collection of tree plantations without risking environmental disruptions. For example, the projected decline under the Preferred Alternative in the number of hole-nesting species (DEIS II-26) on the Forest is directly related to pest management policies. Snag-dependent species and species dependent on old growth trees can only exist under forest management practices which recognize goals other than timber quotas, and permit the unacceptable level of pest damage which characterizes their habitat. Furthermore, the interpretation of acceptable versus unacceptable levels of pest damage needs to be reassessed with the health of the forest ecosystem, not timber quotas in mind. (1631)

RESPONSE: Only 12% of the forested lands on the Inyo are managed for timber production. Snag retention requirements are included in the Standards and Guidelines for timber management. At least 10% of these managed lands are allocated to old growth. The objective of timber management is a healthy, vigorous forest with maximized timber growth - not volume harvested.

COMMENT: Any chemical application within the Lahontan Region should be done with awareness of the Regional Board's general surface water standard which prohibits concentration of pesticides in waters of the region greater than the lowest detectable concentrations using the most recent detection procedures available.

RESPONSE: Regional policy requires coordination with the Lahontan Water Quality Board prior to any chemical application project for pest control.

COMMENT: The appropriate pest management is the one recommended by the Paiute-Shoshone Indians: leave the forest alone and nature will take care of it. A good example has been seen in Yosemite National Park where there was serious damage to evergreens and yet good recovery took place in the following years. (1732)

RESPONSE: No treatment is one option under Integrated Pest Management. Each insect or disease problem is evaluated separately and treatment will depend on all the factors that relate to the problem. No treatment may be very appropriate in one instance and unacceptable in another.

COMMENT: Pest control should be implemented when it threatens to destructively imbalance natural ecosystems including humans. (65)

land available for exploration and development and under another alternative there are 110,400 acres is of importance. We recognize that this analysis process is very simplified and does not display the fact that neither the mineral commodities nor the opportunities to develop the mineral commodities are spread uniformly over the Forest. Generally speaking, the goal has been to maintain as many acres of high and medium mineral potential land available for access as possible, regardless of its location.

PLANNING PROCESS - NEPA

COMMENT: The FEIS should discuss the process for developing environmental documents such as cumulative impact analysis of herbicide projects and site-specific environmental analyses. This discussion should include the processes for public notification, comment and appeal. (2213)

RESPONSE: In the NEPA (National Environmental Policy Act) process, public involvement is required for all project analyses. The Forest provides public notification of all potential projects and the public has the opportunity to participate in the project analysis. Depending upon the scope of the project, this involvement can be minimal or extensive. All notifications include a description of the public's right to comment and appeal.

COMMENT: In the Plan, effects over five decades of "a moderate level of timber site preparation, a large amount of new road and trail construction, a moderate level of new alpine ski area development, a large amount of new recreation development, and a high level of projected mineral activity" are said to produce only "slight" impacts on riparian areas and "low-moderate" for watershed. This is indeed difficult to believe and the Forest Service may find the statement equally difficult to defend! Not mentioned is the proposed 9% increase in livestock grazing - a prime degrader of riparian areas. It seems that, as with most of the Inyo's resources, there are serious conflicts between the Preferred Alternative's generally stated management direction for riparian areas and watershed (generally praiseworthy), the actual management situation (greatly increased resource development over the next 5 decades), the detailed area-specific management direction (mostly non-existent as pertains to potential problems, their solutions, and protective measures), and the evaluation of results of the greatly increased development (supposedly minimal negative consequences). If the Final Plan is to be defensible, these deficiencies will have to be corrected. (2170)

RESPONSE: There will be no increase in grazing and no road construction for timber harvesting purposes during this planning period. This Plan is only in effect for the next ten years. During Plan implementation there will be continual monitoring to ensure that the Standards and Guidelines are being adhered to, resources are being protected or enhanced, and management direction is producing the desired results. The Plan can be amended or revised at any time if these conditions are not being met. The 50-year projections in the Draft Plan were for reference only. Both natural resource

and socio-economic conditions are too variable to be predicted with validity for more than ten years.

COMMENT: Any changes in Management Prescriptions for specific areas which were not considered under the alternatives discussed in the EIS will necessitate a supplement to the EIS. The supplement will have to be circulated for public review. (225)

RESPONSE: Subsequent to implementation of the Plan, such changes would require an amendment or revision to the Plan, depending on the extent of the changes.

COMMENT: As an avid outdoors person and a believer in wilderness for the sake of wilderness, I believe this is much more than a local issue. A hearing on the draft planning documents in the San Francisco Bay area would allow all Californians to participate in the decision making process. Thus, I am requesting that the Forest Service set up workshops and/or hearings in the San Francisco area so that all opinions can be voiced. (98) (34, 36, 37, 38, 40)

RESPONSE: All Californians had an opportunity to comment on the Draft Plan. The Final Plan is the result of these comments, which came from all over the country. Issues relating to National Forest planning are local, regional and national and are treated as such. The Public Response Appendix documents the public comments and the Forest Service response to them.

COMMENT: We are concerned not just with Mono Lake, but with the ecological health of the Mono Lake watershed and that of surrounding habitats occupied by wildlife that utilize Mono Lake and the Scenic Area. The Inyo Plan and the Mono Basin Scenic Area Plan cannot be isolated from one another; the management of one area affects the other. This is particularly true of the management of lands within Mono Lakes's hydrologic basin. We disagree with the statement on DEIS III-52 that "the Scenic Area is not likely to conflict seriously with activities on adjoining Forest lands," or on DEIS IV-65 that "there are no Forest activities subject to the Forest planning process that have the potential to substantially affect scenic, recreational or scientific values" within the Scenic Area. The view that both planning documents are mutually exclusive will result in a piecemeal planning process that ignores potential cumulative impacts of management decisions on these areas. It's complicated but I think the Forest Service should attempt to manage the entire watershed as a whole. (278, 1617) (1634, 2170)

RESPONSE: The Forest Plan acts as the umbrella document for the Mono Basin Scenic Area Plan. In the Forest Plan, the Mono Basin National Forest Scenic Area corresponds to Management Area #1 and is managed under Prescritpion #6. The specific management of the Scenic Area will be discussed in the Scenic Area Management Plan which is being developed on a separate timeframe as directed in Title III Section 304 of the California Wilderness Act of 1984.

COMMENT: I was pleased with the efforts that you made to hold public meetings. (1539)

RESPONSE: The Forest attempted to involve as many people as possible in this planning process to ensure an adequate representation of views.

COMMENT: The Tahoe National Forest publishes a quarterly bulletin which describes all major projects proposed. It includes timber sales, road construction, hydroelectric projects, etc. I don't know if the Inyo publishes such a bulletin, but, if not, it should. (916)

RESPONSE: The Forest is proposing to publish a tabloid or bulletin that would inform the public of all upcoming projects for the fiscal year.

COMMENT: It is apparent from the lack of comments from ranchers, miners, hunters and fishermen that information has not been available on these proposals. The people in this valley and Esmeralda County have been deliberately kept in the dark. Two copies of the proposed changes were forwarded to Esmeralda people, one of whom has been deceased these last eight years, and one to the County Commissioners. (1219)

RESPONSE: The Forest was informed that the Fish Lake Valley and Esmeralda County residents did not receive an adequate number of Draft Plans. Additional copies were sent to them and personal contacts were made by Forest Service personnel to ensure that that area's concerns and comments were adequately addressed in the Plan.

COMMENT: In order to review your Plan, I had to borrow it from a friend; your office told me there were no more copies available when I wrote. Perhaps you should try harder to keep users of the Forest informed. The unavailability of the Plan within a few weeks after its release is sufficient grounds, all by itself, upon which to base an appeal of the Plan. (47, 1539) (2170, 2171)

RESPONSE: An effort was made to ensure that a copy for review was available for anyone within reasonable limits. Copies of the Draft Plan are available at local libraries and governmental offices, with individual copies sent to those on the Forest mailing list. That list included anyone who had expressed an interest in Forest management. Budget constraints prohibited unlimited printing and distribution of the documents.

COMMENT: For such documents, a minimum of six months should be allowed as a review comment period. (1845) (48, 283, 2048)

RESPONSE: The review period is standardized in the NEPA process.

COMMENT: My concern regards the adverse impacts that cannot be avoided; the relationship between short-term uses and long-term productivity; and the

irreversible or irretrievable commitment of resources. The Forest Service has concurrent jurisdiction with FERC in the regulation and mitigation of impacts associated with hydroelectric development (see the Escondido court decision) (EIS, IV 176-181). Does the Forest Service intend to allow the "irreversible" and "permanent" alteration of "soil and hydrologic characteristics" of riparian zones? This seems contrary to the minimum management requirements and Standards and Guidelines already spelled out in the DEIS plan and to the mandates of NFMA and NEPA. The loss of seral stage diversity due to the removal of old growth forest is an adverse impact that can be avoided and must be, to meet the diversity requirement under NFMA. (1617)

RESPONSE: There may, as the result of a project, be adverse impacts, reduction in long-term productivity, or irreversible or irretrievable commitment of resources. The environmental analysis process is done to minimize these and provide for mitigation measures, if possible.

There will be adequate seral stage diversity when the Plan is implemented. Over 40 percent of the Forest will be old growth.

COMMENT: An underlying weakness is that the proposed Land and Resource Management Plan and the Mono Basin Scenic Area Management Plan are isolated from each other. There is no real substantive discussion linking the Scenic Area to the rest of the Forest. It's as if the two were entirely separate entities. This is an important point because Standards and Guidelines and policies established in the Forest Plan will eventually be incorporated into the Scenic Area Management Plan. The Inyo must recognize that the MBNFSA is an integral part of the Inyo. Management strategies should be designed to address resource conflicts Forest-wide. An example of a strategy which recognizes the integral nature of the MBNFSA is the current air quality problem on the Forest. A primary cause of the problem is dust produced on relicted lands as the lake level recedes. This dust problem is not restricted to the MBNFSA. It effects the Forest as a whole. A solution to this widespread air quality problem lies in a recent court decision. In that decision, the court affirmed federal ownership of the relicted lands in question (State of California, State Land Commission versus United States of America, Ninth Circuit Court of Appeals, 12/06/86). To solve the above described air quality problem, the Forest Service is encouraged to exert its authority to establish minimum lake levels, thereby preventing the continuing exposure of dust-prone soils. Additional questions need to be addressed in coordinating the management of the MBNFSA and the Inyo National Forest.

1. What impacts to the MBNFSA can be expected from resource management activities under the various alternatives?
2. No discussion is given to water availability on the Inyo. What impact can be expected from geothermal development and ski area development on water available to the MBNFSA?
3. What is the potential for visual impacts to the Scenic Area from geothermal development and timber harvesting in the Mono Craters? Please note that due to the interrelationship between the Scenic Area and surrounding forest lands, a reevaluation of certain Forest policies for

adjacent areas may be necessary following completion of the Scenic Area management plan. (2169, 1638)

RESPONSE: Interim management direction for the Mono Basin National Forest Scenic Area (MBNFSA) is contained in Appendix G of the Forest Plan. The Scenic Area will be managed under the interim direction until such time that the formal management plan for the MBNFSA is developed. Many of the questions you ask cannot now be answered with direction in the interim plan. However, many of the questions will be addressed in the formal management Plan. Some of your questions are site or project specific in relation to timber harvesting or geothermal development activities. Any ground disturbing activity proposed for undertaking on the Inyo National Forest would be addressed in a specific project environmental assessment.

Questions regarding water availability are very complex and would be discussed as part of specific planning or project EAs and on a cumulative impact basis. If impacts are identified that affect the Scenic Area, the NEPA process would deal with these.

Visual impact from either timber harvesting or geothermal development would be discussed in specific project EAs for the respective resource. The Forest Plan will not deal with project specific impacts.

COMMENT: I am aware of the fact that the Forest Service receives significant revenue from ski ticket fees. Already wilderness boundaries have been drawn in such a way that it is difficult not to believe that insiders have for some time intended massive development. The problem of a possible conflict of interest among Forest Service decision makers should not be overlooked and responsible public servants must undoubtedly take this into account. Integrity demands detachment. (1183)

RESPONSE: The Forest Service does not benefit from ski area development. There are returns to the U.S. Treasury from ski area permittees as there are from campground concessionaires, timber operators, mineral operations, communications installations, and other uses of Forest lands that require special use permits. National Forest System lands are public lands and, as such, provide opportunities for public use that may not be available on private lands.

COMMENT: The Plan should have a streamlined method of adjusting to local planning documents without subrogating applicable environmental analysis. (1845)

RESPONSE: Project-level environmental analyses cannot be superseded by local planning documents. Local planning documents will always be included as a significant part of the analysis process.

COMMENT: I'm overwhelmed by the volume of paper generated and its cost in man hours and dollars. Most of the written material is beyond comprehension unless one has the time and patience to wade through a quagmire of tables,

prescriptions, assumptions, assorted facts and conclusions. Would it not have been possible to prepare concise management plans for each Ranger District and keep the text to 25 pages or less plus a few maps? Such a document would serve the purpose well, people could understand it, and it would be a lot easier to chuck into the stove when the time comes. (113) (1619)

RESPONSE: It would not have been possible given the complexity of the current process which is intended to respond to the requirements of the National Forest Management Act. Some respondents want even more information than is in the draft documents. The former unit planning process of the Forest Service is what you describe.

COMMENT: Areas of "possible" conflict must be clearly identified and definitive procedural guidelines resolved in the Plan. How are riparian and watershed areas to be protected where logging, roadbuilding, grazing, ski development, or ORV use is being conducted. (2142, 466) (214, 232, 400, 904, 1099, 1161, 1193, 1202, 1253, 1496, 1509, 1532, 1844, 1865, 1883, 2005, 2147, 2170, 2180)

RESPONSE: "Possible" conflicts are infinite, given the number of resources that are managed on the Forest. The Forest-wide Standards and Guidelines address each resource's needs for protection or enhancement.

COMMENT: The RPA Alternative appears to be misnamed in that where conflicts among goals occur, it would meet only those RPA goals for commodities. The Forest and Rangeland Renewable Resources Planning Act (RPA) specifically addressed improving the yield of tangible and intangible goods and services. This alternative would result in drastic reductions in wildlife habitat and species diversity, contrary to the clear intent of Congress. There is a real need for the Forest, especially under this alternative, to try to meet all of the 1980 RPA targets and goals. The prescriptions listed, in most cases, do not even meet Minimums Management Requirements or Standards and Guidelines. (2190)

RESPONSE: In the Final Plan, RPA targets are not met in some cases because more detailed analysis concluded that they are not reasonable. RPA targets are derived from more generalized analyses and are intended to be used for reference.

COMMENT: I support the Amenities Alternative for the Inyo National Forest. This alternative seems to adopt the maximum protection for wilderness and wildlife. The primitive and dispersed recreation it would allow is most compatible with the natural elements that already exist in these lovely areas; it would do the most to make certain that this part of California stays as untouched as possible. It is better to protect our lands now and let future generations decide if it is more reasonable to further develop commodity areas in the Forest at a later date. (1010, 69, 26) (72, 78, 104, 134, 319, 387, 390, 392, 397, 410, 444, 455, 906, 914, 1415, 1431, 1539, 1802, 1836, 1952, 2112, 2149)

RESPONSE: The Plan emphasizes the wilderness, recreation and wildlife resources as in the Amenities Alternative but also provides for the use of all resources on the Forest. All projects will be analyzed in site-specific environmental analyses with public involvement.

COMMENT: Support the RPA Alternative with the following modifications: the range management land allocations and prescriptions from the Preferred Alternative should be used; watershed improvement land allocations and management prescriptions from the Preferred Alternative should be used; alpine ski areas and prescriptions from the Preferred Alternative should be used; manage the San Joaquin and Glass Mountain areas from the Preferred Alternative; and avoid special designation for the South Fork of the Kern and San Joaquin Rivers. (309) (280, 283, 294, 330, 469, 1432, 1869, 1919)

RESPONSE: The RPA Alternative proposed targets that more specific analyses determined were not realistic at this time. The Plan provides a mix of levels of resource use based on the public comments received in response to the Draft Plan. The South Fork of the Kern River has been designated by Congress as a Wild and Scenic River.

COMMENT: There are some acceptable provisions in the Preferred Alternative and AMB Alternative, but Alternative RPA is unacceptable for it emphasizes livestock production at the expense of other Forest values. (319) (944)

RESPONSE: The Plan proposes no increase in livestock production. The current program will be maintained.

COMMENT: Alternative AMB would concentrate management for the development of recreation and wildlife. The Forest Service should more completely examine the conflicts to wildlife that are inherent in a Plan that emphasizes recreation.

RESPONSE: The Forest-wide Standards and Guidelines for wildlife are designed to protect the resource regardless of management emphasis. There is also additional specific direction in the various prescriptions for wildlife resources.

COMMENT: There should be a benchmark for maintenance and enhancement of the biological environment. (DEIS, Chapter II) (225)

RESPONSE: The benchmarks were only used to determine minimum level management costs and outputs, the maximum physical and biological capability of the Forest to produce key resources, and the most economically efficient mix of management activities by maximizing Present Net Value.

COMMENT: Alternative LBU should have been considered in detail. There is no guarantee that funding will be maintained to provide the resource monitoring and enforcement required under the Preferred Alternative. (225)

PLANNING PROCESS

RESPONSE: As stated in Chapter II of the DEIS, Alternative LBU did not respond to major public issues and therefore was disqualified from detailed study. Implementation of the Plan is dependent upon budget appropriations by Congress and allocations to the Forest by the Regional Office.

COMMENT: Support the AMN and AMB Alternatives (regarding less clearcutting, some new visitor facilities and less riparian damage, but no ski resort!) I support the AMB Alternative over the PRF Alternative in general. (121)

RESPONSE: The Preferred Alternative has been revised to reflect public comments received in response to the Draft Plan.

COMMENT: Consider an alternative which shows the effects of no timber harvest on the Inyo. (1099)

RESPONSE: The timber resource is one of the multiple-use resources of the Forest. It is a necessary component of the Forest's program in providing a continued supply of wood products to users. This includes the fuelwood program, significant to the local economy.

COMMENT: I specifically support the well researched and detailed alternative plan that has been prepared by Earth First! This plan calls for inclusion of all roadless areas under wilderness designation, and no further ski development for Mammoth (which I see as the greatest threat to ecological/hydrological balance in the Eastern Sierra), no cutting of red fir old growth or Jeffrey pine stands, elimination of grazing from National Forest (and BLM) land, and no further road or trail building. The meager allotment of wilderness to the White-Inyo complex, Paiute/Mazourka area, Benton Range, San Joaquin and Wheeler Ridges, Mono Craters, Glass Mountain, and Excelsior is appalling. All these and the other BLM WSA's on adjacent land should be wilderness. I support the full potential of 962,697 acres as wilderness. (1271) (170, 331, 450)

RESPONSE: The Inyo National Forest is managed for multiple-uses. The Plan proposes to manage all the resources of the Forest for the best mix of uses after reviewing both resource needs and public comments. Approximately 60,000 acres have been added to the wilderness recommendation, primarily in the White Mountains; red fir stands west of U.S. 395 will not be harvested because of recreation values in that area; and grazing will continue as an appropriate resource of the Forest. Ski area development will take place under the auspices of the Mammoth Mountain and June Mountain Master Development Plans. Additional development will require a cumulative effects study and Environmental Impact Statement.

COMMENT: I urge your support of the Preferred Alternative for the Inyo National Forest. (1520) (14, 350, 1629, 1893, 2142, 2152)

RESPONSE: The Final Plan reflects the draft Preferred Alternative with revisions that have resulted from the public comments received by the Forest.

COMMENT: The Preferred Alternative does not meet the needs of people who truly care for our last natural areas and their wildlife and who believe they should be protected for fear we may be the last generations to have the chance to enjoy them. (1534) (27, 492, 1248, 1269, 1331, 1844)

RESPONSE: The Plan is designed to protect natural areas and all resources while providing for public use on public lands. The wilderness recommendation has been increased by approximately 60,000 acres in the White and Inyo Mountains to provide protection for unique environments.

COMMENT: While the Preferred Alternative attempts to establish a middle ground for the Inyo Forest, it fails to meet many of the needs of most of its very diverse user groups. Neither the amenities group nor the commodities group will be very happy with this attempt at giving some of the pie to everyone. (2170)

RESPONSE: The objective of the Plan is not to satisfy one user group, but to provide a wide range of public benefits in the multiple-use management of the Forest.

COMMENT: I strongly support recommendations made by the Friends of the Inyo for the Plan. Please take this opportunity to fulfill your responsibility to protect wildlife habitats and species diversity which must receive priority over other uses such as mining, downhill skiing development and timber development. (1218) (3, 90, 96, 108, 110, 116, 133, 136, 140, 141, 146, 154, 165, 226, 227, 232, 267, 287, 292, 329, 400, 430, 953, 1009, 1029, 1033, 1097, 1316, 1346, 1350, 1500, 1509, 1515, 1524, 1539, 1550, 1554, 1558, 1653, 1664, 1667, 1692, 1693, 1697, 1701, 1707, 1778, 1781, 1800, 1801, 1804, 1809, 1813, 1818, 1819, 1820, 1839, 1863, 1876, 1952, 1968, 1975, 1977, 1985, 1996, 1997, 1998, 2001, 2002, 2003, 2004, 2019, 2020, 2029, 2034, 2046, 2113, 2117, 2124, 2147, 2188)

RESPONSE: The comments of the Friends of the Inyo have been incorporated in the Plan, together with comments from other user groups. All resource uses are evaluated in a multiple-use context, and wildlife habitat and species diversity needs are incorporated in the utilization of all resources. See the Standards and Guidelines for specific protective measures.

COMMENT: I would like to see the RPA Alternative adopted, if any at all. We do not need more wilderness and limited access areas. I support multiple-use and economic stability, with sound use of our natural resources. You can have coexistence through multiple uses such as skiing, mining, range, recreation and wildlife, with differing degrees within the same land base. (1254) (357, 955)

RESPONSE: The Plan is designed as a multiple-use plan with a mixture of resources on the land base. Forest-wide Standards and Guidelines describe the protective measures necessary for all resources that will be incorporated into each Prescription that emphasizes one resource. Each Management Area will then have a mix of Prescriptions. The RPA Alternative provided targets for resources that more specific analysis indicated are either not reasonable or not achievable.

PLANNING PROCESS

COMMENT: I was impressed by the comprehensive nature of the Inyo Plan, particularly in selecting a wide range of alternatives for consideration. In general, I feel that the DEIS is an excellent document, especially when compared with others. (351)

RESPONSE: Thank you.

COMMENT: A fellow geographer at California State University, Fullerton had a dream of a Sierra Crest National Park; it was the subject of his Master's thesis. I would like to see that come true some day to preserve this area and its grandeur for my children and grandchildren to enjoy, and to save one of the jewels of California. (481)

RESPONSE: Designation of federal land as a National Park is the sole responsibility of Congress and is outside the scope of the Forest Plan.

COMMENT: Add the nine deer herd plans written for the Inyo Forest and the Cottonwood Creek Wild Trout Management Plan to the section that addresses the relationship of existing plans with past and future planning. (2170)

RESPONSE: These are included. See Appendix A of the Plan.

COMMENT: Want sustained yield of Forest and range and maintenance of maximum species diversity. (88)

RESPONSE: The Forest will be managed for sustained yields of both timber and range with maximum species diversity. See the Standards and Guidelines for specific management direction.

COMMENT: The following comments apply to all descriptions (Management Area Direction IV-85-141). Area-specific management problems must be included. Without adequate information, the concerned reader cannot know if prescriptions and directions are adequate; management area direction for range must be included; thousands of acres are allocated; riparian area problems, prescriptions, directions, standards and guidelines must be included; and the following are just a few specific management areas having several problems that must be individually addressed in the Plan and EIS: Mono Basin/Parker Canyon, Coyote Flat, Cottonwood Canyon, and Kern Plateau. (2170)

RESPONSE: Area-specific management problems are not included in the Management Area descriptions because they vary with changing conditions. Project-level environmental analyses enable the public to comment on specific resource problems. The professional resource specialists constructed the Forest-wide Standards and Guidelines to address problems relating to their resource responsibilities. The interdisciplinary Management Team reviewed all Standards and Guidelines. Range management direction has been added.

COMMENT: When it comes to lands east of U.S. 395, the Plan and the DEIS show a curious insensitivity, almost a hostility, to these more arid and less glaciated landscapes. (2152)

RESPONSE: There is more discussion in the Plan about the lands west of U.S. 395 because of the high level of recreation use in that area and the public's expressed interest in it. The Forest Service places as much emphasis professionally on the lands east of U.S. 395 as on those west of the highway.

COMMENT: Change the designation of the north side of Deep Springs Valley from Prescription #18 to Prescription #17 for the following reasons: there are springs in this area which lie within the Black Toad range; there is a stand of unique low elevation bristlecone pine; and this will retain the integrity of this area with the rest of the Deep Springs watershed which is currently under Prescription #17. (1522)

RESPONSE: This has been done.

COMMENT: All roadless lands previously in Management Prescription #18 should be redesignated Management Prescription #17. (322) (3, 324, 381, 400, 481, 1757, 1758, 2142)

RESPONSE: This has been done.

COMMENT: The number of Management Prescriptions could be reduced. For example, Prescription #9 and Prescription #10 could be combined. Other examples would be Prescription #7 which could be combined with a prescription for all Special Interest Areas and Research Natural Areas such as Prescription #5. Prescriptions #13 and #14 should be combined. The prescriptions should deal with the natural resource, mainly the vegetation. Prescriptions #17 and #18 do not seem to have anything to do with the resource. (29)

RESPONSE: All Prescriptions are necessary to address the various resource emphases. Prescriptions #9 and #10 reflect two levels of management of the timber resource. The Ancient Bristlecone Pine Forest (addressed in Prescription #7) is managed very differently from all other Special Interest Areas and Research Natural Areas as it is a very popular recreation-oriented area, in addition to being a scientific research area. Prescriptions #17 and #18 deal with one of the most critical resources of the Forest: its users. Prescription #17 addresses the semi-primitive recreation experience; Prescription #18 addresses all levels of use with no particular resource emphasis.

COMMENT: Prescription #10 seems to provide no management direction for wildlife, diversity, or old growth. The Prescription #10 procedures are too disruptive of resources for use in some of the lands indicated on the Preferred Alternative map (north half) such as the Glass Mountain and Hartley Springs areas. Prescription #10 to the east, north and northwest of Glass

Mountain would be highly destructive to scientifically important resources and should be changed to Prescription #17. (971) (466)

RESPONSE: Prescription #10 will not be implemented west of U.S. 395. Provision for wildlife, diversity and old growth along with other specific resource management direction is discussed in the Forest-wide Standards and Guidelines. The area east of U.S. 395 will remain in Prescription #10.

COMMENT: Management Prescription #18 does not contain fisheries, riparian, wildlife or watershed elements and management direction for each as included in other prescriptions. Other prescriptions only contain one or two of these elements. Prescriptions #9 through #18 should include specific management direction for fisheries, riparian, threatened endangered or sensitive species, wildlife and watershed. These management directions should include monitoring, specific VQOs, water quality beyond the "best management practices", limitations of road building such as those for wildlife under Prescription #14, and specify an SMZ buffer preferably greater than 200 feet under the riparian element for Prescription #15. (1108)

RESPONSE: The basic direction for management of each resource is discussed in the Forest-wide Standards and Guidelines. These were constructed by the resource specialists on the Forest with additional input from resource professionals from other agencies and public input. Additional direction is included in relevant Prescriptions as needed. Monitoring plans are included in Chapter V.

Budget

COMMENT: The additional cost figure should be increased to reflect the stream evaluation procedure utilizing GAWS are recommended by the CDFG. (V-6) (2190)

RESPONSE: The monitoring costs have been increased.

COMMENT: We note that most of the outputs of the Preferred Alternative are lower or not significantly higher than those in RPA for the first decade, but the budgets are identical. Thus, it would seem that the RPA Alternative is more efficient from a business management standpoint as well as being more productive from a resource management standpoint. The Plan should analyze the potential effects of budget shortfalls. We do not refer to development of a budget driven "low budget" alternative, but rather to an analysis of the way in which the Forest Service would meet the goals of the Plan within limits of constrained budgets. Within this context, it seems that the analysis should provide: (A) a clear description of the budget cuts between program elements; (B) a clear description of the impact of the budget cuts on each program element; (C) a clear description of the impact of budget reductions on PNV, cash flow (to the treasury as well as to counties), employment opportunities, and other social and economic parameters; and (D) a clear description of any changes in land allocations, resource programs, or

management that might be needed to meet the Plan's basic goals under a reduced budget. It would be appropriate to make such an analysis for varying levels of budget shortfall - say 80%, 60%, and 40%. The discussion should also address the question of output backlogs. Ideally, these analyses should be made for each alternative, but, as a minimum, they should be displayed at a single location in the EIS. A complete display of analysis will help in framing future budget requests and will, we believe, add to the premise that fully funded Forest programs are in the nation's best social, economic and overall environmental interests. (1432) (49, 128)

RESPONSE: The Plan states how the Forest will be managed during this planning period. The Plan has been constructed with extensive public involvement and the public has a strong interest in its implementation. The Plan's program will be the basis for budget requests to Congress. Any deviation from the Plan's program resulting from budget shortages will be documented and the public will be able to track accomplishments and related costs. This will provide accountability and provide Congress with better information for their decision-making.

COMMENT: Wonder how many of the goals are realistic. Aware of the serious budget cuts in the various agencies and am concerned that departments concerned with environmental study and protection seem to be the most severely cut. For instance, how can riparian habitats be improved, and how can monitoring programs be carried out if the Forest Service lacks personnel to do the jobs? How can campgrounds be improved and new trails built? Are we being given promises which cannot be fulfilled? (134) (297)

RESPONSE: Forests have been assured that the Plans will be used to determine resource priorities for the allocation of funds. However, if the total appropriation from Congress to the National Forest System is reduced, then specific projects will not be implemented.

COMMENT: The Forest Service budget needs to reflect adequate funding to provide for the following: information, interpretation and enforcement through field presence along with monitoring. (2210)

RESPONSE: Those costs are included in the Forest budget.

COMMENT: We question your statement that there will be no budget limitation as this does not reflect the present trend. This section should more realistically provide a prioritization of management activities should optimum funding not be available. How else will the public know whether or not Forest resources will receive adequate protection? The preferred objective for deer habitat should state "maintain or increase the Forest-wide deer habitat capacity.". (1617) (225, 297, 2170)

RESPONSE: This statement is misleading as it merely means that there was no budget constraint built into the FORPLAN model. There are always budget constraints in a federal agency. The Plan reflects the management priorities for this planning period. The Plan also reflects the increased emphasis on

PROTECTION

RESPONSE: The budget for the Final Plan has been reduced from the Draft. Commodity programs for the most part will continue at current levels although the timber ASQ has been reduced. The Plan is designed to provide an appropriate mix of commodity and non-commodity outputs that reflect public response to the Draft Plan. Refer to the Budget Appendix in the EIS Appendix.

COMMENT: How will budgets be allocated to the various resources if the budget is cut? This subject was not brought in the proposed Plan. (0297 006)

RESPONSE: The Plan reflects Forest priorities and requests for funding will be based on the Plan. Congress appropriates money to the National Forest System by resource so that ultimately Congress decides how Plans are implemented. During the monitoring and evaluation process, implementation can be reviewed and corrections made in either the Plan or budget requests.

PROTECTION

COMMENT: Firebreaks should be kept to an absolute minimum because they are aesthetically unpleasing and they encourage the illegal removal of snags for firewood. (78) (140)

RESPONSE: Proposed fuel breaks must go through the environmental assessment process prior to construction. Visual Quality Objectives must be identified and met during this process. Forest Service Manual direction is specific to the width and design of shaded fuel breaks which takes into consideration aesthetics and removal or disposal of residual wood.

COMMENT: Return to natural fire ecosystem. (171) (278, 1617)

RESPONSE: The Forest Plan provides for the establishment of fire management units which practice fire suppression strategies other that full control objectives.

COMMENT: On Plan III-22 under protection, please add: "The Forest Service fire mission is wildland fire protection. The Forest, however, also contains structures that require structural fire protection. Although local fire districts will respond to structural fires on the Forest through mutual aid or interagency agreements, most fire districts have little input in the development review process of new structural developments on federal lands. Certain developments on the Forest such as geothermal have significant fire protection considerations that should be reviewed by the local structure fire protection agency prior to construction. The Forest should consequently formally include the local fire districts in the review of all structural development proposed for the Forest to ensure adequate design and mitigation for fire protection impacts."

RESPONSE: The Forest-wide Standards and Guidelines for protection have been revised to include your concern.

COMMENT: Please add: "Specific guidelines will also be developed to ensure adequate structural fire protection on the Forest." (1638)

RESPONSE: Structural fire protection is the responsibility of other agencies. Their concerns and recommendations will be included in all new developments and covered in the annual cooperators' meeting dealing with structural fire protection.

COMMENT: We note that there is no fire management plan at present for the Reds Meadow area next to the Devil's Postpile. We would like to have input to the development of the fire management plan for this area. (487)

RESPONSE: Currently there is an interim fire management plan for the Inyo National Forest. Upon completion of the Forest Plan the remainder of the Forest will be included in the fire management planning effort. All affected agencies will be contacted for input into that plan.

COMMENT: I am very happy with your enlightened attitude towards fire. Definitely in favor of using the confinement and containment strategies on much of the Forest. Human-caused fires need not automatically be suppressed; all fires, no matter what their cause, should be similarly considered. (91) (140)

RESPONSE: Currently, regional policy is to use a control strategy on all human-caused unplanned ignitions. The primary purpose of this is the potential liability of those responsible for starting the fire.

COMMENT: I concur with Standard and Guideline #3 for fire. However, emphasis should be placed on allowing natural fires to burn throughout the Forest, except where risk is placed on people and property. We look forward to working with your personnel to designate areas where this would be beneficial to wildlife. (1634, 2190) (65, 140)

RESPONSE: This is already policy as prescribed in the Interim Inyo Fire Management Plan for wilderness and the White Mountains. Additional areas will be added in the future.

COMMENT: I support a "let-burn" policy for lightning-caused fires. (345) (151, 266, 318, 380, 399, 447, 448, 1483, 1484, 1567, 1781, 1810, 2172, 2173, 2174)

RESPONSE: Currently a "let-burn" policy does not exist. Unplanned natural ignitions are managed under one of three suppression strategies. Those strategies are control, containment or confinement. Each unplanned ignition is evaluated based on weather, location, available resources and other

considerations. The appropriate suppression strategy is then selected and applied.

COMMENT: The statement "the Forest Service fire mission is wildland fire protection" should be replaced by stating "the Forest Service fire mission is to use fire as a resource management tool." (1193) (140)

RESPONSE: This statement has been added to Forest Goals for protection.

COMMENT: Setting an arbitrary limit of 50 acres (Plan IV-50) on natural lightning fires is not realistic. It should be replaced by a range of figures backed up by current research and statistical study of past fire behaviors and regrowth in this area. (193)

RESPONSE: Currently the Inyo Forest is operating under an interim fire management plan which gives certain acre objectives for each suppression strategy. This acre objective is supported by current research and study of past fire history. The figure of 50 acres has been removed.

COMMENT: In Management Prescription #1 - Designated Wilderness, we suggest the following be added to the section on protection: "Work with the Department of Fish and Game and other interested groups to develop plans for prescribed burn areas to allow fire to assume a more natural role and to restore wildlife habitat." We believe that only understory fires should be permitted in sensitive forested watershed areas such as the South Fork Kern. In large forest areas, fires should not be allowed to burn out of control. (2190)

RESPONSE: Current policy is to involve all affected agencies in development of fire management plans.

COMMENT: The historical fire suppression policy has had adverse impacts on native plants and animals. (298, 1632)

RESPONSE: The interim fire management plan for the wilderness and the White and Inyo Mountains calls for suppression strategies other than full control of wildfires. This interim plan will be replaced with a fire management plan which will allow fire to resume a natural role in the ecosystem.

COMMENT: I agree that the Inyo National Forest should consider a revision of its fire control policy to allow natural fires to burn in some areas. I also agree with the Forest on using prescribed fires to improve wilderness habitat. Specific fire management plans should be developed for large ungulate species like bighorn sheep, mule deer, and pronghorn antelope. (1433) (298, 1632, 2101, 2170)

RESPONSE: Fire management plans are prepared and approved to allow fires to burn under different suppression strategies. The objectives of fire

management plans are primarily to reduce suppression costs; resource objectives are secondary other than allowing wildfires to assume a natural role. Specific resource objectives are met with prescribed fire. Currently, the Inyo has plans to burn for wildlife habitat enhancement and other resource objectives.

COMMENT: It is not clear to me how containment can be achieved with no on-the-ground action. It is difficult to agree with a "no action" policy without the designated areas delineated on a map. There are many areas on the Inyo that are probably well suited to confinement or containment particularly in the Inyo and White Mountains. However, these areas need to be carefully studied for potential resource damage and time needed for regeneration, particularly regarding wildlife habitat. (33)

RESPONSE: Containment is one suppression strategy that may use natural barriers to stop the forward spread of the fire. A containment strategy may also be used in areas without natural barriers but minimal action will be taken to stop the forward rate of spread. To assume that "no on-the-ground" action is the same as containment is not always true. The areas in the White and Inyo Mountains are delineated on a map and are available for review. These areas were carefully studied for potential resource damage during completion of the interim fire management plan. Future efforts in fire management planning will consider potential resource damage in addition to other criteria for selecting the appropriate suppression strategy.

COMMENT: The response to the issue/concern regarding appropriate fire management is too sketchy. There are appropriate areas to let natural fires burn, and implementation of such a policy would increase the cost-effectiveness of fire management on the Forest, increase diversity, and protect wilderness values. While detailed guidelines for fire suppression can wait until a fire management action plan is completed, policy and direction need to be addressed in this Forest Plan. A "let-burn" policy for parts of the Forest is desirable for economics and resources. Without such direction, concerns that a fire management action plan might be biased against reductions in the level of fire suppression should be addressed. (128)

RESPONSE: Policy and direction are outlined in the Forest Plan under Forest Goals, Objectives and the Standards and Guidelines. Specific direction on how to implement this policy and direction will be included in the Inyo Forest Fire Management Plan.

COMMENT: Management of the Golden Trout Wilderness should specify relaxation of containment and control policies where single tree lightning fires in areas with no ground cover are common. (128)

RESPONSE: The Golden Trout Wilderness will be included in a forest fire management plan which will be completed after the Forest Plan is approved.

management planning efforts give specific acre objectives for each suppression strategy based on the above criteria.

COMMENT: The Golden Trout Wilderness has a dangerous accumulation of natural fuels. We need a fuels treatment prescription to correct this build-up. (1522)

RESPONSE: This area will be addressed in the forest fire management planning effort.

COMMENT: Recognize the need for and values of managing vegetation to achieve protection from fire and to establish a more natural community age class distribution.

Without more specific details concerning how fire will be used on Inyo National Forest, we cannot evaluate the potential impacts to native vegetation. We request that this information be provided before our review can be completed. (1108)

RESPONSE: How fire management will be used is addressed in Forest Goals, Objectives and the Standards and Guidelines. Specific objectives and suppression strategies will be addressed in the forest fire management plan upon completion of the Forest Plan.

RANGE MANAGEMENT

COMMENT: *Management Area #1 - Mono Basin. Mono Lake - no new grazing* permits should be allowed here to encourage the native wildlife. A management priority must be the protection and enhancement of riparian areas throughout the Basin. Under the Preferred Alternative, degradation of these areas as a result of grazing is allowed to continue. This kind of sacrifice of natural resources on Forest Service lands is unacceptable. Also, considerable riparian habitat is located within the LADWP boundaries. The Plan should make a commitment to try to acquire these areas or at least to pursue a cooperative interagency agreement to remove grazing from these riparian areas and restore them. (1843, 2170)

RESPONSE: Grazing in the Mono Basin Scenic Area will be addressed in the Scenic Area Plan which is currently being prepared.

COMMENT: Management Area #3 - Walker. The public and private lands adjacent to U.S. 395 (on east and west sides) should be designated as a range recovery area. Grazing should be terminated immediately. This area would be a good place to test various range recovery techniques. (140)

RESPONSE: Nearly all the land adjacent to U.S. 395 on both sides is private or state land. Some areas are in the Mono Basin National Scenic Area. We

have no control over the private lands. The lands in the Scenic Area will be addressed in the Mono Basin Scenic Area Plan.

COMMENT: Management Area #4 - June Lake Loop. Under range, change to Limited Access Prescription; the destructive effects of grazing on riparian areas make it an inappropriate activity for this part of the Inyo. (2170)

RESPONSE: We have not changed the area under Prescription #11 - Range Emphasis. However, Forest-wide Standards and Guidelines for fish and wildlife habitat, riparian resources and range have been modified.

COMMENT: Management Area #3 - Walker/Parker. Under range, include range management direction aimed at correcting the severe overgrazing now occurring. For example, redesignate range emphasis areas as Limited Access areas, with emphasis on recovery of degraded riparian and wildlife habitat. Because much of this area is owned by the City of Los Angeles, consider acquiring key riparian and wildlife habitat. At the very least, try to work more with L.A. in recovering these valuable areas. (2170)

RESPONSE: See above response.

COMMENT: Management Area #5 - Glass Mountain. For range, a statement of the fact that parts of this area are important to deer is missing. (2170)

RESPONSE: Please refer to the description of Management Area #5; we have incorporated information there about the deer herds in the area.

COMMENT: Management Area #6. I am confused. You state in Appendix C-115 that there is currently no cattle grazing in the area as wild horses have priority for forage, yet on C-114 you say "current uses include...grazing"! (1634)

RESPONSE: Current use of the Nevada portion of the Excelsior Further Planning Area includes grazing. Management Area #6 - Pizona, includes two small grazing allotments, one of which has not been used in recent years.

COMMENT: The section on Management Area Direction should be rewritten to reflect a greater importance of the wild horse in the overall Pizona area because (1) by law, they are to be treated as an integral part of the natural system of the public lands and (2) they provide a source of recreation. (124)

RESPONSE: We have added information about the significance of the wild horse population in the description of Management Area #6 - Pizona.

COMMENT: Management Area #7 - Upper Owens River. Under range, add: "Vegetation manipulation to benefit livestock should only be done when it does not degrade sage grouse habitat." Directions for protection of riparian areas and wildlife habitat are missing. (2170)

RANGE MANAGEMENT

RESPONSE: Please refer to the Forest-wide Standards and Guidelines for sage grouse which have been modified. The Standards and Guidelines for riparian and wildlife have also been significantly modified.

COMMENT: Management Area #8 - Mammoth Escarpment. Under range, add an element to take care of the 3357 acres designated as range emphasis. (2170)

RESPONSE: There are no acres designated Prescription #11 - Range Emphasis in this Management Area.

COMMENT: Management Area #9 - Mammoth. Please revise the range designation on Doe Ridge in the far eastern portion of the Management Area to reflect the direction of the Mono County General Plan and the Mammoth/June Lake Airport Land Use Plan. (1638)

RESPONSE: We have made no change in the range designation; we feel the area designated Prescription #11 should emphasize range management.

COMMENT: Management Area #11 - Convict-McGee. Last summer when I went to the McGee Mountain area, I found a large herd of sheep in the wilderness area (very disappointing). I would like to see the sheep kept on the lower part of the mountain or removed. I would also like to see the mining road to the top of McGee Mountain closed. It is a narrow and dangerous road which I believe someone is going to be injured on. (1886)

RESPONSE: Congress provided direction stating that grazing is an acceptable practice within wilderness areas. Management direction emphasizes that grazing in wilderness areas must be compatible with wilderness direction. Your concern regarding the road on McGee Mountain is beyond the scope of the Plan; however, it will be forwarded to the Forest Engineer for his information.

COMMENT: Management Area #13 - White Mountains. Under range, change the grazing statement to read: "Allow no livestock grazing." The Ancient Bristlecone Pine Forest is a very unique and fragile area; grazing is totally out of place there. (2170)

RESPONSE: We agree that the Bristlecone Pine Forest is a unique resource. However, there is no conflict between grazing and the bristlecone pine; there is very little forage near the bristlecones. Grazing is a permitted use in this Management Area.

COMMENT: Management Area #13 - White Mountains. Under range, add specific directions for mitigating excessive grazing exclusion areas. Add: "Eliminate grazing in riparian areas where degradation of wildlife habitat takes place." (2170)

RESPONSE: The Forest-wide Standards and Guidelines for riparian resources, fish, and range have been significantly modified. We feel these changes address your concerns.

COMMENT: The exclusion of cows from about 20,000 acres of four existing domestic grazing allotments will seriously effect the economic viability of those allotments. There has been continuous use of those allotments for 130 years which predated the formation of the White Mountain District by over 50 years. The alleged reason for the exclusion of those areas (i.e. to protect mountain sheep habitat) does not hold much water. Mountain sheep are moving back into the area northeast of White Mountain Peak despite the fact that cows are currently grazing those adjacent allotments. Why eliminate cattle grazing while paying no attention to the concentrated human use precipitated in those areas by the Crooked Creek Research Station, White Mountain Research Station and the Patriarch and McAfee RNAs? (1588)

RESPONSE: After further research into this issue, the range element to which you refer for Management Area #13 - White Mountains has been modified to read: "Exclude portions of the Perry Aiken Flat allotment from cattle grazing to protect mountain sheep habitat."

COMMENT: Management Area #14 - Rock Creek/Pine Creek. Add this element under range: "Allow no increase in grazing where this might adversely affect deer habitat." (2170)

RESPONSE: We have added similar wording.

COMMENT: Management Area #15 - Bishop Creek-Buttermilk. Under range, no increases in grazing where it could degrade wildlife habitat. Better yet, no grazing. (1988) (2170)

RESPONSE: Wording similar to this has been added to Management Area #15 direction.

COMMENT: Management Area #17 - Owens Valley Escarpment. Please add a range section stating: "Reduce, modify or eliminate grazing where degradation to fish or wildlife habitat can be demonstrated." (2190) (2170)

RESPONSE: Wording similar to this has been added to Managment Area #17 direction.

COMMENT: Management Area #18 - Inyo Mountains. Under range, add this element: "Reduce or eliminate grazing when it is degrading wildlife habitat." Add details of how grazing damage to Santa Rita Springs is going to be mitigated. (2170)

RESPONSE: We have added language similar to your suggestion. Specific management of Santa Rita Springs is beyond the scope of the Forest Plan.

RANGE MANAGEMENT

COMMENT: Management Area #18 - Inyo Mountains. Please add a range section which reads: "Reduce, modify, or eliminate grazing where degradation to fish or wildlife habitat can be demonstrated." Also, the following should be included under wildlife: "Develop water sources where possible for deer and other wildlife." (2190)

RESPONSE: Wording similar to this has been added to Management Area #18 direction.

COMMENT: Management Area #19 - Golden Trout. Allotment plans should be revised to reflect the need to maintain quality fawning habitat for the Monache deer herd. Flexible on and off dates should be included in these plans so that yearly variations in range readiness can be used to determine actual grazing dates each year. (2190)

RESPONSE: AMPs will reflect the needs of all resources. Present range management practices already allow us to adjust on and off dates according to readiness and utilization.

COMMENT: Management Area #19 -Golden Trout. The following statement should be added to the range portion: "Reduce, modify, or if necessary, eliminate grazing in those areas (particularly riparian zones) where grazing is shown to be detrimental to fish or wildlife habitat. (2190) (1433)

RESPONSE: Wording similar to this has been added to Management Area #19 direction.

COMMENT: Management Area #20 - South Sierra. The following statement should be included under range: "Reduce or if necessary, eliminate grazing in those areas (particularly riparian zones) where grazing is shown to be detrimental to fish or wildlife habitat." (2190) (1433, 2170)

RESPONSE: Wording similar to this has been added to Managment Area #20 direction.

COMMENT: Local economies are dependent on the range industry and the area has high use for sheep as well as cattle grazing. Increases in range opportunities will help improve and maintain the biological base and provide spin-off benefits in brush control and fire hazard reduction. (49)

RESPONSE: Use of livestock for fuels reduction will be considered in the revision of allotment management plans.

COMMENT: NEPA requires a full range of alternatives, yet there is only a 1.5% difference between the highest (RPA) and lowest (AMN) grazing AUMs in the first decade, and 1.6% difference between the two in the fifth decade. (II-165) (1634)

RESPONSE: The differences between the RPA and AMN Alternatives in the 1st and 5th decades are: 32.5% and 36.9% respectively. The difference between the 1st and 5th decades for RPA is 5.2% and for AMN is 1.4%.

COMMENT: Mono Basin National Scenic Area. Range, aesthetics and grazing: The degradation of the landscape from grazing mismanagement is highly visible. (2170) (1843)

RESPONSE: This will be addressed in the Mono Basin Scenic Area Plan.

COMMENT: The cattle ranching industry provides a large portion of the economic base in Esmeralda County. The restrictive designations in most of the Whites will have a deleterious effect upon a significant number of the cattle ranchers who depend upon summer range in the White Mountains as an essential element in their cattle management programs. (486)

RESPONSE: Grazing will only be excluded from areas designated as important mountain sheep habitat or from areas where other resource values need protection. Wilderness designation does not preclude grazing.

COMMENT: Limited Access Prescription #17. We concur with the direction to not upgrade 4WD roads to 2WD and to obliterate mining roads after they are no longer needed. The Forest should systematically analyze the potential to obliterate or close off other roads in these Prescription areas; there are many that are redundant, poorly routed or constructed, unnecessary or detrimental to wildlife and scenic values. Also, "develop no additional..2WD or 4WD access." Add to the range element: "Reduce grazing if fish or wildlife habitat degradation is occurring." (1617)

RESPONSE: The analysis which you suggest will occur as part of the updating of the 1977 Interagency Motor Vehicle Use map. Roads open for use within this Prescription will be specifically designated as part of the updating process. Routes will be proposed for relocation or elimination where routes are poorly located or duplicated. No additional roads will be available for public use. We have not added your suggested range element. We feel that Forest-wide Standards and Guidelines provide adequate protection of fish and wildlife habitat.

COMMENT: The report indicates that the demand for red meat consumption is expected to increase. However, all recent surveys show a marked per capita decrease in red meat consumption by Americans. (78)

RESPONSE: This statement has been removed from the Final Plan. However, all indications are that the demand for red meat has stabilized and may even be heading upward.

COMMENT: To put the contribution of meat production on Forest Service lands in proper perspective, please include information on the amount of meat

produced on Forest Service lands compared to that produced in California and the U.S. as a whole. (2170) (65)

RESPONSE: Approximate figures are that the Forest Service supports 3% of the red meat production in the nation. In California, it is about 17%.

COMMENT: Wildlife may have a higher economic benefit and return than cattle grazing which benefits very few individuals. (1000)

RESPONSE: Wildlife, particularly harvest species, may have a higher economic value than grazing. However, it is difficult to compare those values. Grazing is compatible with maintaining or enhancing wildlife habitats, and is a valid use of National Forest System lands.

COMMENT: Would like to see a comprehensive analysis of costs and expenses. According to the House of Representatives Report 99-593 (May 8, 1986), public lands grazing is one of the most heavily subsidized businesses in the United States. Overall, BLM and the Forest Service charge only 1/5 as much to graze public lands as do owners of private rangelands. In 1985, grazing fees brought approximately $9.2 Million into the U.S. Treasury while grazing programs cost taxpayers about $69 Million. In light of these statistics, I would like to know whether the grazing program on the Inyo Forest is cost-effective, or are we subsidizing the destruction of our land?

The Forest Service is subsidizing cattle ranchers by offering reduced prices for grazing and spending close to $100,000 per year for crews to repair erosion that is often linked to cattle grazing. The Benchmark analysis (DEIS II-14) shows that grazing is an unimportant part of PNV; clearly recreation is the value of this Forest. Grazing is in direct conflict with recreation in that it greatly detracts from the enjoyment of otherwise wild areas. (1548, 147, 1097) (93, 225, 333, 382, 2170)

RESPONSE: We provide grazing to the public as Congress has instructed us to do. Fees are set by Congress or Executive Order; the Forest Service administers those fees accordingly and has no authority to change them. Recently, the President set an interim moratorium on fees until a new fee schedule is determined. Whether grazing detracts from the recreation enjoyment is a personal value judgement. Some people feel it adds to the pastoral scene.

COMMENT: The concept of grazing livestock within a National Forest seems to conflict with stated goals of wildlife habitat improvement, maintenance and the goals of maintenance of viable populations of existing species of native vertebrates and invertebrates. The amount of forage for wildlife needs to be determined. (481, 1634)

RESPONSE: Livestock grazing on the National Forests is a legitimate use. The Forest-wide Standards and Guidelines provide for protection of other resources. In certain areas, grazing management is an available tool to reduce unwanted plants. In some instances it helps reduce fire hazard by

reducing the vegetative cover. There have been many modifications to the Forest-wide Standards and Guidelines for fish, wildlife, riparian resources and range in the final Plan to insure that wildlife and fish habitats are protected.

COMMENT: When range management is in conflict with habitat diversity, riparian areas, watershed, wildlife, and wilderness diversity use, I would like to see that conflict resolved in favor of the non-grazing use. (2036) (319, 333, 2067)

RESPONSE: Standards and Guidelines are used to insure protection of riparian areas and other habitats that can potentially be altered by grazing practices. The Standards and Guidelines for protection of fish and wildlife habitat and riparian resources have been substantially modified. Decisions on grazing versus non-grazing are made in project specific environmental analyses.

COMMENT: Identification and avoidance of unacceptable resource damage and incompatibilities between grazing and wildlife should be a high priority in all Management Areas that permit grazing. (128) (89)

RESPONSE: See range and wildlife elements under specific Management Areas. Identification and resolution of grazing problems will be addressed in allotment management plans.

COMMENT: I find allowing grazing of livestock in our wilderness areas to be particularly disturbing. Mismanagement and overgrazing has resulted in significant alterations of many alpine ecosystems. Grazing is not compatible with wilderness. I recommend that grazing be phased out in order to restore these sensitive ecosystems to their natural condition. Grazing should be eliminated totally on the Kern Plateau. Mismanagement and grazing have turned once high water table lush meadows into dry sagebrush flats dissected by deep gullies continually carrying away the soil which supports such an ecosystem. In the Golden Trout Wilderness, if the grazing practices are expected to compete with the known fawning areas, they should be eliminated from consideration. Watershed and riparian habitat damage should also be very closely monitored to check impact and should be reduced to minimize the effects. (1011, 1222, 1608)

RESPONSE: Congress has provided direction that states grazing is an appropriate use of the wildernesses created after 1978. Therefore, the Forest cannot delete this use from National Forest lands solely because it is wilderness. Where unacceptable resource impacts cannot be resolved through management, the Forest can adjust use or eliminate grazing to fit that particular circumstance. Guidelines for grazing are set so that resource impacts are not allowed to exceed acceptable levels. Refer to the Standards and Guidelines, Prescriptions, and Management Area direction in the Final EIS and Plan. Grazing management problems and resolutions will be addressed in specific allotment management plans. Refer also to the wilderness section of this Appendix.

COMMENT: Areas currently in "unsatisfactory" condition should be eliminated from the accessible range until they are improved to acceptable standards. (1585)

RESPONSE: Primary lands for forage production that are in unsatisfactory condition will be managed to increase their productivity by using appropriate management practices. Sites will be eliminated from livestock grazing as a last resort if other management practices fail.

COMMENT: In many areas on the Inyo, active erosional processes in wet meadows have been accelerated and aggravated by grazing. In areas such as Sage Hen, Rawson, Golden Trout, McMurry Meadow, Coyote Plateau, the region east of Crowley Lake, Monache and Tunnel, the White Mountains and Horton Creek, grazing clearly conflicts with water quality, fish, wildlife and soil protection. There is a need to significantly improve rangelands through rehabilitation and by decreasing the AUMs on the Forest. The Plan does not address specifically how the already overgrazed and damaged areas on the Forest are to be restored. (484, 1800) (78, 232, 1223, 1730)

RESPONSE: Soil and fisheries restoration have been ongoing since the 1930's. Hundreds of thousands of dollars have been spent on these projects, and more are planned in the future. About forty years ago, numbers of livestock were reduced to approximately the present day levels. On the whole, these levels have proven to be adequate to prevent adverse environmental impacts. Standards and Guidelines, Prescriptions and Management Area direction will be used to establish management direction for these areas. These will be implemented through allotment management plans. Grazing, overall, will not be increased on the Inyo Forest and ecologically sensitive areas will be protected.

COMMENT: Oppose any increase in Forest-wide stocking rates. The range is generally in poor to fair condition, most meadows are badly damaged and riparian areas suffer from current grazing levels. How can the Inyo National Forest justify increasing AUMs when these conditions exist? (1108)

RESPONSE: Proposed direction in the FEIS and Plan will recommend maintaining the current AUM allocations. Management for livestock grazing will be addressed for individual allotments using allotment management plans.

COMMENT: There should be no range emphasis management areas at the expense of other resources. Certainly no increase in AUMs can be allowed when range conditions are so poor. Reduction or elimination of grazing must be an alternative that is considered where appropriate. The Plan must also include schedules of AMP review and revision, along with condition of range in the allotment, whether range improvements are being maintained, etc. Utilization standards need to be included in the range section of the Plan. Specifically, the following grazed areas desperately need corrective prescription: Cottonwood Creek (White Mountains), Coyote (in general), McMurry Meadows, Kern Plateau, Trail Canyon (White Mountains), Bohler Canyon, Parker Bench, and Glass Mountain. (1565)

RESPONSE: The Forest-wide Standards and Guidelines for fish, wildlife, range, and riparian resources have been substantially modified to provide more specific direction. Allotment management plans will be prepared for specific allotments to insure that management direction is followed. Utilization standards have been derived through research and testing over the years. Where appropriate, we will use direction applicable to other Great Basin Forests, developed by the Intermountain Region. A schedule for AMP update will not be included in the FEIS or Plan, but will be developed following implementation of the Plan. These schedules will be handled on the Ranger Districts. At present, the Region is prioritizing a list of allotments based on their management needs. This will give the Inyo Forest a basis for prioritizing Forest allotments for AMP updating.

COMMENT: Another reason AUMs should be decreased on the Inyo concerns the problem of aging bitterbrush. The Plan and DEIS plainly state that the acreage of bitterbrush forage will continue to decrease over time as stands age faster than acres are treated. This implies that the Forest-wide AUM carrying capacity will decrease over time. Why are there not commensurate reductions in AUMs? (1108) (225, 382, 1099, 1565, 2213)

RESPONSE: The reason for the anticipated decline in bitterbrush stands is due to these stands becoming decadent and the resulting decline in associated plant productivity. This does not necessarily correlate with livestock grazing of this species. Improvement projects are planned to help rejuvenate bitterbrush on the Forest. Guidelines are also set that limit use by livestock. One successful method for maintaining stands of bitterbrush is pruning. This has been successful in other states (Utah) and on test plots on the Inyo. If done properly, grazing can be used as a tool to prevent bitterbrush from becoming decadent.

COMMENT: "Livestock trampling and chiseling should not exceed 10% - 20% (depending on fishery status) of any given stream reach" (Plan IV-22) and yet the amount of earth disturbance permitted within any 100 meter reach is only 3-10%. What is the relationship between these terms? I would certainly call "trampling and chiseling" an "earth disturbance"! (1634)

RESPONSE: Refer to the revised Standards and Guidelines in the FEIS and Plan. Land disturbing events need to be limited to 3% of the land area. Land disturbing is defined here as that which essentially denudes the vegetation and other erosion preventing substances. Typically, activities like road building and logging operations fit the land disturbing category. Trampling and chiseling generally leave the vegetation but loosen the soil. Therefore, there is more resistance to erosion than the other processes.

COMMENT: Forest-wide Standards and Guidelines. Under range, add: BMPs for range management. Add to (6): "No grazing permits will be reissued to new applicants (with exception of family transfers) for those areas or allotments which have (a) resource damage as a result of adverse impacts by cattle to soil, water, fish or vegetation and (b) significant recreational, visual, aesthetic, wildlife, or fish values which are substantially impacted by

grazing." Change (9) to: "Restrict all grazing to `range-ready' lands." Other additions:

A. Develop AMPs for all active range allotments and wild horse and burro territories.
B. Insure that water developments and other range improvements meet wildlife needs.
C. Where feasible, locate all range improvement away from travel corridors, especially trails, popular fisheries, and watercourses.
D. Describe ecological sites, develop scorecards (See Toiyabe NF Plan) to rate ecological status and resource values and define management strategies for rangeland management
E. Strive to achieve or maintain a minimum of 60% ground cover on upland....rangelands, with the exception of low sagebrush types, big sagebrush types, pinyon-juniper types and south-facing sagebrush types on granitic slopes of Sierra.
F. Minimize recreation-range conflicts.
G. Achieve or maintain rangelands in satisfactory condition, defined as: (1) having a resource value rating (RVR) of 50 or above for vegetation or other features or being in a mid-succession or higher class ecological status, and (2) having a stable or upward trend.
H. Ensure that permittees maintain structural improvements in accordance with permits.
I. Update AMPs that are not consistent with the Forest Plan, following schedules found in each applicable Management Area.
J. Develop AMPs in consultation with all parties involved, including permittee, state or other federal agencies and any other organizations or individuals.
K. Make sure each AMP presents administrative and management requirements of the specific range allotment or wild free-roaming horse or burro territory, and that each plan contains sections on objectives, actions, monitoring & evaluation.
    1. The action section should include seasons of use, number of livestock permitted, the grazing system, schedule of range rehabilitation, and schedules for initiating and maintaining range improvements. Schedules should include priorities, responsibilities and planned completion dates. The action section should...also include a statement of actions required to allow for other uses and resources and for resolving conflicts.
    2. The monitoring and evaluation section should address actual use by livestock, production and utilization, ecological status and trends and permittee compliance with management requirements.
L. Non-continuous use management systems should be implemented on all livestock grazing allotments. When feasible, a rest rotation system should be used when significant range is in unsatisfactory condition.
M. An annual operation plan should be prepared for each grazing allotment. The annual operating plan should be the action plan that implements management...decisions during the current year. Annual operating plans should be mutually developed by the District Ranger and the permittee(s). The annual operating plan should consist of a narrative and graphics, with the narrative including, where applicable:
    1. Clear and definite instructions concerning management of livestock while on the allotment. This should include the schedule for each

unit to be grazed, expected amount of time each unit will be grazed, allowable forage, utilization, how the livestock will be moved from unit to unit, and standards for livestock removal from the allotment.

2. Range improvement maintenance responsibility for the current year...when the maintenance will be accomplished and the maintenance standards to be attained.
3. A list of range improvement projects to be started or completed during the current year.
4. Any necessary instructions concerning trailing and/or trucking livestock to and from the allotment.
5. Special instructions on camp sanitation and fire prevention responsibilities of permittee.
6. Multiple-use coordination requirements with which the permittee is expected to comply, including animal control practices and compliance with...endangered and threatened species requirements.

The graphics section should include:

1. A map showing allotment and management unit boundaries, range improvement, closed areas and special management situations.
2. Acceptable forms for recording actual use, losses, improvement maintenance and other management data.

N. Priority should be given to range improvement on allotments with a high percentage of land in unsatisfactory condition.

O. Proper use criteria should be established, in writing, for each unit of each grazing allotment. Proper use criteria should be a mandatory part of each AMP...long-term trend studies should also be mandatory to determine if proper use criteria are correct and to determine what is occurring in regard to range condition. Proper use criteria should be developed through ID team input. It is necessary that criteria be based on the factor that becomes critical first: the limiting factor. In some range units or pastures, it may be necessary to establish more than one set of proper use criteria. This is especially true where riparian areas are involved. Establishing proper use criteria requires ID team involvement. Proper use criteria define the permissible grazing level in the range unit or pasture. The following standards should be observed when identifying limiting factors and proper use criteria:

1. Soil and vegetation are the basic resources. The condition of these two resources must be maintained or improved. If they are in satisfactory condition, then they must be maintained in this condition. If they are in less than satisfactory condition, then allowance must be made for improvement in condition. Any use causing a downward trend in condition of these two resources should be modified or eliminated whether caused by livestock, wildlife, or any other use.
2. After requirements for the soil and vegetative resources have been provided, the other resources, such as livestock grazing, wildlife and aesthetics can be considered. This is the point where the ID team is involved. Trampling soil by grazing animals may result in either soil displacement or soil compaction. This effect of grazing may become a limiting factor before the maximum allowed utilization of the key plant species is reached in this situation, the amount of soil displacement or compaction will determine the limit of allowable grazing use rather than utilization of key species.

Proper use guides based on soil displacement should generally state that on steeper slopes, and on loose sandy soils, evidence of trampling should not exceed 10% (light), as determined within sample plots. Usually trampling can be tolerated on slopes of less than 5% and on slopes up to 11-30% with heavier textured soils. Certain stream bank zones may be exceptions. Meadows are most susceptible to compaction. Proper use is defined as moderate compaction or less.

P. No livestock grazing should be allowed for two grazing seasons after prescribed or natural fires and plantings or seedings.
Q. Livestock adjustments needed to obtain an acceptable balance between available livestock forage and livestock numbers and season of use should be completed.
R. The California Dept. of Fish and Game should be notified one year in advance of implementation of revegetation projects.
S. Range improvements should be cost-effective; grazing fees should be raised to cover the cost of administration of grazing and range improvements.
T. No extensions of season of use will be granted unless the range is in "good" (or better) condition, with an upward trend. (2170) (1030, 1565, 1589)

RESPONSE: Many of these comments will be incorporated in the Standards and Guidelines in the final Plan. Items B, C, D, E, G, L, O, P, and T refer to Standards and Guidelines. Most will be included. Items A, H, I, J, K and M deal with AMPs and their content. The direction for these are in our Manual and Handbook System. Also refer to Management Prescription #11 in the Final Plan. The following range element has been added: "Develop Allotment Management Plans (AMPs) in an interdisciplinary manner with public involvement, including permittees, state or other federal agencies, and other interested organizations or individuals.".

COMMENT: In discussion of allocating livestock forage, why is only deer forage requirement considered? Sage grouse, nesting waterfowl, mice, ground squirrels, eagles and hawks (all wildlife) are affected by overgrazing. (1650)

RESPONSE: The main concern for competition for forage has historically centered on large herbivores interacting with domestic livestock because their diets overlap extensively. Concerns relative to other wildlife species are more from a cover and forage quality perspective. Implementation of the Standards and Guidelines should insure that these species needs are met.

COMMENT: It is not certain that range managers on the District level have the skill or will to identify the specific resource damage and implement modifications on allowable grazing. Fishery, wildlife, soils and hydrology professionals should be required to certify compliance with these Standards and Guidelines. (128)

RESPONSE: When allotment management plans are revised in the future, all other resource specialists will be involved in developing management

direction and practices for specific allotments during the interdisciplinary environmental analysis process.

COMMENT: In the section on "range" we request that a brief description of the administration of the grazing program under FSM 2332.2 be provided. (Pg. IV-50). (2190)

RESPONSE: We have included a brief explanation.
COMMENT: Close monitoring of whatever range program exists is absolutely necessary. The present honor system is a disgrace and directly contributes to the present unacceptable range conditions seen on most of the Inyo. (2129)

RESPONSE: The present condition of the ranges reflect the past abuses far more than they show what is presently taking place on these lands. The most obvious problems of gullied watersheds came about in the last century. Present management has contributed to a better stewardship of the ranges than practices on the Forest up until the late 1970's. We have increased our expertise in the range field. Standards and Guidelines for use will set the limits of grazing and AMPs with their annual operating plans will follow up at the field level. In addition, the monitoring requirements for range, wildlife, diversity and vegetation will be used to evaluate changes.

COMMENT: "Improvements" which are intended to improve the forage available for cattle usually are detrimental to wildlife interests. For this reason I hope you will not engage in the two following practices: 1. Natural spring manipulation for the purpose of "developing" water sources; 2. Converting shrublands to "grasslands". Both these practices prove at best to have only short-term success and are invariably detrimental to wildlife interests. (1532)

RESPONSE: When improvements are proposed for the development of the grazing resource, other resource specialists have input into the environmental analysis. Direction in the Plan in the form of Standards and Guidelines, Prescriptions and Management Area Direction will insure that wildlife habitats are maintained. Spring manipulations and shrubland conversions are required to be compatible with wildlife objectives.

COMMENT: Range revegetation. What plant species? Who is going to revegetate? What do you mean by "vegetative mosaic"? Elimination of type conversion Forest-wide. (1634, 2178)

RESPONSE: Revegetation will be done with native species when possible. Exotic species are often used for erosion control on road sides and ski runs as these seem to provide the best control measures. In revegetation projects done to enhance habitat diversity, such as burning, native species will be used. A vegetation mosaic refers to a myriad of vegetation communities and successional stages. This is probably the historical pattern for shrub communities on the Inyo. Fire suppression and livestock grazing resulted in monotypic shrub types. The goal of shrubland management is to achieve historical vegetation patterns. Conversions that change shrub types to

monotypic exotic grass communities will not be done. Vegetation management will be coordinated with other agencies and organizations.

COMMENT: A stipulation should be added that improvements will be made only when benefits are greater than costs. (1634)

RESPONSE: An economical analysis is done on all development projects on the Forest. In some cases, if the cost-benefit ratio is not favorable, then the project may not be done. In other cases the projects with an unfavorable ratio may be allowed to proceed because of secondary benefits that cannot be easily valued. For instance water development could help relieve pressure on one part of an allotment while the cost-benefit ratio could show that it was not a positive benefit. Each case is decided on a site specific basis in the appropriate environmental analysis.

COMMENT: The Eastern Sierra, because of its arid climate and consequent low levels of forage plant life, is not a suitable area for grazing. It is impractical and very damaging to try to meet the National goal for red meat production on National Forest range. The demand for beef continues to decline, reducing the already marginal need for Forest land grazing. The damaging impact of cattle on watershed and wildlife habitat make this an unacceptable use designation. Please eliminate cattle grazing on Inyo Forest lands and allow the slow natural rangeland repair process to occur. (903) (3, 5, 8, 9, 10, 11, 12, 13, 16, 21, 22, 33, 44, 65, 72, 78, 88, 89, 93, 96, 112, 124, 126, 128, 131, 139, 140, 147, 151, 158, 161, 164, 166, 167, 171, 214, 232, 266, 277, 278, 281, 289, 293, 298, 300, 303, 311, 314, 315, 322, 324, 328, 329, 332, 345, 351, 358, 381, 382, 384, 387, 430, 438, 441, 459, 466, 467, 473, 481, 484, 487, 498, 914, 933, 934, 946, 968, 970, 978, 980, 998, 1000, 1006, 1007, 1008, 1010, 1011, 1015, 1021, 1032, 1097, 1098, 1099, 1107, 1108, 1159, 1160, 1162, 1163, 1165, 1166, 1169, 1171, 1176, 1180, 1183, 1185, 1188, 1191, 1195, 1222, 1223, 1224, 1229, 1230, 1231, 1238, 1244, 1248, 1251, 1269, 1273, 1295, 1317, 1326, 1341, 1348, 1349, 1357, 1388, 1399, 1402, 1405, 1407, 1415, 1427, 1431, 1433, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1464, 1471, 1485, 1487, 1513, 1519, 1520, 1521, 1529, 1532, 1539, 1540, 1541, 1545, 1546, 1547, 1548, 1549, 1556, 1579, 1583, 1585, 1586, 1592, 1596, 1598, 1607, 1608, 1611, 1613, 1617, 1630, 1632, 1633, 1634, 1648, 1650, 1653, 1654, 1659, 1660, 1664, 1668, 1670, 1675, 1683, 1693, 1712, 1716, 1723, 1732, 1740, 1743, 1757, 1759, 1773, 1774, 1775, 1780, 1795, 1798, 1801, 1806, 1809, 1836, 1837, 1843, 1845, 1847, 1851, 1858, 1860, 1862, 1863, 1865, 1866, 1871, 1872, 1876, 1883, 1884, 1886, 1893, 1898, 1902, 1907, 1911, 1924, 1925, 1930, 1932, 1933, 1938, 1943, 1952, 1956, 1964, 1965, 1971, 1982, 1983, 1988, 1995, 1996, 2007, 2015, 2022, 2023, 2028, 2030, 2031, 2038, 2045, 2053, 2054, 2060, 2066, 2075, 2091, 2102, 2113, 2124, 2129, 2136, 2137, 2149, 2160, 2169, 2170, 2178, 2183, 2190, 2194, 2210, 2211)

RESPONSE: Congress and the President set up the National Forests to protect the resources as well as provide for their use. This has been incorporated into the foundation of the first reserves and still continues. Grazing is considered an appropriate use of the National Forests. The challenge is to

use it wisely and without undo impacts to other resources. It is neither our responsibility nor our authority to eliminate grazing on National Forest lands. The inclusion of the Forest-wide Standards and Guidelines in the Forest Plan assures us that use will not adversely impact other resource values. AUMs will not be increased on the Inyo during this planning period; they will remain at the current level.

COMMENT: Grazing fees should be raised to fair market value and the revenues produced used to protect wildlife, riparian and other forest resources. Fees should cover administrative costs. Fees should include a factor for yearling grazing. Funding for identification and mitigation of grazing damage should come from user fees. Unless permittees or range managers can conclusively prove that resource damages are not due to grazing, the burden of proof should shift to range, particularly in Management Prescription Areas where range is not the emphasized resource. (1485, 1108, 1349, 128) (89)

RESPONSE: Grazing fees are usually set by Congress. Recently, they were set by the President in an Executive Order until a new fee system is established. The Forest Service cannot deviate from Congressional or Presidential direction.

COMMENT: Livestock grazing should not be allowed along stream riparian corridors and wet meadows unless protection measures such as fences are implemented. (1269)

RESPONSE: Riparian management as stated in the Forest-wide Standards and Guidelines insures that these values will have precedence over other resource uses. Grazing in riparian areas has been shown to successfully coexist with other resources if managed correctly. Several different management techniques exist besides fencing and livestock elimination for grazing riparian areas. Fencing or eliminating livestock will be done if other methods are unsuccessful.

COMMENT: Monitoring and data gathering should take place to see recovery successes and/or failures on the exclosures. (1738)

RESPONSE: Many exclosures have been established specifically for purposes of determining condition or trend. Others may be needed if the Forest does not have representative areas enclosed. Also, utilization measurements are taken to determine use on a yearly basis. Condition and trend transects have been installed throughout the Forest to determine range influences.

COMMENT: Assumptions, Page IV-110. The first assumption is incomplete, in our view, since it fails to mention grazing modification as a potential to improve riparian vegetation. A more realistic assumption would read: "Grazing modification or elimination, rewatering of streams, and watershed improvement have the greatest potential to maintain, enhance, and/or increase riparian vegetation on the Forest." (2190)

RESPONSE: Removal of grazing alone will not result in riparian habitat improvement if gullies or headcuts are present. These will require watershed improvement structures. Modifications of grazing may be required to ensure recovery of riparian habitats. Standards and Guidelines in the Plan allow for reduction or elimination of livestock grazing in riparian areas if other management techniques are unsuccessful.

COMMENT: In both the Plan and the DEIS, you say that in most areas range condition is poor to fair, and in meadows and riparian areas it is poor. We agree that all grazed habitats should be brought up to at least fair condition. But we feel that this statement does not go far enough; the goal should be to bring range lands up to good condition. (1431)

RESPONSE: Forest Service direction states that we will manage to achieve range conditions of fair or better. We will attempt to ensure the perpetuation of healthy rangelands for generations to come.

COMMENT: Grazing in riparian areas is in direct conflict with 36 CFR 219.27, which states that "No management practices causing detrimental changes in water temperature or chemical composition, blockages of watercourses or deposits of sediment shall be permitted within these areas which seriously and adversely affect water conditions or fish habitat." (1634)

RESPONSE: This regulation goes on to state that "Topography, vegetation type, soil, climatic conditions, management objectives, and other factors shall be considered in determining what management practices may be performed within these areas or the constraints to be placed upon their performance. Within the Plan there are Standards and Guidelines that will insure protection of riparian areas. These meet the intent of the CFR. Development of allotment specific AMPs and EAs will be used as a tool to implement direction in the EIS/Plan.

COMMENT: The Plan's present scheme to allow certain percentages of streambank damage before restricting livestock seems unenforceable in practice, particularly with restricted staff budgets. Where riparian zones are so valuable in the Sierra rain shadow, the only effective way to protect them in some cases may be to prohibit livestock use. (117)

RESPONSE: Elimination of grazing in riparian zones is an option that we reserve as the final management alternative. The Forest will continue to monitor the use of riparian areas and change management practices so that the riparian Standards and Guidelines are achieved.

COMMENT: Allotment management plans and Forest permits should be quickly altered to prohibit preventable degradation and require substantive mitigation for activities which unavoidably degrade riparian habitats. (2102)

RESPONSE: The task of updating all management plans is enormous and will take years to complete. It is an ongoing practice now to update AMPs. They

will continue to be updated following implementation of the Forest Plan. The emphasis of the allotment management plans will be to insure that Standards and Guidelines, Management Prescriptions, and Management Area Direction are implemented on-the-ground. Direction in the EIS/Plan will insure that riparian areas will be maintained or enhanced.

COMMENT: Environmental Consequences (IV 39-41). For fish, change paragraph 5 to: "Although overall grazing numbers vary by alternative, livestock grazing in general will be directed to lands located away from riparian areas." (2170)

RESPONSE: Grazing on riparian areas will be consistent with Forest-wide Standards and Guidelines. There will be no increase in AUMs in the Preferred Alternative.

COMMENT: I would love to see the Pizona range designated as a wild horse sanctuary with no further harvests of wild horses being conducted before completion and approval of the Montgomery Pass Wild Horse Management Plan. (124) (105, 184, 1261, 2111)

RESPONSE: The integrity of the wild horse herd in the Pizona area will be maintained using the management plan being developed for that area. This plan will state the objectives for that area.

COMMENT: In developing the Montgomery Wild Horse Management Plan, I feel wild horses should be covered under wildlife. (124)

RESPONSE: Congressional direction gives us the ability to manage the wild horse resource to the fullest extent possible to insure that designated herds remain viable. Forest Service policy places these animals under range management since the expertise to manage them is within that area.

COMMENT: If and when it is proven by a qualified, careful, accurate count that there is a need to start controlling the number of wild horses, I recommend that a temporary sterilization technique be used; not removal of the animals. (124)

RESPONSE: Actual control methods for wild horses are being researched. Current means of controlling numbers are removal of animals via live capture. All methods which are proved to be effective, safe and cost-efficient will be considered.

COMMENT: A CRMP should be used to develop the Montgomery Pass Management Plan. This plan shall decide the level of horses and how they are removed. (1261)

RESPONSE: The CRMP method is being used in the development of this Plan.

RANGE MANAGEMENT

COMMENT: I am supporting the maintenance of a healthy herd of wild horses and burros at a viable herd size of at least several hundred animals. (311) (65)

RESPONSE: Recommended population levels will be determined on the basis of carrying capacity of the habitat.

COMMENT: I am greatly concerned that Prescription #11 will increase livestock in riparian areas which are already seriously damaged by the present levels of grazing, especially in the biologically unique Glass Mountain area. The Plan is vague as to when mitigation measures would be considered necessary. Many areas need protection now. (910)

RESPONSE: The Standards and Guidelines in the Final Plan for riparian resources have been substantially modified. Where necessary, livestock management practices will be altered to meet the Standards and Guidelines.

COMMENT: What are BMPs for range management (Plan IV-27)? I cannot find them anywhere in the document. What is "range-ready"? (1634)

RESPONSE: BMPs refer to Best Management Practices for watershed management. They are guidelines produced at the Regional level by professionals in these fields. Many are being added to the Standards and Guidelines to improve the clarity of the Plan. "Range-ready" refers to the time when a pasture or allotment can be grazed. It incorporates phenology of key plants and soil conditions.

COMMENT: While the Forest Service's own projection of a 24% increase in AUMs from 725 to 900 for the White Mountains (DEIS C-78) under the Preferred Alternative would be marginally acceptable, a realistic assessment of the five decade result would be that of an overall AUM reduction. Using the Forest Service's own description of Management Prescriptions for what comprises at least half of the grazing allotments in the White Mountains, would indicate that these allotments would be either dramatically reduced or completely eliminated by the end of a five decade period, since those allotments would be managed for other priorities rather than range (DEIS IV-75). The other half of the White Mountain allotments will have an immediate reduction in AUMs due to implementation of proposed allotment boundary adjustments as outlined on Plan IV-121 and DEIS Appendix I-1. This would dictate that there is going to be an immediate and continuing reduction in AUMs in the White Mountains under the Forest Service Preferred Alternative rather than their suggested net 24% increase. Why eliminate cattle grazing while paying no attention to the concentrated human use precipitated in those areas by the Crooked Creek Research Station, White Mountain Research Station, and the Patriarch and McAfee RNA areas? (1603, 1919)

RESPONSE: Managing the White Mountains resources other than livestock grazing does not preclude grazing in this area. Standards and Guidelines, Management Prescriptions, and Management Area Direction state constraints placed on grazing. In the Final Plan, no increase in AUMs is planned.

Proper management techniques will be used in the White Mountains to coordinate range management with other resource uses without adversely impacting these resources. Allotment boundary changes should not result in increasing AUMs, as these areas are only marginal for livestock.

COMMENT: The grazing of domestic livestock on suitable range sites should be continued. The utilization of the renewable resource provides red meat production and other by-products with a minimum use of other energy. The grazing management will prevent the build up and accumulation of fuels which can lead to catastrophic fire. (1958) (1157, 1363, 1587, 1881, 1887, 2193)

RESPONSE: Livestock grazing will continue at the present level unless there are significant resource impacts.

COMMENT: Would like to suggest a floating AUM limit, with 39.4 being the base instead of 45.3. During wet years the limit may be increased to 45.3 and during a severe drought reduced to 37.0. (145)

RESPONSE: The Forest Supervisor can, on a yearly basis, change the amount of grazing by permit, to allow for either increased or decreased grazing if environmental factors change the yearly forage production. The Final Plan will not increase Forest AUMs over the current level.

COMMENT: In the Plan you speak of 50% utilization. I see 110% utilization at Watterson Canyon, the Clover Ranch, Casa Diablo, Taylor Canyon, Crooked Meadows, and Big Sand Flat. The Plan does not discuss the time element of harvest, to allow for production of seed. In Taylor Canyon, I see a salt block thrown down on a wet green meadow ten feet from running water. Where to put a salt block is fundamental management. (72) (1628)

RESPONSE: Utilization standards are set on a meadow by meadow basis depending on the condition rating for that area. A strict 50% would not be a valuable guide to monitor use. In some areas, this use could be too high, and in others it could be too low. Grazing systems are designed to allow livestock use at an environmentally acceptable level. Phenological and morphological requirements of specific plant species are considered in the development of a grazing system. The Forest-wide Standards and Guidelines for grazing on riparian areas provide direction for allowable practices in these habitats.

COMMENT: The streams and wet meadows in the Cottonwood Basin were formed without the benefit of cattle grazing, and will endure longer and be of greater benefit to fish and wildlife if the level of grazing is made compatible with resource protection. Tens of thousands of dollars of state and federal funds have already been expended to correct erosion problems in the Cottonwood Basin, much of it in an effort to improve trout habitat. It is unwise to continue these expenditures to correct problems when a major contributory cause of the problem continues. (2190) (2211)

RESPONSE: Grazing is part of the multiple use spectrum of the Forest Service. Standards and Guidelines were modified to insure protection of these habitats.

COMMENT: It is stated that grazing will increase on 1000 to 2000 acres of scattered wet meadows under "some" alternatives, state which alternatives. (Pg. IV-109) It must be assumed that "some" means more than one, which is clearly inconsistent with figures and analysis on Plan IV-144-145 where impacts of grazing on soil resources are trivialized by stating "No new areas will be managed for grazing" for five of the six alternatives. (167)

RESPONSE: There are no grazing increases in the Final Plan. Alternatives that allow an increase would use vegetation treatments in terrestrial habitats to increase AUM capacity. No alternatives assume an increase on riparian habitats.

COMMENT: Although it is stated (Plan IV-144-145) that no new areas will be opened to grazing (except for Alternative RPA), elsewhere the DEIS states that grazing will increase under PRF (9% increase) and CEE (12% increase). The reader must assume that more animals will be placed on currently grazed parcels since no new areas are opened. However, increasing the intensity of grazing has consequences for soil and other resources. Such impacts should be analyzed. (167) (2213)

RESPONSE: In the Final Plan, the goal will be to maintain existing AUMs by improving management. No increases are being proposed.

COMMENT: Figure IV-20 (DEIS IV-77) shows that suitable rangelands will be added to allotments for all five of the action alternatives. Again, this directly conflicts with statements on pages IV-144-145 that no new areas will be managed for grazing under all alternatives except RPA. (167)

RESPONSE: No additional rangelands are being proposed for grazing. Existing ranges will be improved by vegetation treatments such as burning and seeding. This will result in an increase of forage, and potentially more AUMs. No increase in AUMs is being proposed in the Final Plan. Vegetation treatments will be done to maintain AUMs and will be coordinated with other resource needs such as wildlife.

COMMENT: We cannot understand how the Inyo Forest can assume that removing the current grazing pressure would not decrease the erosion rates (DEIS III-82). (2183)

RESPONSE: The accelerated erosion will continue until such time that a barrier to erosion is encountered. At present there are areas that are eroding precipitated by some historical event. Until the erosional forces encounter either a natural or man-made barrier, it will continue at the present levels with or without grazing. For the most part, the erosion

contributed by the present day grazing use is small compared to the natural erosion rate and the acceleration from past events.

COMMENT: Forest Service regulations require that the Plan must contain specific measures to rehabilitate lands in unsatisfactory condition (36 CFR 219.20). Reductions and other constraints on grazing in these areas should at least be analyzed in the EIS. It is outrageous that no reductions are considered even under the "amenity" alternatives. (1649)

RESPONSE: Forest-wide Standards and Guidelines, Management Prescriptions, and Management Area Direction were developed in part to provide guidance to management of habitats for livestock. Direction does not preclude reduction or elimination of allotments. Direction does provide constraints on livestock grazing impacts. Grazing management practices may be modified during allotment management plan development or revision. If grazing practices cannot be accomplished within acceptable environmental limits, then reduction or elimination of AUMs will result.

COMMENT: What is meant by the term "unacceptable damage" to soil, water quality, and fish and wildlife habitat? This term is used quite extensively throughout the document. It is subject to debate and should be defined. (29)

RESPONSE: Unacceptable limits are determined by interdisciplinary environmental analyses and interpretation of Forest Service policy and federal regulations. The Forest-wide Standards and Guidelines have been modified and, in some cases, more specific information has been added.

COMMENT: Figure IV-30 on page IV-116 shows that vegetation manipulation for range and wildlife will increase under five of the six alternatives. The Forest Service should generate separate figures for range and wildlife. At present, it is impossible to tell how impacts on sensitive plant habitat are affected by programs supporting domestic livestock grazing versus programs supporting wildlife. (167)

RESPONSE: Strict Standards and Guidelines for sensitive plants are included. Projects that include habitats of sensitive plants will be inventoried for populations and evaluated in the EA process. Monitoring guidelines state that until species management guides are developed for specific sensitive plants, no alteration of known populations will be permitted.

COMMENT: On Plan V-7, in the "Standard of Comparison" column of range forage improvement activity, up to 50% deviation is too large. Use 25% maximum to avoid undue stress upon vegetation before appropriate action is initiated. By then it may be too late. (1431)

RESPONSE: This is specifically related to browse release projects, primarily bitterbrush. If the results of the project vary more than 50% from the predicted output, then we will reevaluate reasons for this deviation. In

browse releases, variability of results is expected to be high and are dependent on several factors, such as form class prior to treatment, climatic factors, treatment method used, and species treated. Monitoring will be an important facet of these projects.

COMMENT: General references to proposed rangeland improvement acreage are not detailed enough for the public to assess their adequacy. (1107)

RESPONSE: At the Forest planning level, the locations and types of treatments are not meant to be specific. The FEIS/PLAN provides general direction on the acceptability of treatment projects. Project level environmental analyses will be done prior to vegetation treatment that specify locations, acreages, and treatment types.

COMMENT: A fundamental defect of this Forest DEIS under NEPA requirements is an inadequate range of alternatives in the treatment of rangeland. There were no alternative proposals to significantly reduce grazing below existing levels, especially where overgrazing has damaged rangeland conditions. Failure to consider a reduction in grazing is a violation of NEPA. (1617) (123)

RESPONSE: There is a reduction of 6.6% between the CUR and AMN in the 1st decade and an 18.3% reduction between PRF and AMN in the 1st decade. There is a 7.9% reduction from the CUR to the AMN in the 5th decade.

COMMENT: Grazing of all sheep should be eliminated immediately. (1471) (1579)

RESPONSE: Grazing of livestock is determined by several factors including topography and forage type. If the forage can be better utilized by sheep, then it is allocated as such. Since we are a multiple use agency, we cannot deny uses that are compatible with the regulations and policies under which we operate.

COMMENT: Regarding "range management practices that prevent cattle from affecting specific fawning areas." I could not find discussion of what these practices are anywhere in the document. Even in Management Prescription #11 (Plan IV-72), there is no mention given to deer. Please be more specific. (1634) (1638, 1649, 2083, 2100, 2115, 2170)

RESPONSE: The section cited provides general information relative to reducing grazing effects on fawning areas. We have added more specific direction to the Standards and Guidelines, Prescriptions and Management Area Direction. These provide direction for domestic livestock grazing in relation to important fawning areas.

COMMENT: On Plan IV-56, grazing should be eliminated on key deer winter and summer range, migration routes, holding areas and fawning areas. (1634) (1649)

RESPONSE: Strong management direction exists in the FEIS/Plan that emphasizes retaining the quality of important deer habitats. If livestock grazing reduces the quality of these habitats, then modification of grazing systems and reduction or elimination of livestock numbers will be evaluated.

COMMENT: The range emphasis prescription should clearly state that (1) wildlife values are to take precedence over livestock needs and (2) if mild mitigation (e.g., delaying grazing) does not stop...degradation and improve range conditions significantly, then livestock numbers will be reduced or eliminated. (2170)

RESPONSE: Management Area Direction and Prescriptions give the emphasis to those resources identified as important in those areas. Standards and Guidelines provide direction that is applied on a Forest-wide basis. Direction provided by these sources give priority to important wildlife values.

COMMENT: Range emphasis is not the best designation for any part of the Mono Basin Scenic Area. Grazing has severely degraded Upper and Lower Horse Meadows, which are prime wildlife and recreation areas. Livestock range "improvements" (irrigation) have caused severe gullying of the meadows and high mountain slopes; sheep have devastated riparian growth; sage lands, meadows and streamside vegetation along Walker, Parker and Rush Creeks are heavily overgrazed; streams are seriously polluted; fine, ashy soils are severely trampled and have lost moisture-holding capacity; large areas are completely barren of vegetation; irrigation ditches and parts of streamcourses are only periodically or seasonally watered, allowing insufficient time for riparian vegetation to become established before concentrated grazing. The areas just mentioned are important migration corridors and transition areas (and probably used as fawning areas) for mule deer. It is obvious that impacts such as these, at the very least, do not add anything to the scenic aspects of the Basin, not to mention the degradation of wildlife and recreation values. A far more reasonable designation for these lands would be as Limited Access, with emphasis on wildlife, riparian and dispersed recreation values. (2170) (54)

RESPONSE: The uses of the Scenic Area will be addressed specifically in the Mono Basin Scenic Area Plan. Nearly all of the lands mentioned are private.

COMMENT: Prescription #11 - Range Emphasis. Inasmuch as the documents themselves recognize the impact of livestock grazing on other resources, it is imperative that the Range Prescription include wildlife, fisheries, water quality and riparian elements. Include the option to reduce or eliminate grazing to protect these resources. Additionally, any range improvements need to be analyzed for their impact on fish and wildlife habitat. Those found to be impairing should not be authorized. The CDFG has identified

areas intended to be managed under the range emphasis that are critical deer habitat. Boundaries of range emphasis areas need to be adjusted accordingly. (2169) (104, 138, 1565)

RESPONSE: Areas where grazing is emphasized are also subject to the application of Forest-wide Standards and Guidelines. These provide strong direction for insuring the protection of riparian, fish, wildlife, sensitive plants, and water resources. Direction has also been specifically added to this prescription that addresses wildlife values.

COMMENT: Prescription #11 - Range Emphasis. Increased AUMs should be allowed only when it is clear that such an increase will not be at the expense of other resource values. The following wording should be added:

A. "Allow livestock to utilize up to 50% of available palatable forage within 1/2 mile of water developments, so long as wildlife habitat is not adversely impacted."
B. "Rejuvenate and type-convert suitable range to increase forage production or to maintain forage production at high levels, but only after a determination is made that wildlife habitat will not be degraded."
C. We suggest that a wildlife element be added stating "consider the potential effect of any range improvement project on fish and wildlife habitat. Authorize only those that are not detrimental." Some of that area designated as "Range Emphasis" has been shown by recent research to be critical for deer. Our map shows changes we believe should be included as the Preferred Alternative. (2190)

RESPONSE: In the Final Plan, no increases in livestock grazing are planned. In addition, the recommendations provided above are embraced in the Standards and Guidelines, Management Prescriptions, and Management Area Direction of the Plan.

COMMENT: Limited Access Prescription: The range element would better protect wildlife habitat if it were changed as follows: "Allow range enhancement activities to the extent they are compatible with recreation and wildlife objectives; and modify or eliminate grazing if it can be demonstrated that fish or wildlife habitat degradation is occurring." (2190) (2170)

RESPONSE: Refer to the Standards and Guidelines for range, riparian and fisheries which have been substantially modified. If changes in livestock grazing practices cannot alleviate habitat degradation, then reduction or elimination of livestock will be considered.

COMMENT: We would like the adopted Plan to recognize that the per capita consumption of beef is in the range of 70 to 78 pounds per person per year. This level of consumption has remained consistent over the last eight years. When you consider the dramatic increases our population will experience in the future, this figure strongly demonstrates the need for substantial increases in beef production. (265)

RESPONSE: All indications are that the demand for red meat has stabilized and may even be heading upward.

COMMENT: The wild horse and burro population should be reduced to the minimum required by the 1971 Act concerning wild horses and burros. (1030) (158)

RESPONSE: Herd plans will specify population levels commensurate with the carrying capacity of the habitat.

COMMENT: This area (Pizona) is well known for wild horses and provisions should be made for those who want to view these animals. It is also an important hiking and equestrian area and recreation is not extremely limited. There are many more than 150 wild horses in this area, but the numbers should not be limited just to the number that is stated. (1260)

RESPONSE: Specific direction for management of this herd will be developed in the wild horse management plan.

COMMENT: In Pizona, consider restricting access by ORVs during the foaling season. (1261)

RESPONSE: This comment will be forwarded to the team working on the wild horse plan.

COMMENT: The Forest Service should ask the Fish and Game to prevent mountain lion hunting in the area until the effects of the lion on wild horse population dynamics are established. (1261)

RESPONSE: The Forest Service is responsible for the viability of the horse herds which are designated wild. To the extent possible we manage herds to maintain a viable population of wild horses. Fish and Game is responsible for determining hunting. We will continue to work with Fish and Game to insure that viable populations of wild horses are maintained, including considering the effects that mountain lion removal will have on horse populations.

COMMENT: The herd plans are not necessarily adequate (III-23). Any plan that allows for removal and destruction of wild horses is inhumane. Only adoptable animals should be removed. (1261)

RESPONSE: The need to control the wild horse populations is inherent in the fact that these horses have few, if any, natural enemies. Without removing animals, they can over-populate their range and destroy the natural resources they require to survive (i.e. forage, water sources). The Wild Horse and Burro Act allows us to remove animals to keep the level of the herd at its

optimum. We do not plan to destroy any animals unless it is for humane reasons. All avenues providing adoption of horses will be pursued.

COMMENT: The statement that the Montgomery Pass herd has more animals than it can support in the long-term is wrong. You should delete this sentence, or change it to "the Montgomery Pass wild horse territory's wild horse allotment shall be determined in CRMP Plan." (1261)

RESPONSE: Range capacities are used to determine whether there are adequate resources available in an area to support a herd and to what extent it can be supported. Information at hand indicates, that to achieve our objective for proper management of all resources, the herd must be reduced.

COMMENT: Management Area #6 - Pizona. The grazing allotment in competition with the wild horse management plan should be withdrawn and eliminated. (1608) (2111)

RESPONSE: The grazing allotment has been a part of the management of the Forest for nearly one hundred years. The wild horse herd is comparatively recent. Since we still manage the Forest for multiple uses, we plan to keep the allotment for grazing. The wild horse plan will alter the practices so that the horses are able to maintain a viable population. If the two uses can coexist, then there is no need to eliminate the domestic livestock.

COMMENT: Range improvements should be increased in the White Mountains. Primary emphasis should be in control burning which would improve forage production. (2171)

RESPONSE: Control burning is just one of the tools of range management that will improve forage. Site specific plans or environmental analyses will address the effects of various forage improvement methods.

COMMENT: Management Area #18 - Inyos. How can grazing on Harkless Flat or Cowhorn Valley possibly be a paying operation when it requires the hauling of water? It appears that these permits may be used to represent phony values. I question whether grazing in the Side Hill Spring area is justified. (134) (986, 1279, 1617, 1629, 2170)

RESPONSE: The question is not whether the Forest Service feels it is economical, but whether a grazing operator does. If there is forage that can be utilized without detriment to other resources, then we have the option to graze in that area. The portion of a permittee's operation which is on National Forest System land may be only a part of that ranchers total operation. It may not be a "paying operation" when standing alone.

COMMENT: I urge that Joshua Flats (of the Inyos) never be desecrated by cattle. (358)

RESPONSE: Joshua Flats is not on the Forest.

COMMENT: Range Issues and Concerns (Plan II-11-12). Issues and concerns are not well enough defined; for example, there is no mention of: (1) how much range area is in unsatisfactory condition; (2) the need to improve range in unsatisfactory condition; (3) overgrazing except of riparian areas and key wildlife wintering and fawning areas; (4) reducing number of livestock to improve range. In addition, it is totally unacceptable to have a Forest objective such as "The grazing program would not be reduced or prevented from increasing as a result of the issues above" (i.e., overgrazing, unsatisfactory range condition, etc.). (2170) (1617)

RESPONSE: All of the issues raised in this comment are found in the content of the EIS and Plan. Issues and concerns in this section are addressed from a general perspective. Specific information is located in the Affected Environment, Environmental Consequences and other sections of the EIS and Plan.

COMMENT: Forest Goals, range. Add: "If any range is in unsatisfactory condition, the adjusting of livestock numbers must be considered as an option to improving the unsatisfactory condition." Also, if there are no reliable figures indicating that forage yields are actually being sustained within carrying capacity, the phrase "A sustained yield of forage is provided" should be removed. (2170)

RESPONSE: The Forest Service already has a policy that considers all options for management. These will be pursued in the specific allotment management plans or environmental analyses.

COMMENT: The President, with his revised statement of policy which accompanied the 1980 RPA Program, directed the National Forests to meet their proportionate share in the increasing demand for range grazing by increasing AUM usage on the National Forests by 46% in the next 5 decade period. The PRF Alternative's predicted 9% increase does not even come close to meeting this mandate. The decadence of existing range due in large part to fire suppression policies, the lack of prescribed range treatment programs and the overall direction or lack of range management under the PRF's preponderance of special usage Management Prescriptions will eventually result in a total AUM reduction, not the predicted increase. (2170)

RESPONSE: The 46% increase was mandated by Congress after RPA review, and each agency was expected to provide its fair share of the increase. In Region 5 of the Forest Service, the 46% was apportioned out amongst all the Forests with some receiving more, some less, and some right at 46%. A Forest did not have to select the RPA figure as their Preferred Alternative. The level of AUMs shown in the Inyo's Final Plan is based on the level the Forest can support while managing for all other resources.

RANGE MANAGEMENT

COMMENT: Maintain our current AUMs on Coyote and McMurry Meadows. (1019)

RESPONSE: Direction will be determined by grazing management practices and the needs of the other resources in the area. Site specific AMPs and environmental analyses will determine the actual numbers and AUMs.

COMMENT: Trail driving of sheep at any time should be eliminated immediately. (747)

RESPONSE: Trail driving of sheep is one option for moving animals to their range allotments. Trailing is done if there is enough forage to graze on the driveways and if there are no unacceptable effects on other resources.

COMMENT: The Preferred Alternative should include the prohibition and elimination of grazing livestock in sensitive areas and in areas popular with recreationists. Allotment management plans have not accomplished this, and should not be relied on to do so in the future. (167)

RESPONSE: The purpose of the allotment management plans are to implement direction in the Final Plan and EIS using a range of management methods. If these are unsuccessful, then reduction or elimination of AUMs are acceptable alternatives. If livestock management can be coordinated with other resources in sensitive areas, then elimination of AUMs is not warranted.

COMMENT: It is felt that the Nevada portion of the White Mountains horse herd should be reduced to less than 40 horses and maintained at that level. (282)

RESPONSE: The wild horse plan will address population goals based on the carrying capacity of the habitat coupled with other resource uses.

COMMENT: Grazing impacts are not affected by Mono Basin Scenic Area borders, as neither wildlife or livestock are confined by abstract boundaries. Seasonal use patterns typically move livestock in and out of the Scenic Area from adjoining federal and private lands. Uplands which sometimes serve as early staging areas for deer are generally severely overgrazed and have their riparian areas devastated. This, of course, contributes to widespread water pollution problems in Scenic Area watercourses. It is no secret that riparian areas throughout the Basin have received concentrated grazing abuse; up to now, there has been virtually no protection for wildlife or human uses for these areas. Hopefully, the Plan will correct this situation. (2170)

RESPONSE: Grazing within Mono Basin Scenic Area will be addressed in the Scenic Area Plan. Outside of the Scenic Area, direction in the form of Standards and Guidelines, Management Prescriptions, and Management Area Direction identify constraints on livestock grazing to maintain the integrity of other resource values.

RECREATION

COMMENT: Permit fuelwood gathering for recreation use only in Management Area #10. (1099)

RESPONSE: General fuelwood cutting is not allowed in the Red's Meadow portion of Management Area #10. Down wood is available for recreational users to utilize. Because of the large size of the red fir in the area and the volume available as a result of hazard tree removal or windthrow, special permits have been allowed in the past for commercial woodcutting which removes the trees that would not be utilized by recreationists. The rest of Management Area #10 is wilderness and woodcutting would not be allowed.

COMMENT: Pursue legislation to change administration of the Devil's Postpile from the National Park Service to the Inyo National Forest. (1099)

RESPONSE: The Forest Land Management Plan is a tool to provide direction for management and administration of public lands under the jurisdiction of the Forest Service or the Department of Agriculture and does not apply to the National Park Service and the Department of Interior. Any recommended changes in land jurisdiction between agencies would be accomplished through different political processes that would result in Congress passing legislation authorizing such a change. It is not in the scope of the Forest planning process to recommend such a change.

COMMENT: We feel that expansion of the recreational areas is vital, not only to the local economies, but vital for the outdoorsman as the use of the current recreational areas is increasing rapidly. Please consider expansion for all of us. Development should provide access to, not through, places of public interest. (1395) (83, 129, 158, 334, 947, 933, 977, 985, 998, 1099, 1258, 1323, 1421, 1432, 1586, 1595, 1604, 1775, 2016, 2095, 2169, 2190)

RESPONSE: The Preferred Alternative concurs with this viewpoint as it proposes constructing most of the potential sites in the Forest inventory. Many of these sites would consist of day-use facilities and interpretive sites along with approximately 1200 overnight camp units.

COMMENT: Recreation needs to be kept in line with other resources. Add the phrase "... while other resource values are maintained or improved" to the recreation goal. (1532) (65)

RESPONSE: As the intensity of recreation use and development increase, it becomes difficult to maintain and/or improve other resources across the board. Emphasizing one resource usually means de-emphasizing another resource in a particular area. If the above statement were to be added to the direction it would preclude any form of intensive recreation development. None of the concentrated recreation zones could exist. There are many other ways to protect or maintain other resource values in relation to recreation activities. An example is the user quota systems placed on most wilderness

areas on the Forest. Another is controlling use through identified capacities in developed sites.

COMMENT: The primary benefit of this Forest is for recreation rather than commodity production. Therefore, the emphasis in the proposed plan should be for wilderness, dispersed recreation and alpine skiing. While the Preferred Alternative (PRF) appears to be a good point of departure, attempting to balance the various demands on the limited resources of the Forest. I feel the Final Plan should place greater emphasis on those areas I just mentioned. These uses do not conflict greatly with each other. Wilderness and dispersed recreation are generally compatible while wilderness, developed recreation and alpine skiing each occupy different areas. (76)

RESPONSE: The Final Plan will emphasize both wilderness and dispersed recreation to a greater extent than the Draft Plan. Areas proposed for wilderness have been increased, particularly in the White Mountains. Dispersed recreation has become the management emphasis for both Management Prescriptions #16 and #17. Alpine skiing potential will be expanded by the addition of the Hartley Springs area to the list of those areas for future study. In relation to the above emphases, timber production will be maintained at reasonable levels although the emphasis west of U.S. 395 has been modified from high level timber management to uneven-aged timber management to recognize the recreational, wildlife, and watershed values of the area.

COMMENT: Some of Inyo's wilderness should exist for its own sake and not for the recreational convenience of the public; I would advocate that in some areas no trail maintenance or signing be done in order to let the area revert to a truly undisturbed state. I'd even like to see no new trails on the Forest. We should be selective about which damaged trails are restored. (1795, 2207)

RESPONSE: The existing management plans for wilderness will become part of the Forest Plan. Direction in these approved plans call for managing existing trailless areas as such. Signing is approved only for important intersections and for progressive travel. Any plans for reconstructing trails are analyzed as to the need for improvement versus leaving them as they are. Such things as resource damage and public safety are important factors in that determination. No new trails are planned in existing wildernesses and any new trails in future wilderness would be carefully examined in accord with the NEPA process.

COMMENT: The County concurs with the dispersed recreation management emphasis, but would discourage the expansion of day-use amenities at the expense of permittee housing near community areas. (1638)

RESPONSE: No connection is made between day-use activities and permittee housing (recreation residences). The Forest Plan does not identify where there is a conflict nor what the resolution would be. The policy on the Inyo would consider termination of recreation residence permits when the site

would be needed for a developed facility (overnight or day-use) that would provide for a higher public recreation use. Exceptions would be isolated cabin sites that no longer serve their original purpose or are not compatible with current management that has changed because of legislation or a change in land classification such as wilderness. Generally, open space needs along critical use zones such as streamcourses and lakeshores can be resolved through modification of permits or the adjustment of facilities to better accommodate the public.

COMMENT: Management Area #5 - Glass Mountain. Encourage development of the Mono Mills Interpretive Site. Strongly disagree with developing an automobile tour of volcanic features; people should not be encouraged to spend more time in their cars. Maintain Hartley Springs without water; there are far too few of these semi-primitive camping facilities left. (1616) (129)

RESPONSE: The chain of geologic/volcanic features stretching from Mammoth Mountain to the islands in Mono Lake and Black Point are very significant and highly visible with almost unlimited interpretive potential. With the recent seismic activity and its link to volcanic activity, this chain of features becomes highly desirable to interpret. The chain stretches over thirty miles and would be difficult to interpret without involving the auto. A slow interpretive driving tour on back roads as an alternative to traveling U.S. 395 is an attractive recreational activity with many possibilities and options. It will tie in nicely with the visitor center and major interpretive orientation of the Mono Basin Scenic Area. We recommend that the direction for the interpretive auto tour remain; however, development of the tour and interpretive program would go through the environmental analysis process.

We have changed and added some wording in the recreation direction for Management Area #5 in response to your comment.

COMMENT: Management Area #12 - Concentrated Recreation Area. Under protection, I recommend that no future developments be permitted within 100 feet of a watercourse. (1433) (2169, 2190)

RESPONSE: The protection category covers wildfire and pest management. It is not intended to list protective measures for all other resources. The Standards and Guidelines for developed public recreation directs us to construct and maintain facilities and sites to Regional standards. One of these standards directs us not to construct any new facilities within 100 feet of watercourses. This does not apply to such facilities as docks, paths, trails, signs, bridges, and other facilities that serve as a protective means to accomodate use and protect the water-oriented resource.

COMMENT: The Forest Service Preferred Alternative allows more destruction by increasing summer and winter recreation opportunities for Southern Californians. Recreation should be de-emphasized and the intrinsic value of the land emphasized! (334) (65, 104, 121, 170, 988, 995, 1629, 1632, 1634, 2016, 2038)

RECREATION

RESPONSE: One of the major resource values of the National Forest system is the broad range of recreation activities and opportunities available to the general public whose land the Forest Service administers. The Inyo Forest has both valuable recreation resources and many outstanding resource values. Being only a five hour drive from 15 million people, the Inyo is an attractive destination for millions of recreationists a year. There is a limit or capacity beyond which the resource cannot be maintained without serious environmental consequences; however, there are still many opportunities on the Inyo to provide for the needs of the recreation user. The Inyo National Forest has reduced and controlled recreational impacts a great deal in the last twenty years. Major destructive impacts to the riparian zones caused by uncontrolled use patterns have almost been eliminated. The Plan allows for increased use while maintaining and protecting those other valuable inherent resources.

COMMENT: We note that the Plan emphasizes the continued reliance on the shuttle bus system for the Red's Meadow/Devil's Postpile area. We support the continued operation of this system at its present level to minimize parking congestion and traffic problems on the road. Cooperate with the National Park Service to maintain joint management of the shuttle bus system. (487, 1099)

RESPONSE: We have added the following statement to the Recreation direction for Management Area #10: "Continue to coordinate with the National Park Service to share administrative and fiscal responsibility for the existing shuttle system."

COMMENT: Management Area #7 - Upper Owens River. The first item under recreation calls for developing a recreation composite plan. This should be included in the list in Appendix A. Also, in Appendix A, consider adding Whitney Portal/Lone Pine Creek, Big Pine Canyon and perhaps other areas to the list of needed composite management plans for concentrated recreation areas. (1359)

RESPONSE: Composite management plans to be prepared in the first planning period are proposed only where there is to be significantly increased development. The areas listed are complex recreational areas that are expected to produce most of the increased RVDs or require major rehabilitation in the next ten years.

Lone Pine Creek, Big Pine Canyon, Pine Creek, Rock Creek, McGee Creek, Convict Lake, and Independence Creek as well as many other areas of recreation development do not require composite management plans at this time because little or no development is proposed that would change facilities and use patterns in the area; the concentrated recreation zone is considered fully developed and adjustments to the overall use patterns and facilities would be considered minor; or the area affected is related to a simple or singular recreation facility that would not require a composite management plan to develop.

COMMENT: The local economy of our two counties is highly dependent upon the recreational visitor and, to some degree, the extraction of natural resources from the forests, such as timbering, grazing and mining. In 1985, over $350,000 was returned to Inyo County for school and road purposes from the recreation and timber receipts collected on the Inyo Forest. The preferred alternative provides for additional recreational use of the Forest beyond that which is presently existing or provided for in the current alternative, and this the planning department does support. Inyo County would benefit in a proper proportion if perimeter development were allowed to continue at a rate which is consistent with the growth of the recreational needs of the public. Some of these multiple uses, especially skiing, generate substantial revenues that are badly needed to maintain and manage our National Forest. (135, 402, 981) (304)

RESPONSE: Specific development proposals will be evaluated in a project level environmental analysis. A major ski area proposal would trigger an environmental impact statement which would consider environmental constraints, economics, demand, supply, infrastructure and other factors.

COMMENT: If you wish to develop the area for summer use, please consider water sports such as sailing, swimming, boating, and fishing. (2154)

RESPONSE: Most potential for water sport development has taken place; most lakes accessible by roads on the Inyo Forest are considered fully developed. The two exceptions are Walker Lake and Grant Lake. Recreation direction for Management Area #3 calls for developed day-use facilities and parking for Walker Lake. This development could be facilities that would be oriented towards fishing, boating, and some sailing. At Grant Lake, there is potential for increased overnight camping facilities as well as facilities oriented towards swimming, sailing, boating, fishing, and possibly limited water skiing. Recreation direction for Management Area #4 calls for the development of a recreation composite plan that would fully inventory, coordinate, and program the recreational development for the June Lake Loop which would include the Grant Lake area.

COMMENT: Please consider extending the concentrated recreation area designations along Walker, Parker and Rush Creeks to the Scenic Area in order to increase recreational use of these areas, and to help recover degraded riparian and wildlife habitat. (1638)

RESPONSE: The area mentioned above is outside of the Forest boundary; it is Los Angeles Department of Water and Power land. The land is wide open, consists of many wet meadows and has very little capability to accommodate recreation use or development.

COMMENT: Please add the following recreation directive: "Coordinate major recreational expansions or improvements with the Long Valley community." (1638)

ALPINE SKIING

RESPONSE: The Rock Creek drainage, McGee Creek drainage, and Convict drainage are the major recreation areas in the vicinity of the Long Valley community. These drainages are basically considered fully developed and no

major recreational expansions or improvements are proposed for any of them. The only impacts will be minor changes in existing use patterns or rehabilitation of existing sites. If expansion were proposed beyond the first planning period, the development of a composite plan would include local public and community involvement.

Alpine Skiing

COMMENT: 32,000 SAOT is a reasonable figure with adequate buildout of both June and Mammoth Mountains. I support the approved development of Mammoth Mountain to 24,000 SAOT and of June Mountain to 7,000 SAOT. I also support the possible development of Sherwin Bowl to 8,000 SAOT, conditional on the outcome of an environmental impact study. The potential growth of alpine skiing on the Inyo National Forest realistically could reach 60,000 SAOT in the future. Please consider eliminating the proposed maximum SAOT limit in favor of a more flexible system which would allow for the continuous growth of the sport of skiing. (400, 158, 2048, 1311) (56, 91, 122, 183, 205, 267, 271, 273, 367, 369, 372, 377, 384, 402, 403, 404, 420, 432, 469, 481, 907, 919, 923, 939, 958, 972, 1006, 1180, 1184, 1188, 1201, 1225, 1227, 1235, 1241, 1244, 1258, 1260, 1261, 1268, 1285, 1313, 1319, 1325, 1329, 1334, 1340, 1341, 1353, 1371, 1389, 1399, 1466, 1470, 1481, 1486, 1495, 1506, 1512, 1523, 1524, 1529, 1534, 1542, 1549, 1554, 1562, 1573, 1582, 1583, 1585, 1586, 1593, 1596, 1608, 1613, 1620, 1630, 1633, 1641, 1695, 1702, 1712, 1724, 1726, 1728, 1745, 1746, 1764, 1831, 1840, 1850, 1855, 1859, 1885, 1868, 1904, 1905, 1909, 1934, 1957, 1961, 1972, 1978, 1986, 1991, 1994, 2010, 2011, 2013, 2021, 2025, 2035, 2037, 2039, 2040, 2043, 2045, 2059, 2064, 2066, 2115, 2121, 2185, 2187, 3511)

RESPONSE: Instead of listing an SAOT figure in the Final Plan, SAOTs will be tied to demand projections and the ability of the infrastructure to support the proposed SAOTs. "Infrastructure" refers to the ability of the area to provide the land base and the essential services of water, sewer, food, lodging, transportation, and power. A major ski area proposal would trigger an environmental impact statement which would consider, among other things, environmental constraints, demand, supply, and infrastructure.

COMMENT: Eliminate the current priority phasing plan in the DEIS which dictates an inflexible order of development for future ski areas. The sequence for evaluation of potential ski areas makes little sense. It is not clear why Hartley Springs is not included in the list. It would make more sense to do a thorough study of skier demand, all potential areas and the impacts of various levels of development. Then, areas considered inappropriate for alpine skiing could be managed for other resource values. (3511, 225) (50, 1099, 1501, 1634, 1641, 1806, 1891)

RESPONSE: The Final Plan changes the prescription for the Hartley Springs area from Prescription #10 - High Level Timber to Prescription #14 - Potential Alpine Ski Area. We have removed the priority phasing plan for sequence of development for potential ski areas. Rather than locking into a sequence of alpine ski area development in the Plan, the next major skiing proposal (other than Sherwin Bowl which is ongoing at this time outside the Forest planning process) would trigger an EIS which, among other NEPA requirements, would consider the cumulative effects of the proposal.

COMMENT: The Forest Plan should specify that any process used to evaluate alpine ski development will address the cumulative impacts of the enormous expansions being contemplated, and require a complete long-range plan before any expansion is permitted. Any analysis that you do must include the impact of downhill ski expansion on the Town of Mammoth Lakes in addition to impacts to visual quality, wildlife habitat, water quality and water consumption. This should take place before approval of any new ski area. In listing the factors limiting ski area development, the DEIS fails to mention natural resource values. Factors such as visual quality, wildlife habitat, and water quality should be listed and given primary consideration. (1598, 2169, 1617, 2190) (3,4, 38, 67, 97, 140, 147, 151, 163, 214, 225, 270, 293, 328, 351, 400, 443, 449, 954, 1000, 1099, 1107, 1176, 1161, 1193, 1218, 1261, 1263, 1348, 1388, 1433, 1464, 1485, 1489, 1509, 1515, 1532, 1545, 1547, 1556, 1565, 1566, 1591, 1602, 1625, 1630, 1631, 1634, 1638, 1641, 1648, 1662, 1732, 1740, 1843, 1845, 1862, 1884, 1893, 1907, 1922, 1923, 1931, 1933, 1956, 1964, 1977, 2048, 2067, 2076, 2087, 2103, 2122, 2136, 2138, 2142, 2154, 2156, 2170, 2178, 2191, 2207)

RESPONSE: The next major skiing proposal will trigger an environmental impact statement. This EIS, among other NEPA requirements, would consider the cumulative impacts of developing all the potential alpine skiing areas identified in the Preferred Alternative (Hartley, White Wing, San Joaquin, Minaret, and the Knolls). It would address the appropriate future SAOTs based on the anticipated environmental effects on resources such as soils, visual quality, wildlife habitat, water and air quality and the ability to mitigate those effects. It would also consider the ability of the existing and potential land base and infrastructure to support the proposal(s).

COMMENT: Downhill ski development should not be increased. I oppose the expansion of the ski area on Mammoth Mountain. (1230, 96) (5, 18, 35, 40, 55, 57, 77, 89, 112, 119, 140, 145, 157, 164, 167, 214, 266, 284, 288, 298, 302, 311, 419, 437, 438, 467, 491, 492, 906, 920, 934, 970, 1036, 1048, 1176, 1177, 1185, 1193, 1205, 1229, 1295, 1317, 1412, 1477, 1496, 1513, 1517, 1545, 1546, 1570, 1579, 1586, 1589, 1592, 1602, 1606, 1628, 1632, 1633, 1783, 1798, 1880, 1902, 1906, 1938, 1947, 1980, 1989, 2068, 2071, 2101, 2106, 2191, 2203)

RESPONSE: Mammoth Mountain Ski Area has an approved master development plan that projects the SAOTs for the existing area under permit to 24,000. No increase has been approved above that point. The approved Mammoth-Mono Unit Plan recognizes 7,000 potential SAOTs for June Mountain Ski Area. An environmental analysis has been completed on the expansion of SAOTs for June Mountain to 7,000. Any request to expand these two ski areas outside the

existing permit boundaries would trigger an EIS that would include a cumulative impact assessment of developing all the potential alpine ski areas identified in the Preferred Alternative.

COMMENT: Alpine ski development should be limited to expansion of existing areas rather than development of new areas. Enlarging the Mammoth Ski Area will maximize skiing with less disruptive impact than placing new downhill areas in other parts of the Forest. (78, 56) (37, 71, 89, 94, 95, 104, 126, 140, 146, 159, 160, 214, 263, 264, 272, 275, 320, 331, 370, 389, 409, 419, 450, 466, 925, 942, 968, 1025, 1027, 1194, 1349, 1472, 1498, 1532, 1533, 1539, 1629, 1652, 1798, 1806, 1854, 1952, 2112, 2135)

RESPONSE: As previously stated, any plans to expand the two existing ski areas beyond the present boundaries would trigger an EIS. With the possible exception of Sherwin Bowl, any expansion of alpine skiing facilities would occur within existing ski area boundaries before any new acreages were added onto the existing permitted areas or new ski areas developed. Additional SAOT beyond 24,000 for Mammoth Mountain and 7,000 for June Mountain would require an approved EIS.

COMMENT: I urge the Forest Service to say "no" to the downhill ski developers about San Joaquin Ridge. This part of the Sierra crest is an important deer migration route. Its natural values of old growth red fir, spectacular views, and wildlife should take precedence over commercial development. I would like to see this area preserved for cross country skiing. Urbanizing the San Joaquin Ridge for the benefit of ski area owners at the cost of losing wilderness seems to be a very poor sense of judgement. The sacrifice of lives and beauty for the financial profit of a few businessmen is intolerable. (946, 913, 2150) (3, 42, 168, 215, 225, 267, 278, 292, 295, 303, 315, 322, 328, 329, 332, 338, 345, 358, 377, 381, 383, 398, 412, 420, 441, 466, 906, 925, 933, 944, 950, 952, 970, 978, 994, 998, 1006, 1007, 1008, 1021, 1066, 1099, 1107, 1159, 1171, 1172, 1176, 1183, 1185, 1188, 1191, 1224, 1232, 1295, 1333, 1348, 1405, 1415, 1430, 1478, 1479, 1480, 1485, 1488, 1521, 1523, 1524, 1529, 1532, 1536, 1543, 1544, 1545, 1547, 1549, 1559, 1563, 1565, 1571, 1581, 1583, 1586, 1607, 1608, 1622, 1631, 1632, 1633, 1634, 1653, 1678, 1712, 1723, 1725, 1729, 1731, 1743, 1757, 1759, 1760, 1767, 1774, 1777, 1779, 1789, 1795, 1797, 1798, 1803, 1810, 1813, 1816, 1819, 1832, 1839, 1842, 1843, 1851, 1858, 1863, 1865, 1871, 1872, 1875, 1886, 1893, 1895, 1907, 1920, 1922, 1923, 1926, 1928, 1930, 1931, 1943, 1952, 1975, 1977, 1985, 1988, 1990, 2007, 2015, 2022, 2027, 2049, 2054, 2058, 2059, 2077, 2081, 2087, 2103, 2112, 2114, 2115, 2119, 2120, 2129, 2130, 2136, 2142, 2151, 2152, 2166, 2167, 2169, 2170, 2177, 2179, 2185, 2199, 2209)

RESPONSE: San Joaquin Ridge, which includes the area along San Joaquin Ridge between the Mammoth and June Mountain Ski areas, will be managed under Prescription #14 - Potential Alpine Ski Area. The statement in the EIS referring to evaluation of potential ski areas in a particular sequence has been deleted. The Plan does not say that San Joaquin Ridge will be developed; it identifies it as having potential as an alpine ski area. The next proposal for development for additional skiing would trigger an EIS which would consider the cumulative impacts of developing all the identified

potential alpine skiing areas. Much of the area between Mammoth and June Mountain Ski Areas is designated Prescription #16 - Dispersed Recreation. This prescription emphasizes winter nordic recreation. Only the steep portions of San Joaquin Ridge are identified as potential alpine ski areas. Red fir will not be cut during this planning period and deer migration corridors are protected. Before any alpine skiing development could occur, it would be analyzed in an EIS with full public involvement.

COMMENT: I support the idea of leaving the San Joaquin Ridge area open for future alpine ski development. I hope that development will be allowed in the future between Mammoth Mountain and June Mountain in a sensible, controlled way. I strongly request the Forest Service give favorable consideration to placing not only the San Joaquin Ridge area, but also Hartley Springs, Yost Creek and Deadman Creek into the "Existing Alpine Ski" category. Expanding fully step-by-step into San Joaquin, White Wing and Hartley Springs would produce much less impact than attempting to accommodate the increasing demands of skiers by developing a new ski resort like Mineral King or Trail Peak from scratch in an area without the support of a developed community. (396, 475, 1641) (20, 45, 195, 193, 202, 210, 231, 242, 326, 327, 335, 342, 350, 353, 368, 378, 414, 415, 417, 421, 423, 452, 472, 474, 476, 478, 485, 908, 916, 917, 932, 937, 938, 949, 981, 1016, 1039, 1054, 1091, 1094, 1179, 1197, 1237, 1204, 1246, 1257, 1266, 1296, 1364, 1366, 1387, 1400, 1403, 1409, 1416, 1418, 1428, 1429, 1493, 1495, 1497, 1499, 1505, 1587, 1604, 1614, 1646, 1661, 1737, 1739, 1750, 1756, 1769, 1811, 1847, 1870, 2118, 2154)

RESPONSE: The Final Forest Plan includes the following identified potential alpine ski areas: Hartley, White Wing, San Joaquin, Minaret, and the Knolls. These areas will be managed under Prescription #14 - Potential Alpine Ski Area, not Prescription #13 - Alpine Ski Areas which can only be applied to areas already constructed (Mammoth Mountain and June Mountain). We assume you mean White Wing when you say Deadman Creek. Yost Creek will be managed under Prescription #17 - Semi-Primitive Recreation and is not included in potential alpine skiing.

COMMENT: Mammoth/June Ski Resort requests an addition of approximately 7.3 thousand acres to the 21.8 thousand acres designated as existing or potential ski areas. This relatively small addition will allow the resort to substantially mitigate the potential conflict between alpine ski areas and exclusive use of lands suitable for dispersed summer and winter recreation. Nordic skiing can be staged out of the same areas designated in the Preferred Alternative.
Yost Creek: The cliffs next to the Yost Basin make a natural boundary between wilderness and possible future alpine skiing development, and we request that it be designated as potential alpine ski area.
Hartley Springs: To provide reliable access to the existing area of June Mountain and to mitigate the overcrowding of the Loop that will be caused by the utilization of the current approved capacity of 7,000 skiers a day, Mammoth/June Ski Resort requests that Hartley Springs and the mined area of Obsidian Dome, along with the roaded areas surrounding same be redesignated as potential alpine ski area. This would provide direct access to U.S. 395.

ALPINE SKIING

White Wing: We request that the potential alpine ski area boundary at the base of White Wing be moved to include a small portion of the intensive timber management area northwest of Deadman Creek.
San Joaquin Ridge: We request that the potential alpine ski area boundary along the base of San Joaquin Ridge be moved to include a small portion of the nordic ski area west of the Inyo Craters. This change in designation would not preclude nordic skiing and would more effectively allow for the possibility of multiple use of common facilities.
Deadman Creek: We request that a small portion of the corner in the Concentrated Recreation Area Prescription be reclassified as part of the Potential Alpine Ski Area designation, again to provide improved base facilities. These changes in total would also provide for a transportation system that will be necessary to join all of the areas together. (1641)

RESPONSE: Yost Creek will be managed under Prescription #17 - Semi-Primitive Recreation and not Prescription #14 - Potential Alpine Ski Area. The Hartley Springs area is changed from Prescription #10 - High Level Timber to Prescription #14 - Potential Alpine Ski Area. The remainder of the Hartley Springs area that is not included in Prescription #14 is changed to Prescription #9 - Uneven-Aged Timber Management. The fact that potential base area and transportation corridors are in Prescription #9 does not preclude base facilities in those areas. An EIS would address those needs.

The area northwest of Deadman Creek at the base of White Wing has been changed to Prescription #9 - Uneven-Aged Timber Management. This prescription can include development plans for any major ski proposal including major investments in base facilities. Prescription #12 - Concentrated Recreation Area can also include base ski facilities depending on the needs and suitability which would be analyzed in an EIS.

The area at the base of San Joaquin Ridge is Prescription #16 - Dispersed Recreation. This prescription can include areas for base ski facilities. The EIS for a specific proposal would identify needs and suitability for base facilities which could be constructed within this prescription.

The upper portion of Deadman Creek that was formerly in Prescription #12 has been changed to Prescription #16. Management direction for Prescription #16 requires master development plans be completed to include major investments in base facilities. Again, specific site proposals would be analyzed in an EIS, taking into consideration needs and suitability of the land base. Transportation planning for the proposal would also be coordinated in the EIS.

COMMENT: The Glass Creek and Hartley Springs areas are, in our estimation, inappropriate areas for alpine ski development. These are excellent areas for nordic skiing because they are extremely beautiful and unspoiled. Moreover, the ecosystem of the Glass Creek area deserves to be protected. This area has historically had very few visitors, but development of alpine skiing on all sides would most definitely have very serious and adverse effects. Please add a Standard and Guideline for fish to read: "To assure protection of essential habitat for the Lahontan Cutthroat trout to be

introduced, Glass Meadow will not be developed". The proposed designation of the Hartley Springs area for the development of alpine skiing has the possibility of eliminating the only other location which affords easy access to quality dispersed backcountry nordic skiing. (1244, 2170, 175) (419, 461, 1546, 2190)

RESPONSE: The Glass Creek meadow area has been changed from Prescription #14 - Potential Alpine Ski Area to Prescription #17 - Semi-Primitive Recreation. This will protect the meadow ecosystem from development and preserve its natural character. The Hartley Springs area has been changed from Prescription #10 - High Level Timber to Prescriptions #9 and #14. Essentially, the area now designated under Prescription #14 is the steep portion above Hartley Springs to the border of the June Mountain Ski Area. The flatter portions are designated Prescription #9 - Uneven-Aged Timber. This timber prescription does contain management direction that emphasizes dispersed recreation.

COMMENT: I am very familiar with June Mountain and wholeheartedly support the development of the Hartley Springs area to make June Mountain a more rounded ski resort. If June Mountain Ski Area is not allowed to expand for future development, I don't see how the community can stay viable. The present facilities on the mountain cannot accommodate enough skiers per day to support the small business community that is here right now. (414, 1003) (901, 2094)

RESPONSE: The Final Plan and EIS have changed; now the Hartley Springs area is designated Prescription #14 - Potential Alpine Ski Area. This does not mean the area will be developed; any proposal to develop this area for downhill skiing would have to go through the NEPA process. This would involve a cumulative impact analysis that considers all the identified potential ski areas. However, this does mean that the area will be managed to maintain the potential for alpine skiing.

COMMENT: I oppose development of downhill ski areas in the Sherwin Bowl. I believe this is a ridge to preserve the natural beauty of, not the San Joaquin Ridge. The Snowcreek Ski Resort would be a more advanced skier mountain and would be more susceptible to becoming a ghost town than a ski resort geared to all skiers. NEPA appears to require examination of the cumulative impacts of all similar past and reasonable foreseeable future ski developments before permits could be granted for a Sherwin Bowl project. (923, 2190) (59, 129, 134, 146, 214, 307, 337, 358, 461, 952, 1041, 1095, 1107, 1181, 1260, 1406, 1428, 1430, 1529, 1556, 1576, 1587, 1589, 1616, 1620, 1621, 1645, 1648, 1748, 1759, 1767, 1777, 1789, 1866, 1886, 1975, 2074, 2077, 2081, 2087, 2088, 2089, 2108, 2122, 2160, 2191)

RESPONSE: The proposal to develop Sherwin Bowl as an alpine ski area is presently undergoing an environmental analysis outside the Forest planning process. This process was initiated under the Mammoth-Mono EIS approved in 1979. The results of the analysis will be published in an EIS.

ALPINE SKIING

COMMENT: The Sherwin Creek Ski Area and its development of Solitude Canyon are in the migration route of thousands of deer. The development of this area would have adverse results on the deer. I want my grandchildren to see them forever. Sherwin Ski Area: No! The very people who dug up the meadow in Mammoth Lakes cannot be trusted! I don't want to see the deer disturbed. No development at all! Duck Pass Trail is just over the ridge. Don't do it. Close this area forever to development! (1530, 1620) (225)

RESPONSE: The proposal to develop the Sherwin Bowl Ski Area is presently undergoing an environmental analysis outside of the Forest planning process. The draft EIS has not been completed as of this writing. At this time no decision has been made on whether or not to consider developing this area as an alpine ski area. The draft EIS will be available for a public comment period, after which a decision will be made. The EIS will analyze all the effects on the environment including the deer migration route.

COMMENT: After reading the sections of the Plan and DEIS on the alpine skiing element, I could find no data to support an increase in alpine skiing facilities. The only justification I could find was that more skiers would come to Mammoth if more facilities were developed. I would like to see a presentation of data on the demography of alpine skiers in Southern California in the final EIS. My understanding is that the skier bulge has passed, the age structure has gotten older and young replacement skiers are down. Before more developed alpine skiing facilities are proposed and irreversible projects committed by the Forest Service, we need a quantitative assessment of future need based not on extrapolation of skiing use in the seventies but based on solid, up-to-date demographic data. We do not agree that demand will expand to fill any capacity (DEIS III-62) even if that were the proper way to plan. Rising costs for equipment, lift tickets and local lodging; traffic bottlenecks; and the lure of many new out-of-state ski resorts combine to narrow the future expansion possibilities. The U.S. population is aging, and this is primarily a young person's sport. On Plan III-26, supply and demand projections do not discuss economic dependency on driving six hours to get here and whether there are any impacts due to the fluctuation in world oil supply and prices? (2157, 1631, 1099) (94, 225, 466, 2170)

RESPONSE: Management Area direction for Management Areas #4, #8 and #9 have an additional water element that reads: "Allow development in the Mammoth/June area where adequate water is available after natural resource needs are met. Allow for the exploration and development of new water sources on National Forest System lands for community purposes only when such opportunities have been exhausted on private lands."

Additional direction for Management Area #4 has been added under facilities: "Conduct a cumulative effects study of the Mammoth/June area when a development proposal in this area requires an Environmental Impact Statement. The Mammoth/June area is bounded by U.S. 395 on the east; State Route 203 on the south; the John Muir and Ansel Adams Wildernesses on the west; and the ridgeline of the June Lake complex on the north." The study would look at all proposed activities and their effects. The study might

result in modifications to current prescription boundaries. One of the goals of the study would be to identify the best location and sequence for development of potential alpine ski development in an environmentally, economically and socially acceptable manner. The outcome could include the possibility of no development. SAOTs for specific sites will be determined through this cumulative study.

Your point about factors such as an aging population, lack of younger replacement skiers, economics of transportation, lift tickets, and lodging as related to the ability of the public to pay may or may not be true. It is probably not possible to say whether or not the increase in population in Southern California would be enough to more than offset the factors mentioned which could tend to lower demand for alpine skiing. Future expansion of alpine skiing on the Forest will be analyzed in an EIS.

COMMENT: The only way to generate a 12% annual growth rate is to use the drought years of 1976-77 as a base year. The graphs and charts attached as Exhibit 1 clearly show that the growth rates for Mammoth Mountain are much lower than 12% per year and are declining. This is true regardless of whether you look at total skier use or the average of the five highest days of each season (reflective of peak demand). Neither of the graphs follows a trend which would be indicative of a constant or increasing demand rate. The most generous growth projection I can derive from the attached data is a constant demand for 778 SAOT per year of capacity and even this appears to be smaller each year. Demand is a fickle thing and the EIS should do a more detailed analysis of historical demand to be used as a justification for future growth. (225) (1634)

RESPONSE: The EIS states that the recent 12% per year growth of alpine skiing is not likely to continue and that ski area and community development will slow down and ultimately depend on factors which emerge as the limiting ones for development. Water supply, sanitation, transportation and other factors may well be the ones that limit the growth of ski area development. Each proposal for development of additional skiing will be analyzed in an EIS, and the first such proposal for major additional skiing would trigger a cumulative impact study as part of the NEPA process. The last thing the Forest would want to do is to develop additional alpine skiing opportunities without the demand to utilize those facilities at a rate that is economically justified.

COMMENT: Disagree that impacts on the Forest created by community growth are outside Forest Service control (DEIS III-70). As skiing grows in popularity, it is imperative that the facilities to accommodate the population be allowed to grow in a natural proportion. The description for Management Area #4 - June Lake Loop should include an expanded discussion of the potential for ski area growth and its impacts on the June Lake community. The avalanche hazards to winter recreationists should also be discussed. The June Lake Citizens Advisory Committee (CAC) concurs with the Mammoth/June Ski Resort position that while it is possible to expand June Mountain Ski Area to 7,000 SAOT within its present boundaries, it would not be the most desirable experience for the skier with all parking and lift access required to be at

the current location. The CAC also believes that such concentrated ski area development would not be the most desirable experience for the community because the town's circulation system is inadequate for such a high level of use. The CAC supports dispersing the additional skiers to Hartley Springs and Yost Creek, thereby providing additional access points that are not subject to avalanche closures. (1631, 261, 1638) (461, 1641)

RESPONSE: As mentioned earlier, the Hartley Springs area has been added to Prescription #14 - Potential Alpine Ski Area. Yost Creek will be managed under Prescription #17 - Semi-Primitive Recreation. The order of development of additional alpine skiing will be analyzed in an EIS triggered by the next major proposal for additional skiing. Future increases in SAOTs will be tied to the existing and planned infrastructure and demand. If the necessary components such as sanitation, water, transportation, and land base are not sufficient to support planned increases in SAOTs, then it would not be possible to allow expansion beyond the ability of the area and infrastructure of communities to support that use. Since any expansion of alpine skiing would be on National Forest land and require a special use permit from the Forest Service, then expansion of SAOTs for skiing is within the authority of the Forest Service, dependent on satisfying all NEPA requirements.

COMMENT: The DEIS states that the level of development described in the Mammoth Lakes General Plan represents full development under the Preferred Alternative. The Town Plan discussed a maximum of 32,000 alpine SAOT without any consideration of growth of June Mountain. The Forest Plan and EIS should eliminate all statements indicating this consistency with the Town General Plan. Also, it should consider the impacts on Mammoth Lakes of skier capacity at June Mountain which exceeds the sleeping capacity of June Lake; those skiers will probably stay in Mammoth Lakes. The Forest Plan and EIS should either describe a level of development that is considered in the Town Plan or eliminate the references to the Town Plan and consider impacts of increased development on the Town. (225, 1891)

RESPONSE: Since Sherwin Bowl is within the Town boundaries, the Mammoth Lakes General Plan includes Sherwin's potential SAOT in its projections. Adding a maximum potential of 8,000 to the 24,000 projected for Mammoth Mountain's buildout totals to the 32,000 SAOT figure. Only the area inside the Town boundaries is included in the projection; June Mountain's SAOTs were not considered. However, the current June Lake Loop General Plan speaks to the increased capacity at June Mountain. This direction will be consulted in determining the timing of expansion for June Mountain. The statement referring to the development level in the Preferred Alternative as equating to the Mammoth Lakes General Plan has been removed. As stated in previous responses, the level of development (SAOT) will be analyzed in an EIS which would be triggered by the next major proposal for additional skiing. Any analysis would take into account the sleeping capacity of June Lake along with Mammoth Lakes. However, such things as available water, sewer capacity, transportation, and land base would probably be more limiting than sleeping capacity.

COMMENT: Because the DEIS has not evaluated in any depth the impacts of increased ski area development, no clear case has been made for a need for a significant increase in SAOT capacity, and the opportunity costs of holding large tracts aside for possible ski area development have not been assessed, I am proposing changes to the map for the Preferred Alternative. These changes also reflect other considerations. The Jeffrey Pine forest south of June Lake provides an important backdrop of the Mammoth/June Lake and should be managed under Management Prescription #9. The mule deer migration corridor southeast of Mammoth Lakes hits a dead end at Sherwin Bowl. This corridor should be maintained through Solitude Canyon. (225)

RESPONSE: See the response to the previous comment regarding SAOT capacity which will be analyzed in an EIS triggered by the next proposal to develop additional skiing.

The Jeffrey pine forest south of June Lake has been changed from Prescription #10 - High Level Timber to Prescription #9 - Uneven-Aged Timber Management. The area west of Prescription #9 has been changed to Prescription #14 - Potential Alpine Ski Area to encompass the Hartley Springs area.

The mule deer migration corridor in Solitude Canyon is being analyzed in the Sherwin Bowl EIS, which is ongoing outside the Forest planning process. That document will analyze the migration corridor and any proposed impacts development might have on it. The Forest Plan will not deal with the Sherwin Bowl development issue except to provide for the potential SAOTs within the 32,000 listed in the Mammoth Lakes General Plan.

COMMENT: Amend Prescription #14 to provide a suitable buffer along the ski facilities so they will not threaten the wilderness or impact its environment in any way. (113)

RESPONSE: When the California Wilderness Act was passed, the Minarets Wilderness was expanded and renamed the Ansel Adams. The expanded boundary was established 300 feet below the top of San Joaquin Ridge on the west side. If, after going through the NEPA process, the expansion of skiing was authorized on the east side of the ridge, any construction of skiing facilities, such as lift towers or buildings would be analyzed in a project specific environmental analysis. All potential impacts including visual quality and noise would be analyzed to determine what type of facilities were appropriate, the best location to serve skiing and to minimize impacts on wilderness characteristics. The Forest Service does not recognize the concept of buffers between wilderness and adjacent forest lands. In many instances, timber harvest takes place adjacent to wilderness boundaries. In the Golden Trout Wilderness, the lower boundary of the wilderness is adjacent to the Los Angeles Department of Water and Power aqueduct and only one half mile from U.S. 395.

COMMENT: Management Prescription #13 - Existing Alpine Ski Area. Add wildlife elements as follows: "Allow no new roads, road improvements or other habitat alterations that would impact deer holding areas or migration routes," and "Locate all facilities or other developments outside deer

migration corridors and staging areas." See recommended boundary changes on enclosed map. These boundaries include parts of range emphasis areas shown by recent USFS, BLM, CDFG and other research to be critical for deer. (2170) (1638, 2190)

RESPONSE: At the present time, Prescription #13 applies to the two existing ski areas, Mammoth Mountain and June Mountain, and to Sherwin Bowl which is currently under study. It would also apply to management of any new ski area after approval and development. Any proposed improvements within the existing ski areas are analyzed in a specific project environmental analysis which considers the concerns you have listed. Any new ski area with facilities which are proposed to be built within Prescription #14 would be guided by the management direction in Prescription #14. We have added additional management direction for wildlife for Prescription #14 which we feel responds to your concerns. The wildlife direction in Rx #14 has also been included in Rx #13 for any ski area expansion. There is an overlap in timing between potential and existing ski area development. The management direction in Rx #14 would guide development and placement of facilities until they were in place, and then Rx #13 would provide direction for the existing facilities.

COMMENT: Management Prescription #14 - Potential Alpine Ski Area. Add to the purpose: "...and to maintain the quality of the area for other designation, including wilderness, should downhill ski areas not be approved for development." (2170)

RESPONSE: The California Wilderness Act of 1984 does not require areas studied under RARE II and not identified as further planning areas by the Act to be reviewed for the wilderness option prior to the revision of Forest plans. Those "released" areas need not be managed for the purpose of protecting their suitability for wilderness designation and shall be managed for multiple use in accordance with land management plans.

COMMENT: In Management Area #5 - Glass Mountain under recreation, please replace the High Level Timber Management prescription west of U.S. 395 with an Existing Alpine Ski Area prescription as illustrated in the Mammoth-June Ski Area comments. Also, designate the remainder of the High Level Timber area south of Hartley for a nordic ski area. Develop a recreation composite plan to inventory, coordinate and program the full summer and winter recreation potential for this area. (1638)

RESPONSE: The area west of U.S. 395 contains several changes in management from the draft Plan. Prescription #10 - High Level Timber has been replaced by Prescription #9 - Uneven-Aged Timber which is more accomodating to dispersed nordic skiing. Prescription #13 - Alpine Ski Areas is used for the ski areas currently in place (Mammoth and June Mountains) and Sherwin Bowl which is currently under study. The area around Hartley Springs has been changed to Prescription #14 - Potential Ski Area. The title of Prescription #16 has been changed from Nordic Ski Area to Dispersed Recreation. Emphasis will be on winter and summer dispersed recreation rather than on commercially

developed nordic skiing. The area west of U.S. 395 between Mammoth Lakes and June Lake has been identified as the Deadman Recreation Composite Planning Area. That plan will coordinate the full range of recreation opportunities for the area with an emphasis on winter sports.

COMMENT: Please change the "Nordic Ski Area" designation to "Potential Alpine Ski Area". (1638)

RESPONSE: Prescription #16 has been retitled Dispersed Recreation; it was called Nordic Ski Area in the draft Plan. Emphasis is on the full range of summer and winter dispersed recreation rather than on commercially developed nordic facilities. The land base in this prescription is more flat and gentle and not suitable for alpine skiing. Base facilities to support future alpine ski areas could be located in the dispersed recreation or modified timber management prescription areas if the need were identified and the proposed additional ski area were approved.

COMMENT: Helicopter skiing and hiking. Helicopters are used to fly the rich skier and hiker/fisherman to the top. Helicopters negatively impact all other recreationists. (381)

RESPONSE: Helicopter skiing can be authorized by a special use permit. The permit specifies the conditions under which this activity can take place. Landing of a helicopter is not authorized in wilderness, either in the summer or winter. Most of the areas where helicopter skiing is authorized are devoid of people in the winter and impacts are negligible. The Forest does not currently have any special use permits authorizing helicopter transportation of hikers or fishermen to backcountry areas.

Developed Recreation

COMMENT: Forest-wide Standards and Guidelines for interpretive services. Please add: "Coordinate with local jurisdictions in the development of interpretive plans for areas adjacent to communities." (1638)

RESPONSE: We do not feel it is necessary to add this language; we will continue to coordinate with local jurisdictions.

COMMENT: Place new sites to be developed to least impact riparian values. A concentrated recreation site in upper Deadman would create unmitigable damages to the sensitive pumice streambanks and meadows found in this area. (2185)

RESPONSE: All new non-water related recreation sites will be developed a minimum of 100 feet from surface waters. This direction is located in the Recreation Development Handbook and the Forest Service Manual. The Concentrated Recreation Zone Prescription #12 provides many constraints on development and impacts related to other resources. Recreation development

in Upper Deadman would be located well away from streamcourses and riparian zones. The area identified as concentrated recreation on the map in Upper Deadman identifies the area of high recreation attraction along the stream corridor. The predominant use in this corridor would consist of dispersed recreational activities compatible with the streamside corridor. No overnight campgrounds and a limited amount of day use facilities would be built in this corridor.

COMMENT: Develop an aspen vegetation management plan for Convict to ensure future health of aspens in the campground. (1099)

RESPONSE: Aspen management in Convict Creek is covered by the riparian Standards and Guidelines. A separate management plan for Convict Creek is not necessary.

COMMENT: Tolerate heavier use of existing developed areas of the Forest in preference to opening any new areas. Fauna and flora in such developed areas have already taken the shock and surviving life forms adjusted. (61)

RESPONSE: A Forest-wide Standard and Guideline for developed recreation states that new campsites will be developed in concentrated recreation zones before other areas of the Forest. Any new concentrated recreation areas would be developed only after a recreation composite plan had been developed and full impact and mitigation had been identified in relation to other resource values. Only the Deadman - Dry Creek area has been identified as a new area for recreation development and composite planning in the first planning period. All other increased development would take place in existing concentrated recreation areas.

COMMENT: Strongly encourage developing the interpretive potential of the Hot Creek geologic site. (1616)

RESPONSE: All developed recreation and interpretive sites are scheduled for heavy maintenance and rehabilitation. The Hot Creek interpretive site is on that list and will eventually be rehabilitated to its full interpretive potential.

COMMENT: Management Area #2 - Lee Vining. I recommend adding: "The road from State Route 120 to Saddlebag Lake should be improved, paved and additional parking facilities provided near the end of the road." (1359)

RESPONSE: Lee Vining Canyon is one of the concentrated recreation areas that will have a composite plan developed for it to plan and coordinate the recreation development opportunities and potential. This plan will determine whether the Saddlebag Road should be paved and additional facilities placed at the end of the road.

COMMENT: Management Prescription #12 - Concentrated Recreation Area. Under recreation, please add: "Develop environmental threshold carrying capacities to define the capability of an area to accommodate additional development." Also, please add the following to the fourth recreation directive: "Include nordic, bike, and mountain bike trail systems where feasible." Under protection, please add: "Mitigate avalanche hazards for occupied areas." (1638)

RESPONSE: If needed, carrying capacity studies will be accomplished at the time that the recreation composite plan is completed. They may not need to be done for all concentrated recreation areas and therefore would not be included in the prescription direction. "Full trail systems" includes nordic, bike, and mountain bike trails where they are applicable and are identified in the composite plans. The particular types of trail uses are also identified in the Management Area Direction as appropriate. Current mitigation on National Forest lands when avalanche hazard exists in developed sites is non-occupancy. The proposed statement would imply that avalanche hazards that are located in concentrated recreation areas are all mitigated. That is not feasible nor desirable. The current procedure of non-occupancy and avalanche warning bulletins is considered sufficient.

COMMENT: Propose that there be at least 5 to 10 parking places set aside in all campgrounds for people who are not camping where trout are stocked. (83)

RESPONSE: We recognize that day-use parking is not adequate in many areas where it is most needed. This is in areas of high attraction, often associated with existing campgrounds and to serve also as guest parking for those staying in the campground.

COMMENT: Phase out Pine City and lake front sites at Twin Lakes Campground when alternative campground sites have been constructed. (1099)

RESPONSE: This action will be analyzed as part of a recreation composite plan for the Lakes Basin. Preparation of the composite plan is identified in the management direction for Management Area #8. Your suggestion has been proposed in past planning for the Lakes Basin.

COMMENT: Continue managing closure hours for Hot Creek to maintain safe conditions. Strongly encourage developing interpretive potential of the Hot Creek geologic site. (1099, 0129)

RESPONSE: Refer to recreation direction for Management Area #9.

COMMENT: Maintain existing capacity. Permit no further development in Lee Vining Canyon. Wood fires should be outlawed not only in wilderness but in all campgrounds along the Saddlebag Lake Road. Of special concern is the Sawmill walk-in campground. I have seen people walking into the Hall Natural Area to gather wood. (1099, 1634) (140)

DEVELOPED RECREATION

RESPONSE: There will no new development on National Forest lands in Lee Vining Canyon except for the possible expansion of the area behind Tioga Lake for a small campground site. All other remaining potential for development in Lee Vining Canyon is located on private lands in the lower part of the canyon. If these lands were placed into public ownership in the future, a recreation composite plan would be completed that would analyze the potential of these lands for development. Many of these lands are already being used for overnight camping and the facilities are currently managed by Mono County.

The new Sawmill Campground has been relocated 1/4 mile east of the Hall Natural Area. Due to recent avalanches and road reconstruction along the Saddlebag Road, there is an abundance of firewood in the area for campers to use at this time. All of the recreational facilities in the Tioga Pass-Saddlebag area are scheduled to be reconstructed in the near future. Included in this rehabilitation is the placement of new fire circles to limit the size of fire and discourage consumption of large quantities of wood. Because of the above situation, we do not see a wood problem at this time in the area. The need for restrictions on fires and the gathering of firewood would take place during the completion of the composite management plan.

COMMENT: Permit fuelwood gathering for recreational use in campgrounds only. (1099)

RESPONSE: Most campgrounds and recreation sites are not located within the general open fuelwood cutting area. Specially issued permits would be required for fuelwood cutters to obtain this wood. Usually the wood is available to the users of the campground only to be used for recreational use within the site. The exception would be those few campgrounds that are located within the general fuelwood cutting area. Downed trees within recreation site limits and within the open fuelwood cutting area are available to woodcutters as long as they do not damage the recreation site or travel off of the campground roads by removing barriers to get the wood. This practice has not presented a problem for the campers as there is generally plenty of wood available near these sites. The campgrounds in this category include Big Springs, Glass Creek, Hartley Springs, and Deadman.

COMMENT: Write one vegetation management plan for developed recreation sites per District for this planning period. (1099)

RESPONSE: We have many sites that need some sort of vegetative management plan to maintain or improve the vegetative cover for maximum recreation potential. We have added the following wording to the visual resource direction for Management Prescription #15: "utilize vegetative management plans for developed sites where on site vegetation is in a deteriorating condition".

COMMENT: Management Prescription #15 - Developed Recreation Site. The recreation element phrase "prohibit ORV use in and adjacent to sites" must be deleted since OHV staging areas should be classed as a developed recreation site. (68)

RESPONSE: We have added the following wording to the fourth recreation directive for Prescription #15: "except OHV staging areas".

COMMENT: The people who travel a lot tell me the campgrounds here are as poorly maintained as any they have found. Many of them are only partially open. Oh! Ridge is a good example of this. There are no convenient dump stations especially since the Crestview Reststop has been changed. There are no pull out areas for the traveler who just wants to stop for the night without the usual campground conveniences. The Grant Lake and Silver Lake private campgrounds have been raising their rates to the point where many of the customers who have been coming there for years have told me they will not come back anymore. A tourist oriented county like Inyo for all practical purposes does not have any decent campgrounds at all. Bishop Creek used to have many beautiful spots to camp. (1199)

RESPONSE: Because of low funding levels and having to maintain facilities at below standard levels, the condition of many sites have deteriorated. Many facilities are closed during the lower use seasons to reduce administrative costs. Under the Final Plan, maintenance levels would be adequate to keep facilities in a satisfactory condition. The raising of rates for any facility or attraction will change the patterns of use and the users. These facilities still are fully booked during the heavy use season.

Bishop Creek did offer many people the opportunity to camp in highly desirable locations from the user's viewpoint. However, a high degree of damage was incurred on the soil, vegetative, and water resources at the many little areas where uncontrolled use took place. To protect and mitigate this resource damage, use has been controlled to specific sites where the impacts mainly from recreation vehicles could be maintained at acceptable levels.

COMMENT: I suggest changing the first item regarding Big Springs Campground to add: "...and replace the present campground with a day-use facility."(1359)

RESPONSE: An alternative location for the campground has been located and preliminary analysis completed. The best use of the existing Big Springs site has not been determined at this time. The site needs to be revegetated to reverse the almost total impacts to soil and vegetation resources. There are some possibilities for day use that consist of fishermen parking, some picnic sites, and some interesting interpretive potential oriented towards the Springs and the archeological significance of the Lookout Mountain quarry sites. Prior to completion of the analysis, it would be premature to provide direction for development of this particularly sensitive site.

DEVELOPED RECREATION

COMMENT: Management Area #11 - Convict-McGee. Under recreation, consider adding: "If Crowley Lake is increased in size, consider expanding McGee Creek Campground to the area across the creek from the existing campground." (1359)

RESPONSE: Since expansion of Crowley Lake is only in the formative stages and may never take place, it would be premature to provide the suggested direction at this time. There is potential for expansion across the stream from the existing campground; however, the site has limited attraction since there is no tree cover and it will require an expensive bridge to access the site. If Crowley Lake were to be raised, then expansion could be considered in the next planning period.

COMMENT: In Management Area #2 - Lee Vining, why do you need to pursue the acquisition of developable recreation land base in both Lee Vining and Lundy Canyon? How do you propose to pursue these acquisitions? Will they speed by condemnation procedures? (2201)

RESPONSE: Both Lee Vining and Lundy Canyons are highly attractive areas for recreation use. Both are adjacent to and associated with the Mono Basin Scenic Area which has very little suitable land base for overnight development. Lee Vining Canyon is also located at the east entrance of Yosemite National Park. At the present time, the Forest Service provides only 60 camping units in the Tioga Pass area and Lee Vining Canyon. There are no more suitable campground sites except for the private lands in both canyons. These lands are currently owned by Southern California Edison Company; camping is currently allowed on portions of these lands. Acquisition of these lands will be handled independently of the Forest planning process. What the acquisition procedures would consist of if they took place are not currently known.

COMMENT: What is the extent of resource damage in "degraded sites" at developed campsites? Need an inventory of degraded sites. In an alternative based on reduction of developed site capacity, what percentage of reduction of existing capacity could be anticipated by removing "degraded sites?" Structural considerations such as reduction of developed campsites at heavily used areas. No developed campsite concentrations in sensitive areas like Bloody Canyon. (2178)

RESPONSE: Degraded sites generally refer to sites that are in need of rehabilitation of both the facilities and the site itself. General site degradation is caused by uncontrolled use of vehicles or numbers of people. Sometimes lack of facilities such as tent pads cause site degragation. These site impacts can be corrected by establishing controls and providing adequate facilities. Very seldom would a site be closed to use. Sometimes facilities within a site will be relocated to an area better capable of handling the use such as the relocation of a road from a meadow area to timber or brush covered site. Part of the rehabilitation plan may involve reducing capacity in long established use areas to protect the site and also provide a less crowded camping experience for the user. No developed campsite concentrations are planned for Bloody Canyon.

COMMENT: Stabilize developed recreation at present levels with some reduction if necessary to protect resource diversity. (2178)

RESPONSE: The Inyo National Forest has a major role in providing for the recreational enjoyment, activities and opportunities for millions of Southern Californians. In general, the demand for most recreational activities exceeds the supply. The supply of potential campsites is limited and would allow approximately a 50% increase in camping opportunities which ultimately will not fully meet demand. However, those recreational opportunities that do exist are planned to complement other resource values such as visual, wildlife, fish, cultural, and vegetative resources. The goals and objectives set for the recreation program are still valid and should not be changed.

COMMENT: Do not support expanding Tuff Campground. (129)

RESPONSE: Tuff Campground is a very popular campground because of its location on Rock Creek which is a major stream in the Eastern Sierra. Any additional usable land along Rock Creek adjacent to the existing campground becomes very valuable as a public use zone that both campers and recreationists from the outside will use. Rock Creek is one of the few streams that crosses U.S. 395 that is accessible for the public to use. The direction in Management Area #14 remains as written.

COMMENT: Management Area #2 - Lee Vining. The Forest Service should first come to a conclusion regarding the carrying capacity of Lee Vining and Lundy Canyons before pursuing land acquisitions. Riparian ecology is already severely impacted by campers in both canyons. I think it's a good idea to "analyze recreation facility needs" in Rock Creek Canyon. I don't think this area can handle many more people than it already has. If it hasn't been done previously, the carrying capacity of this canyon should be determined. (278) (1638, 2170)

RESPONSE: The Forest Service will determine the carrying capacity as part of development of a recreation composite plan. No additional development would take place without first determining how much and where such development is appropriate. Determining carrying capacity is important in development planning, not land acquisition. We know that the private land in both drainages has valuable recreation attraction and potential. We also recognize the detrimental impacts on the riparian vegetation due to the uncontrolled nature of the use and the lack of appropriate facilities. Rock Creek Canyon is considered fully developed. It currently has the largest overnight public campground capacity of any drainage on the Forest. Any proposed additions in the Rock Creek drainage would be to provide for day use and dispersed activities such as small fisherman parking areas, trails and minor interpretation facilities.

COMMENT: I'd like to see the Forest Service improve existing campgrounds and create more day-use facilities in popular areas. (906)

DEVELOPED RECREATION

RESPONSE: Much of the direction in the Final Plan calls for increasing the day-use, interpretive, and dispersed use facilities throughout the Forest. Also, the direction is to maintain and rehabilitate all of our existing recreation developments at full standard condition and make them available to the public for a full use season. Much of the additional trail system proposed under the Preferred Alternative is located in heavily used drainages to connect areas of use and interest, provide additional activities and attractions, and to accommodate the same or larger numbers of people with a lot less impact on sensitive soil and vegetative resources.

COMMENT: Management Area #4 - June Lake Loop. Please discuss the relationship between this area and the Mono Basin National Forest Scenic Area; please consider the "human carrying capacity" when planning for recreational development along the June Lake Loop. A cumulative assessment of potential ski development should include impacts to local communities and potential impacts from increased water consumption. Change "High Level Timber Management" and "Range Emphasis" to "Limited Access". A survey conducted in 1985 by the June Lake Citizens Advisory Committee indicated that there is a need for public showers, bike trails and ice skating facilities in the June Lake Loop. The same survey also supports the indicators that identify a need for more hiking and nordic ski trails. (1617, 1638) (2170)

RESPONSE: We have added the following wording to the description of Management Area #4: "The June Lake Loop will also provide much of the overnight base, in both public and private facilities, for users visiting the newly established Mono Basin Scenic Area."

Other planning efforts will be taking place in the June Lake Loop that will be tiered to the Forest Land Management Plan or closely related to it. These include a recreation composite plan that will inventory, plan, and program the recreational development to take place on public land to fully meet the goals and objectives of the Forest Plan. The composite plan will determine carrying capacities and control the types and locations of all facilities. For the June Lake Loop there would be both a summer and winter element. Also there would be a development plan for the existing June Mountain Ski Area that would detail how the Mountain would be developed to accommodate the proposed 7000 SAOT capacity that has been allotted. The community of June Lake and Mono County would also undertake planning efforts that the Forest Service would provide input to that would mesh development on private lands with that on public lands. A corridor viewshed plan would identify all of the visual modifications that have taken place in the Loop and identify mitigation possibilities for those on public lands. These many planning efforts plus others would provide for controlled and orderly change to take place with full knowledge of the impacts involved.

We have added the following wording to the recreation direction for Management Area #4: "Coordinate with the community of June Lake to determine the needs of the community when completing the recreation composite plan."

In the Final Plan, timber management west of U.S. 395 will be managed under the Prescription #9 which allows for uneven aged management only.

COMMENT: Management Area #5 - Glass Mountain. Please add to the second directive: "Reevaluate the use of and consider the need to upgrade the campground if ski area expansion in this area is approved." (1638)

RESPONSE: The direction has been modified. If this area is developed for a ski area the base area may or may not occupy the site currently occupied by the campground (Hartley Springs). In any case the total values currently found in the area would change and overnight camping in this area would be reevaluated as to its relationship to the ski area and base facility.

COMMENT: Maintain developed sites in the Reds Meadow Valley toward the primitive end of development scale to provide experience contrast with more developed sites in Mammoth. (1099)

RESPONSE: "Toward the primitive end of the development scale" denotes the type of recreational facility and use that is very low key with a minimum of facilities and controls, and very limited use and densities of populations. The Red's Meadows drainage is highly visible, popular, heavily used, and intensively developed with up-to-date facilities. All types of recreationists are encouraged to use the area. No distinction is made as to the types or sizes of recreational vehicles that can use the area. However, many design features can be incorporated to make it appear that the use is not as intense as it is in the Lakes Basin. The increased dependence on the shuttle system and reduced use of private autos, greater spacing between camp units, less commercial development, an adequate trail system to encourage other ways of getting around instead of the auto, and less obtrusive controls would all contribute to a more relaxed, slow paced atmosphere and existence.

However "primitive" generally means a few people doing what they want, where they want to do it with very little control, and that situation does not exist, nor would it be very popular if management direction called for such a situation. Red's Meadow has its own values and opportunities that are different from anything on the Forest. These values should be emphasized and become the focus of the recreation development for the drainage. The recreation direction for Management Area #10 will remain as written.

COMMENT: Management Area #10. Under the recreation direction, emphasize development of the upper end of the Red's Meadow Valley to better distribute concentrated use in the area. (1099)

RESPONSE: The Red's Meadow management area direction calls for the development of a recreation composite plan. This plan will propose the development options and define the final development solution for the area. Direction in the Forest Plan to develop the Agnew Meadow area would be premature without all information pertaining to where the best development to protect the resource and serve the public should take place.

COMMENT: Management Area #2 - Lee Vining. Lundy Canyon, one of the wildest and most spectacular eastside canyons, should not be further developed for

recreation emphasis. Lee Vining Canyon, while less pristine than Lundy, also hosts an incredible diversity of flora and fauna. Greater human encroachment on these riparian habitats will further diminish the quality of riparian lands on the Inyo. (1634)

RESPONSE: The only development proposed for Lundy Canyon would be on private lands if acquired by the Forest Service. Camping is already allowed on the private land and administered by Mono County. If acquired and administered by the Forest Service, the current use would be more tightly controlled to reduce the impact on the riparian resource. The overnight accommodations in Lundy Canyon would not be increased over the existing capacity of about 30 units. The direction for Lundy Canyon would come from preliminary studies and an environmental analysis when and if the land is acquired.

Approximately 250-350 units of overnight use currently takes place on private land in Lee Vining Canyon. This use is currently administered by Mono County and much of it takes place in the riparian zone and immediately adjacent to the stream. If the Forest Service were responsible for administering this area, any use taking place in the riparian zones would be relocated to dry brush and timber covered sites away from the stream corridor. The streamside corridor would be retained for trail systems and not for campsites and vehicles. Direction for the Lee Vining Canyon development would come from a recreation composite plan if the private land were acquired.

COMMENT: A park and ice skating circle and warming hut would balance out the general recreational value of Mammoth Lakes area and enhance its family appeal. (370)

RESPONSE: The need for an ice skating rink has been proposed in the past and there are many options for construction of such. This is a facility that could be constructed on public land. However, it could also be related to a community park or recreational facility as part of a county or city facility or as part of a private complex. It probably has not happened to date as it would be an expensive facility with marginal economic return. As the community grows, this facility will become more likely. A key factor will be location and association with the proper development.

COMMENT: Nonconsumptive recreation should be given a higher priority. Public lands have not increased the availability of campgrounds proportionately. People that use these facilities should be made to pay a fee for their use with increased fees for increased amenities such as piped water, garbage pickup and flush toilets. Priority should be placed on primitive camping because the private sector seems to be continually increasing the number of campgrounds of the KOA type. I do not agree with allowing a concessionaire to manage advance reservations for wilderness permits. (1616) (36, 37, 40, 42, 62, 122, 129, 214, 936, 1099, 1532, 1586, 1691, 1775, 1814, 1843, 1860, 1938, 2059, 2113, 2120, 2160)

RESPONSE: Basically everything outside of concentrated recreation zones, ski areas, and wilderness is available for dispersed and primitive camping. However, most available land is not suitable for vehicle camping of a

dispersed nature. Most of the available land on the Inyo is roadless, unusually steep, and has little recreational appeal because it has little suitable vegetative cover or available water.

What appear to be highly developed controlled campgrounds have reduced use in highly developed areas by up to 50%. The Mammoth Lakes basin in the 1950's and early 1960's had about 500 campsites scattered wherever anyone wanted to camp. This has been reduced to approximately 250 units by controlling and pulling units back from the most sensitive water zones and riparian areas. Many areas have still not recovered as evidenced by compacted soils around Lake Mary, Lake George, and Horseshoe Lake. Bishop Creek has been reduced by approximately 150 units, the Rush Creek corridor in the June Lake Loop by over 300 units, and the small sites in the Tioga Pass area by over 100 units. Primitive camping opportunities have historically ended up being camper cities that virtually destroyed the very environment the users came to enjoy. The volume of use no longer allows the individual to pick his own campsite in highly sensitive soil, water, and vegetative zones.

As facilities are added, the cost to the user goes up. It is the objective of the Forest Service to provide what cannot be provided by the public while protecting all resources to provide basic facilities. This usually means facilities between the primitive undeveloped campsite and the KOA campground. The densities found in privately run campgrounds and RV parks is dictated mainly by economics. 15 units per acre is necessary if they hope to make a profit. The Forest Service's goal is to provide a camping facility more closely resembling wildland camping.

It is unclear what you mean regarding wilderness permit reservations. We do have a campground concessionaire that manages the trailhead reservation quota for the Big Pine Creek drainage. This system is meant to provide a service to the public, most of which come from Southern California. Without this service, the public would have to drive to Bishop and turn around and drive back to the trailhead. If you are referring to the reservation service for the Mt. Whitney trail, that is being handled under an agreement with the Eastern Sierra Interpretive Association. The federal legislation encourages federal agencies to "contract" out this service where appropriate.

COMMENT: Oppose the development of a golf course on Doe Ridge on the Sherwin allotment because there are other areas in Mammoth for golf courses on private land. (1192) (1522)

RESPONSE: Doe Ridge is being handled through a separate environmental analysis process; a decision will be made before the Forest Plan is completed.

COMMENT: In the section about recreation residences on Page IV-28, please add after the first sentence: "In community areas such as June Lake, utilize the local general plan to determine future use." (1638)

RESPONSE: Local general plans may very well identify options and make recommendations for future use of recreation residences in and adjacent to community areas. However, a separate future use determination will still be done for recreation residence permits. Local general plans are usually guiding documents that provide direction for other governmental agencies to make decisions. The recommendations in a general plan that pertain to public land would be considered in all Forest Service planning and study documents relating to the specific area covered.

COMMENT: Request that the text on Page IV-28 be expanded to account for the stewardship role that recreation residence permittees perform. The following draft text is submitted for consideration for inclusion. Historically, the Forest Service has been adequately staffed to meet all the visitor needs and to manage all the visual and natural resources in our National Forests. Forest staffing constraints are mitigated by the recreation residence permit system, wherein permittees act as de facto stewards of our National Forests in the absence of Forest Service personnel. Some of the stewardship tasks performed by recreational residence permittees (at the Whitney Portal Tract) in the Inyo Forest include:

1. Radioing to the nearest town to alert law enforcement personnel of emergency.
2. Assisting lost and disoriented hikers, both in season and during the deep snow of winter.
3. Informing visitors, when necessary, of the rules protecting lakes and streams and against dangerously large campfires.
4. Reporting damage to campground and day-use area water systems.
5. Monitoring the pattern and extent of remote landslides, pest infestations and wildlife activity, and sharing these observations with the Forest Service Resource Officer and CDFG warden.
6. Giving directions and safety tips to visitors and sharing local historical, biological and geological information with them.
7. Dousing and reporting abandoned campfires, turning off unattended campground faucets and picking up trash strewn throughout the Forest.
8. Removing fallen rocks, boulders, trees and other obstacles from roads.
9. Maintaining and refurbishing road signs and trail markers. Performing incidental repair to trails.
10. Deterring vandalism to resources by their presence in the off-season.

These tasks highlight some of the benefits that the Forest Service derives from recreational residence permittees. They are part of the public/private partnership of which the President so frequently speaks. We ask that the Plan recognize the valid, cost-effective role that such permittees play as stewards of the Forest. (1278)

RESPONSE: The Forest-wide Standards and Guidelines for recreation residences identify those guidelines that apply to the administration of the recreation residence program on the Inyo National Forest. The above list of benefits listed may be just some of the benefits and services provided by recreation residence permittees, but they are not guidelines for Forest Service

administration of summer home sites, nor would they be considered as part of the conditions for holding a recreation residence permit. They are not appropriate for inclusion in the Plan.

COMMENT: Consider selling the land that is presently leased for recreational residences in the Mammoth Lakes Basin to the cabin owners. (231) (120)

RESPONSE: The highest value of public land in the Mammoth Lakes Basin or any other heavily used concentrated recreation area on the Inyo National Forest is for recreation use and development. We have programs that identify and provide financing for the purchase of private lands in these areas. Over two million dollars has been spent in the Lakes Basin alone to acquire valuable recreational lands. Recreational residences are considered a recreational resource. Lands occupied by recreational residences in prime recreational areas will not be sold into private ownership. Recreation residences lands will only be considered for private ownership when they are a logical part or extension of an established community and do not occupy critical habitat or natural resource lands. This has taken place in both the Mammoth and June Lake communities.

Dispersed Recreation

COMMENT: Management Prescription #7 - Ancient Bristlecone Pine Forest. Under the recreation direction, modify the statement about overnight parking to read: "Permit no parking at any time." Hunters should not be allowed the special privilege of camping in parking lots. (2170)

RESPONSE: The intent of this direction is to allow hunters to park overnight only in areas designated for this purpose. The parking areas are not necessarily parking lots. It is not practical to allow hunting and overnight camping and not allow parties to park overnight. However, because of the sensitive nature of the area, the Forest Service has the responsibility to designate areas where parking can be accommodated in a safe and responsible manner.

COMMENT: Management Area #4 - June Lake Loop. Please add to the third directive for recreation: "interface trail systems with community development; include opportunities for mountain bike and nordic trails." Please delete "and Rx #17" from the first sentence of the fourth directive. Also replace "Rx #17" with "the Yost Lake area" in the second sentence. (1638)

RESPONSE: We have reworded the third directive under recreation to read: "Identify and program dispersed trail facilities in areas in Rx #4, #12, and #17. Include hiking, equestrian, and bicycle opportunities."

The recreational values and opportunities for the area identified as Prescription #17 or Yost Creek are in the semi-primitive non-motorized ROS

class. The area is not remote nor large enough to be classified as primitive and the vegetation, soils, and steepness of terrain are not compatible with motorized activities. The fourth directive will remain as written.

COMMENT: The developed campground has sent me running with my tail between my legs and the few areas left to us are Buttermilk, Coyote, the Inyos and Whites. These are places where you feel like you don't need a permit. I see more and more existing dirt roads shut down so that a person is always being funneled into a crowd. Why can't we keep some of those roads open just so a person can pull off the main stream and have some privacy? (183) (5, 67, 77, 79, 88, 97, 116, 119, 298, 345, 377, 400, 438, 466, 481, 933, 950, 952, 1025, 1099, 1183, 1188, 1191, 1230, 1277, 1332, 1333, 1348, 1372, 1388, 1411, 1424, 1430, 1451, 1485, 1517, 1521, 1532, 1543, 1565, 1566, 1576, 1630, 1648, 1649, 1650, 1652, 1663, 1682, 1683, 1714, 1744, 1860, 1868, 1889, 1907, 1931, 1938, 1980, 1982, 2007, 2035, 2177, 2185, 2190, 2195, 2209)

RESPONSE: Buttermilk, Coyote, Upper Deadman, the Inyos and Whites will essentially remain available to those who do not like developed sites and areas. In the Final Plan no roads are to be closed and none are to be upgraded from 4WD to 2WD. Even though developed campgrounds will increase in the next planning period, they will be located in areas that are already developed and fully accessible.

COMMENT: Recreation is the largest income generator in the region, and non-destructive dispersed recreation should predominate as a resource dedication. (59)

RESPONSE: On the Inyo National Forest, dispersed recreation is of very high priority. Except for wilderness, the amount of dispersed recreation is directly related to the number of overnight campsites, motel rooms, and local residents within one to two hours of the destination. Most dispersed users come from the available campsite base. There are no large metropolitan bases from which dispersed users are generated. Therefore, the opportunities and potential for dispersed day-use activities exceeds the demand on the Inyo as long as proper setbacks of developed facilities are maintained from highly attractive features. On the Inyo, as elsewhere, the main attraction is usually water. There is a current lack of facilities oriented towards dispersed recreation outside of wilderness. Facilities oriented toward day use such as fisherman parking, trails and paths, sanitation, and information or interpretive boards are a major emphasis item in the Forest Plan. This direction will be further detailed in recreation composite plans that will be tiered to the Forest Plan.

COMMENT: There is not enough emphasis on the increasing demand for dispersed recreation opportunities by the local community in Mammoth. (1099) (1891)

RESPONSE: Management Areas #8, #9, #10, and #11 all are located close by or adjacent to the community of Mammoth Lakes. All of these areas have management direction emphasizing the development of dispersed opportunities and the associated facility base required for increased use generated by the

community. Of particular importance are the expanding trail systems for hiking, nordic skiing, snowmobiling, bicycling, and equestrian use proposed by the Plan. Interface with the communities of Mammoth Lakes and June Lake will be accomplished through cooperative planning and development efforts.

COMMENT: Prohibit dispersed camping along Convict Creek. Prohibit dispersed camping and open fires along the shores of Convict Lake and inlet area. (1099)

RESPONSE: Dispersed camping should not generally be taking place in a concentrated recreation zone. The recreation direction in Management Prescription #12 implies this when it says to control camping and confine overflow occupancy to acceptable sites. We have modified the text as follows: "Control camping; allow no dispersed camping unless designated in management area recreation direction; confine overflow...".

COMMENT: Management Area #6 - Pizona. Need to add a recreation element and state that viewing of wild horses is a significant activity in this area. (1261) (105)

RESPONSE: We have added some language in the description of the Pizona area that describes the importance of the wild horse herd is this management area. Recreation use is identified as extremely limited, consisting of occasional hunters, 4WD, and commercial packing outfitter-guide operations. The commercial guide operations may be for hunting reasons or for the purpose of viewing the wild horses.

COMMENT: Consideration should be given to trying to remove the potential bicycle and equestrian traffic from the more crowded and popular local roads such as U.S. 395 between Mammoth and June Lakes resort areas with separate designated and maintained trails/pathways. (1608)

RESPONSE: The desirable location for bike paths in heavily used recreation areas and along major highway corridors would be alignments separated from motor vehicles; these paths could take better advantage of the more attractive recreation zones. Areas that have great potential for such bike paths are the Mammoth Lakes Basin, June Lake Loop, the Mammoth community, the Mammoth Creek corridor, the Scenic Loop Road and U.S. 395 between Mammoth and June Lake.

Bicycle paths are extremely expensive to build and maintain. Their construction generally starts where the greatest potential for use and conflict with autos is readily apparent. The three primary areas that would benefit from bike paths at this time separate from the major highways are the Lakes Basin, the Town of Mammoth Lakes and the June Lake Loop. U.S. 395 is currently being upgraded to a four lane divided highway from Mammoth to the June Lake Loop. The shoulders on this new highway will be widened to safely accommodate bicycles. This is not the most desirable solution but is a safe and acceptable one at this time. Direction is located in Management Areas

#4, #8, and #9 encouraging the development of bike trail systems in cooperation with local communities.

COMMENT: "Dispersed recreation would be managed with an emphasis on the quality of experience, rather than the quantity of use." Many of the most suitable dispersed recreation lands are targeted for development (Management Prescriptions #10 and #14). There is conflict between a growing number of visitors seeking a more primitive type of recreation experience and the removal of the type of land base which best supports this type of use. This is especially evident in Management Area #8. (2185)

RESPONSE: Within Management Area #8, all of the areas which have Prescription #14 applied to them currently offer primitive, semi-primitive non-motorized, and semi-primitive motorized activities and opportunities. At this time, these 15,523 acres are not dedicated to downhill skiing but are only identified as having the potential for downhill skiing. These areas will be studied for that potential in a separate environmental analysis process. Part of the study will be to recognize and mitigate conflicts with other resources if any of these potential ski areas are approved for development.

COMMENT: In the DEIS, you state: "The majority of dispersed recreation on the Inyo National Forest represents day use in concentrated recreation areas by people who are staying overnight on Forest Service campgrounds." The only way to increase dispersed use would be to increase overnight developed capacity, both on and off Forest. (2178)

RESPONSE: We agree. This is recognized throughout the documents.

COMMENT: In the DEIS, you state: "...increasing numbers of recreationists will recreate outside of peak use seasons due to development of motorhomes and campers designed for year-round use." What is your basis for this assumption (studies, reports)? (2178)

RESPONSE: This assumption is based primarily on observation of use patterns over the last 20 years. More and more motorhome and camper use is evident during the winter months, particularly in the Mammoth area. We expect this increase in use to continue related to the increased cost of housing during the ski season, the greater use of year-round school systems, and the increasing use of motorhomes by the retirement community.

COMMENT: What is the basis for the assumption that wilderness recreation and hunting visitation are not dependent to a degree on developed recreation? (2178)

RESPONSE: Developed recreation is referring to the developed campground in both the private and public sector. On the Inyo National Forest, most dispersed day use is generated from this developed campground base or is housed in lodging in the local communities. Wilderness users do not

generally use developed campground facilities except for the first or last night of their trips. Hunters do not depend on developed campgrounds; they use them if they are convenient to the area they want to hunt. In many cases, campgrounds are full during hunting season, but, for the most part, hunters would camp as a dispersed activity if campgrounds were not available. In other words, hunting would take place at current levels whether campgrounds were or were not available.

COMMENT: Do not abolish the camping area where it is now, across from the old Cottonwood Pack Station on LADWP land until you finish all the camping area up above. (2196)

RESPONSE: Part of the expansion of developed recreation opportunities in the Final Plan includes the construction of new campground facilities in the trailhead area. Once the new campgrounds are developed, the Forest Service would seek cooperation from the City of Los Angeles to eliminate the use along the stream and road corridors below the trailhead.

COMMENT: Recreational shooting outside of hunting season is a health and safety hazard to all other users; there must be no recreational shooting on the Forest. (381)

RESPONSE: In wilderness, the discharge of firearms is permitted only for emergencies and taking of wildlife as permitted by state game laws. Recreational shooting within wilderness is not allowed. The Code of Federal Regulations CFR 261.10 (D), states: "Discharging a firearm or any other implement capable of taking human life, causing injury, or damaging property: (1) In or within 150 yards of a residence, building, campsite, developed recreation site, or occupied area, or (2) across or on a forest development road or a body of water adjacent thereto, or in any manner or place whereby any person or property is exposed to injury or damage as a result in such discharge, is prohibited." These regulations are generally adequate and eliminate any problems or conflicts. There are cases where more restrictive regulations are necessary such as in relation to communities and private inholdings where the county and the Forest Service cooperatively establish no shooting zones.

COMMENT: The weather patterns in the Sierra and White Mountain ranges surrounding the Owens Valley are ideal for long distance cross-country and high altitude flights for hang gliding. The Inyo National Forest/Owens Valley is, without exaggeration, the most well known flying site in the world. International competition has taken place on the Inyo Forest yearly since 1979. The Owens Valley Cross-Country Classic has been the number one cross-country meet in the world since its inception. The sport of hang gliding has very little impact on the environment. However, we do need access to good launch points on the Sierra and White Mountain ranges within the Inyo National Forest. There are currently a couple of well-used launches in the Sierras including the very famous Walt's Point launch near Horseshoe Meadows, Wheeler Crest. On the eastern side of the valley, there are about a

dozen launches in use in the White Mountains including Cerro Gordo, Mazurka and Gunter. (1658)

RESPONSE: All of the launch points mentioned will remain available for hang gliding. Specific direction for management of these launch sites is not necessary in the Forest Plan as conflict with other uses is not known to occur and impacts to resources are generally non-existent.

COMMENT: Concerning trails, the Town of Mammoth Lakes would like to see dog sled trails in the Inyo National Forest Plan at the following areas: the Sawmill Cutoff Road, the Sherwin Creek Road, additional track in the meadow area with the approval of the Equestrian Center, and the area west of U.S. 395 known as the Mammoth Scenic Loop area. (1891)

RESPONSE: The Forest Plan does not identify individual trail opportunities as to location and type. Dog sled trails have not been proposed as a widely accepted form of winter recreation use in the Mammoth or June Lake areas. If the need is truly present for this recreational activity, then the community of Mammoth Lakes, a sledding organization, a potential permittee, or a commercial outfitter needs to identify a specific proposal and ask for consideration by the Forest Service. Community planning efforts should identify the need, magnitude and potential locations for such trail development. Recreation direction calling for trail opportunities with the community of Mammoth Lakes exists in Management Area #9. This would allow for the consideration and location for dog sled trails.

COMMENT: I urge that a prescription be added to repair the Shepherd Pass trail to allow for stock in the management plan. (172) (173, 178, 179)

RESPONSE: The Shepherd Pass trail is inventoried on the Forest as an all purpose trail which includes suitability for stock travel. It is scheduled for reconstruction in the Forest program of work, but accomplishment is dependent on funding.

COMMENT: Need to establish better control over commercial pack station service day allocations to avoid a pack station from using all service days in a short period of time. In other words, establish service-day limits per time period for commercial outfits to minimize damage to wilderness resources and impacts to other wilderness users. (1099)

RESPONSE: Pack station special use permits require the permittee to prepare an annual operating plan. The special use permit contains the maximum number of service days allowed under that permit. The operating plan prepared by the permittee and approved by the Forest Service is the document that spells out where, when, and how those service days will be used. If there are any conflicts identified between other users or in areas used by the permittee, the operating plan is the document used to resolve those conflicts. Direction in an operating plan is site specific and changes from year to year. It would not be appropriate to include this type of information in the Forest Plan.

COMMENT: Prohibit stock within established dispersed campsites, all interpretive sites, and riparian areas. (1099)

RESPONSE: There are certain restrictions which apply to stock use in wilderness dispersed areas. Stock are only allowed in campsites for loading and unloading of gear. Interpretive sites are developed sites, and as such it is prohibited under the Code of Federal Regulations CFR 261.14(1) to bring pack or saddle stock into the site unless is is otherwise posted to do so. As a general rule, the Forest tries to avoid putting trails in riparian areas. Sometimes it is not possible to locate a trail outside these areas, and where the riparian resource is fragile, we try to harden the trail through these areas to reduce impact. However, it is impractical to prohibit stock grazing in riparian areas as a blanket statement. There are restrictions on grazing to protect riparian areas. Loose grazing as opposed to picketing is preferred; this is less damaging to the meadows. Grazing is prohibited early in the season until the ground has dried out and the vegetation has matured to the point where grazing can take place without damaging the resource. Areas can be closed to grazing during the season when the feed has been properly utilized.

COMMENT: Trails for equestrian use should be developed in the Mammoth corridor allowing access of riders to or from the John Muir Wilderness to U.S. 395 to the open areas beyond Mammoth Lakes. (1260) (1261, 1645)

RESPONSE: There is a need to closely coordinate with the community of Mammoth Lakes with a trails plan that would identify the full range of hiking, equestrian, bicycle, nordic and snowmobile trails that could interface with the community. A trails plan needs to be developed for the area from the Mammoth area to the June Lake Loop. Generally trail development will be identified and proposed through recreation composite plans which would include the Lakes Basin, Red's Meadow, the Deadman-Dry Creek area north of Mammoth and the June Lake Loop. Where composite plans are not proposed, the specific trail needs are identified in specific management area direction.

COMMENT: Stock should at least be confined only to the John Muir, Pacific Crest and other "freeways." Stock do not need to go into Cascade and Fish Creek Valleys or up into McGee and Rock Creek Canyons. (1634)

RESPONSE: The trails you refer to are in wilderness. Prescription #1 - Designated Wilderness contains direction to manage stock use for these and other areas within wilderness. Stock parties are under trailhead quotas the same as other users. Party size and number of stock per party can be limited to a size that is compatible with the social and physical resources. The capacity of each area is calculated and trailhead quotas are developed to manage these areas within their capacities. Pack stations are authorized under special use permit to serve areas adjacent to their base of operations. The areas you identify are in demand by the public to be accessed by pack stock. The annual operating plan prepared for each pack station and approved by the Forest Service spells out how stock will be used

in these areas. Any identified conflicts are resolved in the operating plan and the permittee is bound to the conditions approved in those plans.

COMMENT: Roadhead parking and facilities should be provided for private equestrian users and overnight tie up areas. Public pasture where feasible. These do not need to be paved parking areas. Designate for equestrian use but do not limit to equestrian. A horse trailer rig takes up no more space than a motorhome. Equestrian use of the Bristlecone Forest should be encouraged, and areas where water may be found should be identified for use. Pizona is also an important recreation area for private equestrian use and should be directed as such. (1645, 1260) (1261, 1645)

RESPONSE: Most of the stock use trails on the Forest have trailheads that can accommodate stock vehicles. Not every trailhead has developed unloading facilities, but some do. Very often there is a commercial pack station in the vicinity of a trailhead that has stock facilities that would be available to the public for use. The new Horseshoe Meadow Equestrian Campground has facilities for overnight use by stock users. When the Forest reconstructs a trailhead, part of the design process is to evaluate the need for stock facilities and to incorporate them where desirable. Public pastures are difficult to maintain and essentially have been phased out.

Equestrian use of the Bristlecone Pine Forest is not encouraged because of the steep access road, absence of water in the area, and potential conflicts with day hikers that are using the interpretive trails. These interpretive trails are not designed for stock use, and the trailheads do not have facilities for unloading or tying stock. Use of the Bristlecone Pine Forest by stock outside of the interpretive sites and trails is legitimate. Water for stock use in the Bristlecone Pine Forest is scarce and undependable.
The Pizona area is presently used by both commercial and private stock parties. The Forest does not have any plans to encourage or discourage stock use of this area; water is scarce and there are no developed facilities for stock use.

COMMENT: Coyote area. The entry road should be included in a maintenance program. A sign at points of entry is needed specifying the guidelines for use such as the requirements of fire permits and haul out what you take in. It is a potential area for greater private equestrian usage and should be recognized as such. With the Bishop area now having a larger population of trail riders and a very active High Sierra Equestrian Trail Riders Club, this is an area that can be used without competing with commercial wilderness use area. Hopefully we can continue to keep the camping primitive. (1645)

RESPONSE: The Coyote Road is presently being maintained under a Green Sticker Grant from the state. Another Green Sticker Grant will fund a self-service information station to be located at the foot of the mountains. The back road to Coyote leaving from the South Fork Bishop Creek Road is a good access route that is not open to OHV travel and which does not need much maintenance. This would be a good route for some organization to adopt for maintenance.

COMMENT: I am concerned about the destruction incurred by pack trains. On my trip to Thousand Island Lake, a pack train of ten horses spent one hour grazing on fragile alpine meadows surrounding the base of the lake where even camping is forbidden. A week later, I took a trip to the Deer Lakes area. After we set up camp at Lower Deer Lake, a group of ten horses, nine mules and nine or ten people came and camped in the fragile meadow behind the lake. This kind of activity ruins the wilderness experience. I felt like I was camping in a dude ranch. It is destructive to the fragile backcountry meadows. (2034)

RESPONSE: One of the problems with stock grazing in the wilderness or backcountry is the preferred method of grazing of turning the stock loose with or without hobbles. Restricting grazing in a particular area that is adjacent to areas where grazing is allowed is difficult to control. The stock wander unless the area is fenced off. Substantial fencing in the wilderness or other areas is really not feasible. The reasons for a prohibition on camping in an area may not be valid for restricting stock grazing. Stock grazing by packers is regulated by their special use permit and an annual operating plan that is approved by the Forest Service. If there are specific problem areas within the area serviced by a particular pack station, the operating plan is the "vehicle" for spelling out the mitigative measures necessary to alleviate that problem.

COMMENT: The individual horse user should be included in any planning for the future of the Inyo National Forest, the same as cross-country skiers, fishermen, hunters, or hikers. (2206)

RESPONSE: We have revised one of the Standards and Guidelines for dispersed recreation to read: "Incorporate the increasing demand for mountain bike, equestrian, bicycle, and nordic opportunities into composite plans, community plans, trail plans, and programs." There is adequate direction for programming equestrian trail opportunities for Management Areas #4, #8, #9, #10, #14, and #15. These opportunities will generally be handled through the composite plan process.

COMMENT: We are experiencing ever increasing mountain bike usage on and off park trails and in wilderness, where such use is prohibited. Consequently, if you develop such trails on the Forest, we would like to work with your planning staff to ensure that the resulting trails do not become routes into National Park wilderness. (487)

RESPONSE: When a trail system is identified for mountain bike use, public involvement in locating and developing the trails and public review of the proposal will be built into the process. We would not like to create a situation where mountain bikes were oriented towards National Parks or designated wilderness.

COMMENT: In our opinion, the Forest Service should develop a Forest-wide management policy on mountain bicycle access. We feel that each trail should

be evaluated from the standpoints of level of usage and environmental impact, with any potential conflicts being examined ahead of time. It could then be determined which trails would be open to bicycles and these should be marked. Mountain bicyclists should be encouraged to participate in trail building and maintenance rather than being ostracized. Mountain bicycling is a quiet, human powered and non-polluting means of experiencing the beauty of the Inyo National Forest and other natural areas of our country. We feel that with proper resource allocation and an understanding of the needs and limitations of mountain bicycles, this activity can be enjoyed by all who participate without environmental damage or conflict with other users. (974) (23, 129, 214, 293, 300, 340, 381, 400, 919, 923, 1032, 1099, 1104, 1105, 1232, 1216, 1253, 1286, 1315, 1316, 1407, 1464, 1466, 1532, 1537, 1541, 1584, 1585, 1604, 1616, 1634, 1650, 1653, 1664, 1666, 1674, 1842, 1843, 1920, 1923, 1933, 1982, 1985, 1988, 2034, 2059, 2170)

RESPONSE: Mountain bicycle development and use is a new and growing sport. The impacts of this activity are currently located close to the communities of the Eastern Sierra. Mountain bikes are not allowed in wilderness. At this time, it may be premature to develop a Forest-wide plan oriented towards mountain bikes. The direction in the Standards and Guidelines to incorporate mountain bike opportunities into all recreation and community plans and programs may be sufficient until such time as the full potential of mountain bikes is apparent. The trail program outside of wilderness is deficient on the Inyo, particularly in heavily developed recreation areas and in relation to local communities. Much of the management direction throughout the Plan calls for increased development of trail opportunities outside of wilderness.

COMMENT: The proposed 600+ miles of trails improved and reconstructed are badly needed. During my 30 year acquaintance with the Inyo, trails have deteriorated noticeably with little money and manpower spent on maintenance, let alone new construction. Care must also be taken in constructing and maintaining hiking trails. Trails should avoid riparian areas, wet meadows, and erodible slopes for a host of reasons. I would like to see more funds appropriated to trail work, not necessarily creating new trails but to maintain existing ones and encourage ecological use of the precious backcountry. I support more emphasis on non-wilderness trails including hiking, equestrian, angler access and interpretive non-motorized trails. When the budget crunch for trail maintenance comes, which kinds of trails have priority? Pedestrian, equestrian or ORVS? ORV trails must be low priority and non-motorized high priority. (1650, 1798, 1922, 381) (1191)

RESPONSE: We agree with your comments; the Plan recognizes the need for new trails, particularly outside of wilderness for many types of use and activities. It also recognizes the need for increased trail maintenance dollars for existing trails. Appropriated maintenance dollars have always been spent on hiking trails. Any funds spent on motorized trails have come from special funding sources such as Green Sticker Funds or other organizations.

COMMENT: I object to the low number of trail construction and reconstruction compared to ORV miles. (121)

RESPONSE: The FEIS estimates that 125 miles of hiking trails would be constructed in each of the first and second decades for a total of 250 miles of new trails. Eighteen miles of OHV trails would be constructed in each of the first two decades for a total of 36 miles.

In reconstruction, hiking trail miles total 20.3 per year for the first decade. The OHV miles reconstructed show 16.2 miles per year which appears to be a very high number. This high number reflects the total number of uninventoried roads on the Forest which exceeds 320 miles. Many of these uninventoried roads include old timber or access roads that are no longer maintained but are still used by OHV recreationists. Maintenance on these roads would be limited to protecting the surrounding soil and water resources with minimal expenditures. The cost per mile for reconstructing a hiking trail would be much higher. The bottom line is that there will be 350 - 400 miles of roads and trails on the Forest that are usable mainly by OHVs because of condition. Most of these currently exist with only 36 new miles being created. There are approximately 1250 miles of hiking trails on the Forest with approximately 250 new miles planned for construction.

COMMENT: Signs should be designed so they can be easily read by hikers and equestrians. It is important that these signs can be read from all directions and include miles to indicated areas. It makes it easier to plan estimated times to arrive at desired destination when distance is known. Wooden signs blend with the environment but are easily defaced and made difficult to read.
(1260)

RESPONSE: We agree with your comment. Signing requirements should be included in subsequent composite and management plans for recreation and wilderness areas.

COMMENT: Rock Creek - Pine Grove area. Hiking and equestrian trails need to be reopened and maintained for day use. The cross country ski trail around the pond could be utilized for horseback riding. The entry to Hilton Lakes trail and Tamarack area from here, if rebuilt with lesser grade, would provide excellent and much needed development for the many campers that require gentle trails for horseback riding and hiking especially for children. When the Eastfork Campground was developed, no provision was made to provide new trails for the beautiful wooded trails that were destroyed. Rock Creek Lodge should be encouraged to upgrade their facilities. (1645)
(1843)

RESPONSE: Recreation management direction for Management Area #14 calls for a future use determination for Rock Creek Lodge. If the lodge were to remain under permit, upgrading of the facilities would be a priority. Direction also calls for expansion and completion of a trail system in the drainage. No further direction is needed in the Plan of a more detailed nature.

DISPERSED RECREATION

COMMENT: You state in the DEIS that "A 57% increase in developed site use would increase day use in adjacent wilderness, resulting in more encounters within five miles of trailheads...". How can increased trail use be encouraged and justified when these existing trailhead areas are already experiencing severe recreation impact? Bloody Canyon is a fragile, sensitive trail area where new development seems unwarranted. Various forest areas and trail areas have different sets of management variables. The Plan and EIS need to reflect these different situations and variables. Has any consideration been given to quotas on day use in heavily impacted trail areas at Mammoth, Red's Meadow for example? (2178)

RESPONSE: There will be an increase in day use at trailheads in proportion to increases in overnight development. Most trailheads do not experience severe recreation impact as most use is controlled by the developed facility at the trailhead. The vegetative, soil, and water resources at all developed trailheads are not severely impacted. There is a much higher density of use at trailheads than at the interior of the wilderness area. Day users can enjoy what small portion of wilderness that they visit just as much as the overnight user and with much less impact. Very intensive day use in wilderness areas is often associated with specific attractions such as lakes or other features. Part of the heavy use at trailheads and associated wilderness trails is related to the lack of a good trail system outside of wilderness. As trails are developed throughout the concentrated recreation areas, some of the use pressure at trailheads should be reduced. We have not considered day-use quotas an option; however, they could be applied to wilderness if resource damage or user conflicts were a problem because of day use. Bloody Canyon will have a minimum of facilities associated with it. Only day-use facilities oriented towards Walker Lake and a trailhead are envisioned. All vehicles and parking would be located below the lake.

COMMENT: In your discussion of recreational opportunities for the Owens Valley Escarpment, you have omitted Shepherds Pass, Baxter Pass, Sawmill Pass, and Taboose Pass trailheads. These are important accesses and exits to and from Sequoia and Kings Canyon National Parks, primarily for backpackers but also for some horse traffic. They serve as overflow routes for Onion Valley and Whitney Portal when people have been unable to get permits or for those who prefer less populated trails. These trails need to be retained in the system with at least occasional maintenance. Currently both Taboose and Baxter Trails need repair where floods have damaged the trail-creek intersections. (148) (1004)

RESPONSE: The direction for Management Prescription #1 - Designated Wilderness states that all trails will be maintained to assigned maintenance levels. This applies to all system trails and trailheads which include the above mentioned trails.

COMMENT: The present number and condition of hiking and nordic skiing trails in the Forest is perfectly adequate (even excessive). The proposed construction of 249 hiking trail miles and 350 nordic ski trail miles presented in the Preferred Alternative is ridiculous! Given that so much of the Forest is already easily accessible, we encourage a policy of trail

reduction. There are few areas which do not currently have trails, and these areas should remain difficult to reach for the purposes of maintaining high quality wildlife habitat. We propose a trail review and evaluation to assess the condition and necessity of all trails contained in the Forest. All trails found to be infrequently used should be obliterated. In addition, all trails in high altitude areas should be removed immediately as they are unnecessary for travel and serve only to concentrate human impacts. No new trailheads, improved access, or trails should be built. (140)

RESPONSE: Almost all of the new trail miles are in areas of existing intensive use in the heavily used drainages of the Forest. These trails are badly needed to eliminate or reduce resource damage, provide recreational opportunities, experiences, and activities for the overnight user and to take some pressure off the trailheads and backcountry trails. Newly designated wilderness areas would have a relatively low number of new trail miles as most proposed areas have a much lower recreation attraction level and carrying capacity than existing wilderness. New trailheads would generally be minor or not needed. However, facilities to accommodate use will be necessary to the degree identified in the individual wilderness management plan prepared for each area.

COMMENT: In the DEIS discussion of environmental consequences, the trails section means very little if not broken down into trails which will be open or closed to off-road vehicles and mountain bikes. This information should be provided wherever trail mileages are discussed. Also, we would appreciate additional information on the trails planned for designated and proposed wilderness areas. Although additional trails may be desirable, there is good reason to question the construction of new trails in some wilderness areas. (2160)

RESPONSE: Specific trails open or closed to use are not detailed in the Forest Plan which is a broad umbrella document providing guidance and direction to the trails program in general. Wilderness management plans, recreation composite plans, the 1977 Interagency Motor Vehicle Use Plan, and others will determine what happens to each trail in the system. These documents will also identify new trails to be developed. We agree that some sections of wilderness could best be managed without trails; however, these areas will be determined in the individual wilderness management plans.

COMMENT: For too long the high country trails and public pastures have been neglected. We want facilities that are safe and available for recreational stock users. The extensive trail system that exists today in much of the Inyo National Forest was originally built to facilitate the movement of pack animals and livestock through the mountains. However, trail maintenance has declined over the years to the point that many trails may be lost completely. If the current policy of trail neglect is to be reversed, there must be some major adjustment to the priorities exercised by the managers of public lands. More emphasis must be placed upon increasing the numbers of field personnel such as trail crews, and less emphasis on administrative staff positions. (1666)

DISPERSED RECREATION

RESPONSE: Recreation trails are receiving more national attention. The Forest Plan sets standards for trail maintenance, but the number and standard of maintenance is dependent on funding. Hopefully, with increased national attention to trails, an adequate amount of funding will be appropriated to maintain them to their assigned levels.

COMMENT: Existing system trails should be preserved and maintained. Trails which have been dropped from the system should be inventoried, and, where practical, reestablished. Non-motorized use should be given preference. Reconstruction of existing trails should be given priority over construction of new trails; new construction should only be approved after public input is taken. Trails should be protected from the effects of other management activities such as logging and roadbuilding. Herbicides should not be used on trails. (91) (381)

RESPONSE: Trail maintenance and construction are handled through planning and programming efforts that will be tiered to the Forest Land Management Plan. The need for new trails to meet many different recreational needs is well documented throughout the planning documents. The priorities set for the types of trails are related to the funding available. Since the miles of hiking/equestrian trails far exceed all other types of trails, the priority is generally given to hiking trails. There is a need for a variety of trails to meet needs for bicycles, mountain bicycles, nordic skiing, trail bikes, snowmobiles, and interpretation of natural features and resources. Recreation development plans will look at the opportunities to provide facilities for all of these activities. Public input will be gathered in relation to new development proposals that would significantly add to or change the current situation. Trail locations establish recreation use corridors that become zones of high visual, recreational, and natural appearing values. Herbicides are not used along trails.

COMMENT: Based upon conversation with range staff, wilderness rangers, and informed botanists, I recommend that we require that 70 percent of stock feed requirements be met by packing in pellets and grain. Since most of the trail damage (outside of weather related phenomena) is caused by pack stock, I recommend that we research ways to have pack station fees returned to the Forest for trail maintenance. It is a complex problem, but sometimes we need to develop complex solutions to operate under restricted budgets. (1252) (87, 381)

RESPONSE: Management direction under Prescription #1 requires feed to be packed in under the following conditions: before the grazing season, where feed is unavailable, and where grazing could be damaging to resources. There is no authority at the present time that would allow any or a portion of the fees paid by outfitter/guide permittees to be used for trail maintenance. However, many of the present permittees volunteer their stock and/or personnel to help maintain the trails each year.

COMMENT: Pack animals should not be allowed on popular beautiful hiking trails. They destroy the trails and make it disgusting to hike some

sections. High fees should be charged for pack animals to discourage their use. (1191)

RESPONSE: Some trails are too difficult for stock to negotiate. Stock is prohibited on the Mt. Whitney trail for safety considerations. However, we do not have the authority to prohibit stock use on trails that are designed for all purpose travel. Commercial pack stock operations are limited by the number of service days in their permit. We have no authority to regulate fees to discourage stock use.

COMMENT: It should be recognized that wilderness, recreation, and facilities (including pack stations) are not totally separate functions. I urge explicit mention of pack stock usage in the documents to at least permit control if not improvement of the situation. (58) (156, 169, 185, 296, 1260, 1372, 1929, 1261, 2193)

RESPONSE: Pack stock operations are controlled through the special use permit. Each permittee is allotted a certain number of service days for operation on the Forest. In addition, there are Forest orders in effect that prohibit certain practices which are deemed to be harmful to the resources. Grazing regulations spell out how and when the forage may be utilized. Wilderness management plans also contain direction that manages stock use, and these plans become part of the Forest Plan.

COMMENT: Management Area #13. Emphasize non-motorized recreation in this area. Do not allow open roaded use especially within 3/4 mile of Methuselah Nature Trail in the Bristlecone Pine Forest. (129)

RESPONSE: The Management Prescriptions for the area adjacent to the Bristlecone Pine Forest have been changed to exclude Prescription #18. Motorized activities in the area of the Bristlecone Pine Forest will take place only on designated roads and trails. No off-highway use will be allowed.

COMMENT: It is unnecessary to have the northeast face of McGee Mountain as semi-primitive non-motorized. The most restrictive it should be is semi-primitive motorized. If the reason for the restriction is protection of the deer, then close the roads just during the deer season. The road through Tobacco Flat and up the north side of McGee Mountain must be left open because it is the access road to a TV relay station. (1870)

RESPONSE: The road access to the TV relay station can be managed for administrative use only. The ROS class which relates to public recreation use and access can still be semi-primitive non-motorized. All of the little dead-end roads that access the base of McGee Mountain should be closed to eliminate soil erosion, vegetation removal, and visual disturbance. Also, many of these short roads cannot be safely negotiated and they do not lead anywhere except to dead-end on the hillside.

OFF-HIGHWAY VEHICLES

COMMENT: In certain aspects, the Limited Access Prescription may be preferable over the Open Roaded Prescription in much of the White Mountains. However, the Limited Access (it says "limit your access") Prescription may potentially be used to close this area off to those people who have traditionally found their recreational respite in the Whites in a 4WD vehicle. If all existing roads will be maintained and remain open for public access under this designation, then I have no quarrel with it, but if the designation will be used to close existing roads and access in the Whites, then I am vehemently opposed to it. The people who work and play in the Whites do not want to see any further road closures. We do want to see off-road vehicle use, except in designated areas, prohibited. The open roaded classification would be preferable to promote mineral exploration, small hydroelectric development, and better range management. It would also satisfy the Native Americans who use the Whites for wood and pine nut gathering. The creeks on the east side of the Whites are the only fishing resource available to residents of Esmeralda County, Nevada and the Open Roaded Prescription would allow them access to this recreational resource. (2171)

RESPONSE: All existing roads in the White Mountains will remain open for motorized use. However, all of the open roaded areas south of White Mountain Peak, except for the Poleta Canyon area, shown in the Draft Plan have been changed to the Dispersed Recreation Prescription which replaces the Limited Access Prescription.

Off-Highway Vehicles

COMMENT: The map of the Preferred Alternative in the DEIS designates the area just to the east of Badger Flat in the Inyo Mountains as proposed wilderness. This area between Badger Flat and Waucoba Wash has some excellent and well travelled 4WD roads. If the map is to be believed, two trails leave Badger Flat heading in an easterly direction toward Waucoba Wash. The map is quite incorrect and these trails are much used 4WD roads. (1893) (201)

RESPONSE: The boundaries of the proposed wilderness additions have been adjusted to exclude the 4WD routes you mention. This will preserve the option to travel between Badger Flat and Papoose Flat on 4WD routes. The map with the Forest Plan is not meant to show all the 4WD routes that exist. Even though the route on the map looks like a trail, it is a 4WD route. The update of the 1977 Interagency Motor Vehicle Use Map will consider identifying 4WD routes differently than trails.

COMMENT: I don't understand the Prescription #17 and #18 designations coupled with ROS semi-primitive motorized in the tip of Pine Creek Canyon. I realize there is mining in the area and there needs to be trailhead access to Morgan Pass, but why allow motorized recreation all the way to the top of Mt. Morgan? Maybe you could specify exactly what kinds of recreational and industrial uses the Forest Service has in mind for this area. (278)

RESPONSE: The semi-primitive motorized classification covers the motorized use by Umetco for access to their operations near Mt. Morgan. It is not meant to authorize public motorized access. The motorized use is not recreational in nature, but specifically authorized in a special use permit to cover the portion on National Forest land as opposed to private land.

COMMENT: I am opposed to the Management Prescription #18 - Open Roaded designation for the springs area on the northwest side of Deep Springs Valley. (1643)

RESPONSE: The area to which you refer is not truly open to travel anywhere by motor vehicles. The prescription has been renamed and rewritten to clarify its intent. In this area, new roads can remain open to public travel once they are constructed, regardless of the reason they were built. Vehicle use is still restricted to existing routes.

COMMENT: Management Area #13 - Benton-Casa Diablo. Under recreation, add: "Allow ORV use only on designated roads and trails." (2170)

RESPONSE: Your statement on OHV use on designated routes is consistent with the direction for Prescription #17. This direction is not restated for this Management Area. For the portion of Benton-Casa Diablo that is designated Prescription #17, your statement would apply.

COMMENT: Management Area #8 - Mammoth Escarpment. Under recreation, modify the ORV paragraph to include the pumice flats north and south of Deadman Campground as candidates for ORV analysis and protection. The north flat becomes an unusual flower-filled pumice meadow in the spring and summer. The south flat, northeast of South Deadman Dome, has an interesting backdrop of crumbling Obsidian Dome and contains an unique assembly of dwarf and twisted lodgepole and Jeffrey pine growing from a fragile pumice soil. Both areas are accessible to vehicles and are threatened by ORV use. I suggest that you consider a front country trail linking Mammoth with June Lake via the base of east San Joaquin ridge. This trail could meander through some of the most diverse and beautiful lands the Inyo has to offer such as virgin red fir, pocket meadows, intermittent streams and unusual geologic features. I also suggest that you have Mammmoth Mountain Ski Area paint the ugly black structures on top of Mammoth Mountain a color that blends with the landscape. (2170)

RESPONSE: Prescription #17, which covers the area you mention, does restrict OHV use to designated routes. These pumice filled meadows are not open to unrestricted OHV use. Perhaps better signing and information is needed to make people aware of the sensitive nature of these open pumice flats. Stricter enforcement of the regulations would be in order if significant trespass occurs. The transportation system for this area would be included in the Deadman Recreation Composite Plan which is mentioned in the recreation direction.

OFF-HIGHWAY VEHICLES

Your suggestion to repaint the black structures on top of Mammoth Mountain will be taken into consideration. If that is the prudent thing to do, it will become part of the summer operating plan of the ski area.

COMMENT: Prescription #13 - Existing Alpine Ski Area. Delete "allow no ORV use". This is blatant discrimination against ORVs after stating "allow the range of recreation activities included in the rural ROS class. Need to state snow and non-snow use separately. (379)

RESPONSE: The ski area is in the rural ROS class because of the development scale and its proximity to the town. However, to say that the developed ski area is open to the public to OHV use would be incorrect. The special use permit for the ski area governs what may take place. OHV use is restricted to the permittee's need for OHV/OSV use.

COMMENT: Prescription #15 - Developed Recreation Site. The recreation element phrase "prohibit ORV use in and adjacent to site" must be deleted since OHV staging areas should be classed as a developed recreation site. (379)

RESPONSE: You are correct when you state that a staging area for OHVs can be a developed site. However, there are none presently existing on the Forest. There is a trailhead planned off of U.S. 395 that would be used for snowmobile and possibly summer OHV use. In that case, since the site is identified as a trailhead for OHV staging, OHV use would be permitted. The OHV direction in Prescription #15 is meant to prohibit OHV use in and around such areas as campgrounds, picnic sites, and interpretive sites. OHVs may enter and exit the developed site, but cannot use the site or adjacent area to run around in.

COMMENT: In Monache Meadows, off-road vehicle use and timber harvesting activities should be consistent with maintaining or improving stream habitat. The contention that ORV users have a vested interest in using this area should not be used to justify a continuation of activities that are adversely affecting fish and wildlife habitat. (2190)

RESPONSE: Direction for Management Area #20 - South Sierra which includes the Monache area says nothing about timber harvesting. The Management Prescriptions involved are Designated Wilderness, Mule Deer Habitat, Wild and Scenic Rivers, Developed Recreation, and Limited Semi-primitive Dispersed Recreation. The major resources are range, recreation, and wild and scenic rivers.

A separate environmental analysis dealing with the management of OHV use in the Monache area will set forth measures to correct existing problems. Many of the existing 4WD routes in the area contain sections that go through wet meadows or dead end at new wilderness boundaries created by the California Wilderness Act of 1984. The EA addresses these problem areas and proposes to rehabilitate them or to relocate portions of existing routes around problem

areas. These measures will stabilize wet areas and improve fish and wildlife habitat. OHV use is restricted to designated routes in this area. In areas designated Prescription #4 - Mule Deer Habitat the deer will be emphasized over other resources such as OHV use.

COMMENT: Prescription #18 should be redefined to refer only to ORV open areas. Vehicle access for mineral activity, range management and ORV use on designated roads and trails is accommodated under other Prescriptions. There are roadless areas to virtually unlimited roadbuilding, development and high impact mechanized recreation. This ill-conceived Prescription, if put into practice, could lead to the irreversible destruction of almost 200,000 acres of valuable Forest resources including wildlife habitat, dispersed low impact recreation opportunities and watershed. (2170) (278, 293, 329, 381, 1185, 1464, 1509, 1549, 1609, 1650, 1664, 1731, 1857, 1931, 2036, 2060, 2142, 2147, 2152, 2169, 2185, 2202, 2207)

RESPONSE: Prescription #18 has been "Multiple Resource Area". The description of this prescription is changed to read "The purpose is to allow vehicle access on existing routes and in areas designated as open areas. The prescription allows roads to be constructed or upgraded to facilitate vehicle access for mineral activity, range management, and recreation use. There is no single resource emphasis. This prescription supports use of mineral, range and recreation resources, and maintaining vehicle access on existing routes, trails, and open areas." The only open area on the Forest will be the Poleta Canyon area. All other previously identified open areas which were crosshatched on Draft Plan OHV map have been eliminated.

COMMENT: Prescription #18. The first paragraph should read: "The purpose is to allow roads to be constructed or upgraded to facilitate vehicle access for mineral activity, range management, utility needs, and recreational use." Second paragraph, second sentence should read: "This prescription supports use of mineral, range and recreational resources, and maintaining an "open road" policy for access to mineral areas, range allotments, utility facilities, and for motorized recreation." Under the recreation element, second paragraph, the first sentence should read: "Allow ORV use on designated roads, trails, and open areas, but prohibit ORV use on designated utility roads." A lands element should be added and should read: "Permit new utility rights-of-way." (1093)

RESPONSE: Prescription #18 has been substantially rewritten; it has been retitled "Multiple Resource Area." Please refer to the response directly above.

COMMENT: I am happy to see the intended adoption of the 1977 Interagency Motor Vehicle Use Plan prohibiting motor vehicle operation off of designated roads and trails. A number of research reports which I have read all indicate the serious impact of motor vehicles off of established roads and trails. (1029) (3, 8, 9, 10, 11, 12, 13, 16, 21, 22, 44, 63, 85, 91, 129, 140, 159, 177, 182, 214, 273, 287, 286, 288, 300, 322, 324, 329, 345, 358, 371, 381, 391, 397, 400, 410, 441, 455, 466, 481, 932, 935, 946, 950, 953,

954, 978, 979, 980, 999, 1006, 1008, 1031, 1032, 1107, 1159, 1168, 1175, 1176, 1191, 1202, 1218, 1224, 1230, 1253, 1274, 1273, 1283, 1313, 1317, 1326, 1333, 1388, 1396, 1402, 1407, 1421, 1430, 1434, 1435, 1436, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1466, 1485, 1487, 1490, 1498, 1537, 1539, 1541, 1543, 1548, 1552, 1559, 1576, 1584, 1591, 1593, 1596, 1605, 1606, 1626, 1630, 1632, 1633, 1650, 1654, 1656, 1660, 1662, 1665, 1666, 1670, 1690, 1616, 1614, 1625, 1700, 1738, 1744, 1757, 1773, 1774, 1798, 1800, 1801, 1802, 1804, 1806, 1816, 1830, 1837, 1839, 1842, 1843, 1845, 1852, 1858, 1860, 1862, 1863, 1865, 1868, 1873, 1876, 1900 1907, 1904, 1919, 1923, 1931, 1952, 1971, 1975, 1977, 1985, 1989, 1995, 2007, 2030, 2032, 2054, 2058, 2060, 2091, 2102, 2129, 2136, 2143, 2159, 2160, 2161, 2167, 2170, 2178, 2190, 2199, 2207)

RESPONSE: The 1977 Interagency Motor Vehicle Use Map will be revised subsequent to the Forest Plan. It will designate OHV use according to the existing designations of open, closed, and restricted. The only open area on National Forest land will be the Poleta Canyon area.

COMMENT: I would like to see a study conducted to identify roads that are no longer needed, and develop a plan to close these roads to further use. (1430) (140)

RESPONSE: The Forest-wide Standards and Guidelines contain criteria for updating the 1977 Interagency Motor Vehicle Use Plan. These criteria basically identify the adverse impacts which might occur to things like soil, water, and vegetation and which may indicate that some management action is necessary to correct the situation. One management action could be closing a route to OHV use.

In some cases, more than one OHV route exists between two points, and where one is not needed, it would be prudent to consider closing the route that has the most potential for resource degradation. Closure of existing OHV routes would be considered in the update of the 1977 Interagency OHV Plan which will be done subsequent to the Forest Plan.

COMMENT: A rehabilitation plan should be created to restore areas damaged by ORV use including an eradication plan for unsuitable and illegal routes. (1632)

RESPONSE: Please see the response directly above. Unsuitable routes can either be closed or rehabilitated. Green Sticker funds from the state are available to repair and/or restore damaged routes. Illegal routes would be signed closed and the closure enforced.

COMMENT: The ORV map should indicate that Mammoth Mountain is a restricted area for ORVs. It currently shows that area open to ORV use. ORV use should be permitted for administrative purposes only. (1099)

RESPONSE: The Forest Plan OHV map shows the Mammoth Mountain area as limited use. In this case, OHV travel would be limited to designated routes. In most cases, OHV travel for the public would be prohibited on Mammoth Mountain. The only designated route that is shown open on the 1977 Interagency Motor Vehicle Use Map is the route to Reds Lake. The 1977 Map is the the official map for OHV travel on the Forest.

COMMENT: All ORV use should be confined to designated and signed roads only (not trails). All ORV use should be kept off trails because it is too difficult to regulate the use due to insufficient numbers of enforcement personnel; they cause erosion and biological destruction; and the viability of the soil can be and often is damaged irreparably. (1532) (63, 65, 80, 123, 129, 140, 170, 263, 284, 292, 293, 367, 384, 386, 400, 408, 409, 416, 450, 466, 483, 491, 914, 923, 938, 954, 958, 998, 1038, 1171, 1326, 1348, 1421, 1485, 1544, 1548, 1591, 1600, 1673, 1674, 1680, 1730, 1759, 1820, 2008, 2142, 2180, 2205)

RESPONSE: Please refer to previous responses. OHV use in further planning areas will be managed under Prescription #17 which restricts OHV use to designated routes as opposed to Prescription #18 which allows OHV use on existing routes.

COMMENT: Roads and trails should be defined in the Plan. I believe that they should include only existing public roads and should not include trails. Hikers and ORV enthusiasts on the same trails would be unworkable. It would result in a forfeit of those trails to the ORVs as hikers will wish to avoid them. (1843) (329)

RESPONSE: OHV use occurs on what are called routes. These may be 4WD routes or motorcycle routes. The Forest Plan refers to 4WD routes as part of the trail system. Motorcycle use can take place on roads, 4WD routes or trails where that use is permitted. There are very few trails on the Forest where motorbikes are permitted since most of the trail miles are in existing wilderness or in wilderness access category trails. The Plan does not suggest forfeiting hiker/horse trails for motorized use. The 1977 Motor Vehicle Use Map shows portions of trails that are closed to motorized use. All trails outside of closed areas that are not shown closed are open to motorized use.

COMMENT: Keeping all ORVs away from areas west of U.S. 395 is a great idea! (1570) (398)

RESPONSE: Management direction for the Upper Owens River west of U.S. 395 is to emphasize winter and summer dispersed recreation. This does not preclude some OHV use in this area, but it would be restricted to designated routes or corridors. Most of the area east of U.S. 395 would be open without restrictions to snowmobiles when sufficient snow cover exists to protect soil and vegetation.

OFF-HIGHWAY VEHICLES

COMMENT: While the definition of the Limited Access Prescription #17 is good, some of the language could be stronger. The Draft Plan provides that there will be no new 2WD roads except for mineral development. Please state that no new 4WD routes will be established either. The permittees feel that the term (limited access) is poorly written and needs to be changed. The term as written appears to mean "future wilderness"; eighty percent of the Limited Access designation denies dispersed recreation opportunities for the handicapped and senior citizens. The definition should be rewritten to allow more dispersed recreation opportunities to a more diverse group of people, and all roads that exist in this prescription should be maintained for access. (1598, 2171) (60, 111, 131, 1532, 1617, 1710, 2201)

RESPONSE: Prescription #17 has been rewritten to clarify its intent. The total number of miles of existing road will be maintained. However, roads may be reconstructed or realigned to correct resource damage. Realignment may entail some new construction to put the road in a better location to protect resource values. The intent of the prescription is to maintain the status quo and not to build new roads into previously unroaded territory.

COMMENT: Monache Meadows (Area #5029) should be closed to vehicle use. It is unrealistic to be able to control unauthorized traversing of adjacent closed areas. Mountain meadows are very sensitive to erosion including compaction by vehicle travel. (1598) (129, 147, 275, 277, 303, 381, 1539)

RESPONSE: The California Wilderness Act of 1984 specifically released areas for multiple use during the next planning period. Monache was one of these areas. Existing OHV use is allowed to continue and is managed to preserve and protect valuable resources such as the mountain meadows. The State of California has funded an operation and maintenance grant for OHV use in Monache. Information patrols and signing are important parts of administration of that grant. OHV use is restricted to existing routes and fencing and signing of adjacent wilderness boundaries has been successful in eliminating OHV trespass.

COMMENT: The expanse of the Limited Access Prescription #17 for Glass Mountain (Area #5054) should be increased. The present boundary, enclosing only narrow corridors along ridges is inadequate to protect the area's values. (1598)

RESPONSE: Prescription #17 is applied to sensitive areas near Glass Mountain. OHV use under this prescription restricts vehicles to existing roads or trails. This essentially preserves the status quo in the area. Glass Mountain has been identified as a potential candidate National Natural Landmark area to be studied and evaluated outside the Forest planning process.

COMMENT: Management Area #5 - Glass Mountain. The Glass Mountain traverse which is shown on the 1977 Interagency Motor Vehicle Use Map is not shown on your Forest Plan map. (1203)

RESPONSE: The motor vehicle use map included with the Draft Plan was not intended to show individual routes. The Forest Plan does incorporate the 1977 Interagency Motor Vehicle Use Map as part of the Plan. This map will be updated after the Forest Plan is adopted and will include participation by the public.

COMMENT: The Mono Craters include many features of scientific and scenic interest. Their interpretation will undoubtedly be an important goal of the management of the Mono Basin National Scenic Area. Please designate the range south to and including the Punch Bowl as Limited Access Prescription #17. (1598) (1617)

RESPONSE: Only the primary management prescription can be applied to any given piece of ground. In this area, the primary management emphases are timber management and range. However, OHV access is managed similar to Prescription #17 in that OHV use is restricted to existing roads and trails. Snowmobile use would be allowed as long as there is sufficient snow cover to protect resource values.

COMMENT: Like many plans, you have confused terms. An off-road vehicle is usually any vehicle capable of off-road travel (four-wheel drive type). An OHV is a non-licensed (Green Sticker) vehicle. You should not use the term off-road vehicle when you mean off-road travel. Even a standard sedan can travel off-road. The only time you should refer to the vehicle is when a route is open to motorized use but not to unlicensed drivers or vehicles, or state that a roughly graded route will be open to unlicensed drivers and uninsured vehicles. (68) (379)

RESPONSE: A section has been added to the affected environment chapter under dispersed recreation that clarifies the terms ORV and OHV. In general the term OHV is the correct one to use when referring to vehicles that are capable of traveling off of two wheel drive roads. These include 4 wheel drive, 3 and 4 wheel all terrain vehicles (ATV's), and motorbikes. Snowmobiles are referred to as OSVs (over-the-snow vehicles).

COMMENT: ORVs should not be allowed anywhere near the Bristlecone Forest. In Prescription #7 - Ancient Bristlecone Pine Forest, delete "Prohibit off-road vehicle use". We agree that there should not be any "vehicle use off designated routes" but use of highway vehicles on designated routes should be allowed. One of the only possible routes for the statewide motorized trail across this range is through the Forest. (1582, 379) (68, 275, 277, 278, 338, 392, 1893, 2177)

RESPONSE: Prescription #7 has been changed to read "Prohibit vehicle use off of roads and restrict vehicle travel to designated routes." This would permit designation of an OHV route as part of the statewide trail system. It has not been determined where this potential route would go, but it will be studied in an environmental analysis. There are no open areas in or adjacent to the Bristlecone Pine Forest.

OFF-HIGHWAY VEHICLES

COMMENT: All other Plans reviewed to date have had OHV maps that reflected the OHV land designation of the Preferred Alternative. We learned at the January 6, 1987 public meeting that your map was of the existing OHV land designation and technically had nothing to do with the Plan. We believe that with a subject as controversial as OHV use, there should be a map showing where use is prohibited, restricted, and unrestricted for both on ground and over snow. We strongly suggest that such a map be included in the Final Plan. This will clarify the Plan for both the pro- and the anti-OHV public. (379) (487, 1431)

RESPONSE: The 1977 Interagency Motor Vehicle Use Map is the map that is adopted for the Forest Plan. It will be revised, using public input, after the Forest Plan is adopted. The motor vehicle use map in the Forest Plan is intended to show broad categories of OHV use for the Forest such as open, closed, and restricted. The 1977 map further defines restricted to mean restricted to existing routes only or to designated routes.

COMMENT: Close the Cottonwood Creek road in the White Mountains to preserve the riparian habitat from vehicular abuse and erosion.

Another respondent expressed the opposing viewpoint regarding the McCleod Road: "The proposed closure of the McCleod Camp road, in order to protect the expanded Paiute Cutthroat Trout Area will eliminate one of the few primitive campsites and fishing areas accessible by 4WD in the Whites; it's never mentioned in the Plan that fishing in Cottonwood Basin will be closed until this fish population stabilizes." (1532, 2171) (153, 174, 1482, 1549, 1590, 1962, 2171)

RESPONSE: The McCleod Camp road is in Management Area #13 and is managed under Prescription #17 which says that existing roads will be maintained at their current levels after designation. All existing roads in the White Mountains will be left open to OHV use as stated in Prescription #17. If there is a problem with the cutthroat trout population, other measures are available to deal with that problem short of closing the road. Direction under Management Area #13 will be changed to remove direction under fish to consider closing the McCleod Camp Road.

Vehicles are restricted to existing routes, so they should not be impacting the riparian areas. If resource damage is occurring to these areas, measures will be taken to control use and rehabilitate the areas. The direction for OHVs under Forest-wide Standards and Guidelines contain criteria that relate OHV use and their impacts to resources such as riparian areas, soil loss, and water quality.

COMMENT: We support the designation of Coyote and Monache as "limited road use" with the stipulation that no new roads be added and the existing roads left in primitive condition so these areas do not become accessible to 2WD vehicles. We oppose any new developments such as campground or roads in Coyote and Monache because they will result in these areas being overused. (1192) (2170)

RESPONSE: No new roads will be constructed into previously unroaded areas. However, existing roads may be reconstructed and dead end segments may be joined together in Monache to provide loop trips to discourage trespass into closed areas. Both these areas will be monitored to determine if two-wheeled vehicles are using the area and causing unacceptable impacts. Should that occur, the Forest can issue an order which would restrict access to 4WD vehicles, bikes, and ATVs only. This process of monitoring and possible restriction can proceed outside the Forest planning process. Campgrounds will not be built within areas designated Prescription #17.

COMMENT: Management Area #8. Support analyzing ORV use and taking action to mitigate resource damage done. I applaud this effort. Especially important in this area are the anti-dune formations found on White Wing Peak. This area receives unacceptable ORV abuses and should receive high-priority attention. (129, 2185) (278, 1532)

RESPONSE: This area is mostly managed under Prescription #14 which allows OHV use only on designated roads and trails. Any use off of these routes would be a violation and subject to citation. This area is also managed under direction for Management Area #8. The Forest recognizes the resource damage now occurring, and appropriate mitigation measures will be taken. Mitigation could include stricter enforcement, better signing, and a stronger information program.

COMMENT: Monache Meadow has persisted over the years as a fine example of Forest multiple use. What threatens this area is the suggested increase in ORV use and the construction of new jeep roads and bike trails. I request that no new roads or trails be built in Monache Meadow especially the suggested new bike trail to and around Monache Mountain. I will agree to the proposal to connect both jeep roads which now dead-end at the south Sierra Wilderness boundary to form a loop. However, this should be done with minimum impact to the meadow habitat. (1180) (272, 381, 382, 487, 1010, 1565, 1887, 2023)

RESPONSE: The question of new bike trails and 4WD connecting loops is being studied in an environmental analysis. That process will be going on outside the Forest Plan. No decision has been made to construct a new bike trail around Monache Mountain. The Forest is not suggesting an increase in OHV use. Management of that area will emphasize semi-primitive non-motorized and semi-primitive motorized activities. An OHV plan will be developed for the area that determines capacities for Monache within which the various resources can be managed without degradation.

COMMENT: Pizona. Increased public media focus on the area will stimulate more 4-wheel drivers. Unless the Forest Service restricts ORV use, the area will become destroyed by new roads. (1261)

RESPONSE: All of the Pizona Management Area #6 is proposed to be managed under Prescription #17 with the exception of the southern end where the emphasis is on deer. Prescription #17 prohibits construction of new roads

into unroaded areas, and direction under the Mule Deer Prescription #4 is to manage OHV use similar to Prescription #17.

COMMENT: In the Paiute Further Planning Area, the Sidehill Spring track should be closed except for use by the grazing permittee. Illegal cutting of bristlecone pine and the proliferation of ORV use must be stopped in this area. (1565) (1653, 1732, 1757)

RESPONSE: The road to Sidehill Spring is in a corridor between two recommended wilderness areas; it would be left open to OHV travel. Woodcutting for this area is proposed to be prohibited above 8,000 feet elevation. Most of the bristlecone pine is located above this elevation.

COMMENT: Please restrict ORV use in the Inyo to the 1500 acre Poleta area which is already heavily used for this purpose. (2101) (5, 151, 166, 266, 288, 298, 934, 970, 1161, 1176, 1433, 1522, 1532, 1539, 1586, 1629, 1780, 1781, 1810, 1928, 2059)

RESPONSE: The Forest Plan incorporates the 1977 Interagency Motor Vehicle Usè Map. This map shows an open area on the Forest know as the Poleta Canyon area. This is the only open area on the Forest. The Forest Plan does not propose any additional open areas. The one area at the southeast end of the White Mountains proposed for Prescription #18 has been changed to Prescription #17. Executive Order #11644 required National Forests to designate open, closed, and restricted areas, and the 1977 Interagency Motor Vehicle Use Map satisfys that requirement.

COMMENT: Management Area #13 - White Mountains. Your map does not show the 4WD trail from Dead Horse Meadow to the Sage Hen Peak area which completes a loop trip up into the Bristlecone Pine Forest. (201)

RESPONSE: The motor vehicle use map with the Draft Plan did not attempt to show all OHV routes. The 1977 Interagency Motor Vehicle Use Map does not even show the OHV route in question. However, the route does exist and there are no plans to close it to OHV use.

COMMENT: Request that you change the management definition of ORV. There is a pressing need to delete 4WD usage from this category because law-abiding (where cross-country travel is illegal) use of 4WD vehicles occurs on travel ways greater than 40" wide explicitly and is often necessary to feasibly reach remote Forest areas. The proposal would create a Level E grade of road on the Forest to include all above-40" travel ways which are primarily suited for high clearance 4WD use. Level D is not suitable because the Plan states that these are either constructed for local access to timber and closed after cutting, or will be maintained for administrative use only. There is an urgent need for another category or revision of the Level D definition to accommodate these 4WD roads/travelways which enables needed remote recreational access. (2065)

RESPONSE: The EIS contains an expanded explanation of OHV terms and their relation to roads, trails, and routes. The Draft Plan and DEIS were weak in differentiating between OHVs, ORVs, and use of vehicles off of roads or 4WD routes.

COMMENT: Request that you manage 4WD roads and trails open unless posted or gated closed as most were in the past for many reasons. (2065)

RESPONSE: For the most part, existing OHV routes are open to use, with the few exceptions where OHV routes are signed closed. The 1977 Interagency Motor Vehcile Use Map lists those areas as restricted to existing routes. However, in some cases, the Forest has sensitive areas such as the Ancient Bristlecone Pine Forest where only a few routes are suitable for OHV travel even though there may be some other existing routes in the area. In this instance, the routes that are open to OHV travel are designated as such and are signed.

COMMENT: Request that you reverse the increasing closure of public lands to vehicular use. (2065)

RESPONSE: Much of the closure of Forest land to OHV use is a result of additional acreage being added to the wilderness system by Congress. By law, motor vehicles are prohibited from using wilderness. OHV use has increased tremendously in the last 10 years. Prior to that increase, there was not the magnitude of problems currently associated with that use. As more people purchased OHVs and brought them to the Forest to use, there were isolated cases of damage to resources such as soil, water, wildlife, and riparian areas. There were additional social conflicts between OHV users and other users such as hikers, stock users, and nordic skiers. In the case of resource damage, the administering agency usually resolves the conflict in favor of the resource by restricting the OHV in space and/or time. In the case of social conflict, an attempt is usually made to bring the affected parties together to work out a solution mutually agreeable to both sides.

COMMENT: We question the advisability of any proposed ORV trail through the Inyo National Forest. This is based on the potential adverse impacts that could result from the proposal, especially those affecting Sierra bighorn and mule deer that seasonally inhabit both National Park and Forest lands. In the event of such a trail being constructed, we believe that the continued well-being of various populations of threatened Sierra bighorn would be sufficient justification to design an interruption or break in the trail, or route it east to the vicinity of U.S. 395 when it would go near existing or potential bighorn populations. This would be especially true for bighorn winter ranges. We would recommend such an adjustment to protect the Lee Vining-Lundy Canyon and the Wheeler Ridge populations. To the south, to insure the continued well-being of the Mount Baxter, Williamson and Langley populations, we recommend any such trail be routed east to the vicinity of U.S. 395 from Birch Creek south to Carroll Creek. (487) (272, 1180)

OFF-HIGHWAY VEHICLES

RESPONSE: The Forest has been issued a grant from the state to study the possibility of designating a north/south OHV route on or adjacent to the Forest. Most all of the preliminary route is on existing roads or 4WD routes. The preliminary location for this route starts at the south end of the Forest near Olancha and travels north to the Lone Pine area, mostly on BLM and City of Los Angeles lands. At Lone Pine the proposed route crosses to the east side of the Owens Valley and travels north to the Independence area. From there it ascends into the Inyo and White mountains, where it drops back down to the valley floor north of Bishop. The route continues north through Casa Diablo country and Banner Ridge area eventually ending north of the Pole Line Road north of the Mono Basin Scenic Area. This segment is part of the statewide trails system on a north/south route called Sierra East. The route avoids any Sierra mountain sheep or mule deer range. Actual location and designation of the route will be studied in an environmental analysis, taking into account alternative routes.

COMMENT: The area from roughly Mammoth Mountain to Mono Lake is an ideal OHV area. The Sierra Safari is a classic event and events like it should be encouraged by the Forest Service. I do not see a need to overly develop the area, just allow the use to go on in a manner which is not overly managed. (45)

RESPONSE: The Sierra Safari is a recreational event and is handled through the special use permit process. It is not within the scope of the Forest Plan to address this specific activity. Requests to conduct this event and any other recreational event are handled on a case-by-case basis based on the special use permit application and the ability of the proponent to meet the terms and conditions of the special use permit.

COMMENT: I highly approve of your plans to decrease the area available to off-road vehicles and to increase the miles of roads and trails available to them. (47)

RESPONSE: The Forest Plan does not specifically decrease the area available to OHVs. Areas recommended for wilderness would be managed status quo to preserve their wilderness characteristics. Any appropriate OHV use now occurring in those recommended areas could continue as long as the character of the area is not changed. Prescription #18 allows for construction of roads.

COMMENT: Do not cooperate with the State of California State-wide OHV Trails Plan. It is expensive and adversely impacts all other Forest users. (381)

RESPONSE: The Pacific Southwest Region of the Forest Service (California) has agreed to cooperate with the State in their State-wide Trails Plan.

COMMENT: I am writing in hopes that these areas will not be closed to vehicles so my children will be able to enjoy them as I have (White Mountains, the Coyote and Buttermilk areas). (1390) (486)

RESPONSE: There is no direction that would close an area now open to OHV use with the exception of any areas which Congress might designate as wilderness. Those areas managed under the Mule Deer Emphasis Prescription may have some seasonal closures to protect wildlife, but they would be open to OHV use most of the time.

COMMENT: I was appalled that your slide shows showed a moto-cross racetrack on Forest Service land. This is not an appropriate use of public land, and it should be eliminated. (1539)

RESPONSE: The present permittee for the moto-cross does not wish to continue operating. The Town of Mammoth Lakes derives some economic benefit from the operation of this permit because it brings people into the area in early June. There is also a demand from motorcyclists to use the course area during the season, and the presence of this course is an opportunity to concentrate this type of use in one area. There is a possibility that the area under permit may again operate under a new permittee, as long as the permittee can meet all requirements of the permit. In the event there is no permittee, the course will be rehabilitated.

COMMENT: I vigorously recommend that Prescription #18 be redesignated as Prescription #17 in all roadless areas. Prescription #18 is only appropriate for open sacrifice areas such as Poleta Canyon. "Designated roads and trails" as the term applies to Prescription #17 could be defined as meaning paved public roads, and public roads and trails which are signed open. All unsigned roads and trails should be construed to be closed. (1839) (138, 328, 332, 381, 444, 481, 1163, 1167, 1274, 1332, 1421, 1532, 1583, 1589, 1608, 1613, 1664, 1722, 1777, 1801, 1868, 1900, 1907, 1922, 1923, 1928, 1930, 2045, 2054, 2060, 2115, 2129, 2147, 2185)

RESPONSE: Prescriptions #17 and 18 have been rewritten. Prescription #18 generally restricts OHVs to existing roads and open areas. Poleta Canyon is the only open area on the Forest. Paved public roads are not considered OHV routes and do not come under the 1977 Interagency Motor Vehicle Use Plan. The Forest is divided into three categories for OHV use: open, olosed, or restricted. The restricted category is signed in two ways: restricted to existing routes or to designated routes. In areas restricted to existing routes, OHVs may travel on any existing route unless it is signed closed. In other restricted areas, OHVs may only travel on designated routes which are signed open to travel. Any other existing route in or adjacent to the designated route would be closed to OHV use even though it may not be signed as such.

COMMENT: Regarding OHV use, I find that the current level of access roads are sufficient to satisfy the demand. I have driven many of the roads in this region and find that their use is substantially less than most trails that I have backpacked. A wide variety of habitats are readily accessible to OHV users. (1866)

OFF-HIGHWAY VEHICLES

RESPONSE: Any proposal to construct new OHV routes would first be addressed in an environmental document which includes public participation. There are no plans to substantially increase existing OHV routes. However, some realignment or new construction may be necessary to protect resources or to facilitate OHV travel on the Forest.

COMMENT: I do not agree that the 1977 Interagency Motor Vehicle Use Plan, which prohibits motor vehicles off designated roads and trails, should be adopted in the Inyo's Final Plan. (1935)

RESPONSE: The Forest Plan does adopt the 1977 Interagency Motor Vehicle Use Plan as being the best and only plan available at this time. However, it does need updating, a process which will occur with public participation after the Forest Plan is adopted. The 1977 Plan prohibits OHVs off of designated routes only in areas where routes have been designated and signed as such. OHV use on most of the Forest is restricted to existing (as opposed to designated) routes.

COMMENT: Dexter Canyon and Glass Mountain should be designated as limited access. (1988)

RESPONSE: Dexter Canyon and Glass Mountain are covered by Prescription #17. The other portions of these two areas that are covered by Prescriptions #10 and #11 which contain recreation direction that restricts OHV use to existing roads, the same as Prescription #17.

COMMENT: As far as I can tell, the Plan contains no provision for the state-wide motorized trail system. This item should be included in the Plan because the Inyo National Forest has Green Sticker grants to locate a trail through the Forest. (1893)

RESPONSE: Please refer to the Standards and Guidelines for off-highway vehicles in the Final Plan. They state: "Cooperate with the State of California in developing a State-wide OHV Trail Plan."

COMMENT: We are strongly opposed to the proposed construction of 36 miles of new ORV trails. (140)

RESPONSE: The mileage figures in the Plan are only an estimate. Any plans to construct new OHV routes would be covered by NEPA regulations, and the analysis process would include public involvement. Only after this process is completed would it be possible to proceed with a new construction project.

COMMENT: Forest-wide Standards and Guidelines for off-road vehicles. Add to (1): "1977 Interagency Map will be updated and reprinted in quantities sufficient to meet the need for public education and protection of roadless resources". Add to (4): "When necessary, critical wildlife and fish habitat will be closed to ORV use."

RESPONSE: The Forest recognizes the need to revise the 1977 OHV Map and that process will occur when the forest planning process has been completed. Revision will include public involvement and recognize any changes to the existing plan which may be necessary to protect critical wildlife and fish habitat.

COMMENT: Management Area #6 has a 4WD route that comes from Nevada along Huntoon Creek and then crosses through the Excelsior Mountains to Rattlesnake. A portion of this road travels up a dry streambed which appears to be designated as ROS semi-primitive non-motorized. This is unacceptable because it would interrupt existing established vehicle routes. (1807)

RESPONSE: The area in question will be examined and the line for primitive non-motorized ROS class will be moved so as not to exclude any existing OHV route. Motorized use is allowed in areas with the ROS class semi-primitive non-motorized designation. However, when inventoried routes and trails are present, the area is designated as semi-primitive motorized. The change will be made to the ROS Class inventory.

COMMENT: Prescription #18 - Open Roaded. Add to the facilities element: "Allow no new road construction that would degrade important wildlife habitat". Add the following to the protection element: "After consultation with Forest Service and Department of Fish and Game biologists, develop a plan describing let burn sites for wildlife habitat improvement." In some cases, we feel that boundaries of the open roaded prescription should be changed in the Preferred Alternative to Prescription #17 - Limited Access. These changes are shown on the enclosed map. (2190)

RESPONSE: Any new road construction would be preceded by an environmental analysis, including public involvement, to assure, among other things, that the project considers any important wildlife habitat. The Forest policy on fire suppression takes into account let burn areas on certain parts of the Forest. Wildlife considerations are a part of that policy. Confinement or containment are two of the three fire suppression strategies that could allow fire to burn in certain areas under certain, prescribed conditions.

COMMENT: Prescription #17 - Limited Access. All lands south of the Owens River Gorge should be designated Prescription #17. (140)

RESPONSE: Designating all lands under Prescription #17 would be neither practical nor desirable. The primary resource importance of a given area of Forest land is the determining factor in selecting what prescription to apply to that land. Prescription #17 was meant to be applied to areas where recreation and/or wildlife values are prevalent. Applying a prescription to a piece of land does not, in itself, rule out direction that may be contained in another prescription. When looking at the 1977 Interagency Motor Vehicle Use Map, it is apparent that most of the land open to OHV use south of the Owens River Gorge is restricted access, in that OHV use is confined to existing or designated routes.

COMMENT: Forest-wide Standards and Guidelines for off-road vehicles. I strongly agree with these standards. There should be a guideline for enforcement to assure that the designations in the Plan are obeyed. 36 CFR 295.2 (A) should be applied rigidly. (225)

RESPONSE: The monitoring and evaluation process will evaluate whether the Standards and Guidelines are met. Enforcement guidelines are not appropriate.

Over-Snow Vehicles

COMMENT: I would like to see the Plan limit the use of snowmobiles along the eastern side of San Joaquin Ridge in the winter and to see the dirt roads along its crest closed to off-road vehicle use. (1875)

RESPONSE: The Forest Plan proposes to allow snowmobiles only on designated routes or corridors between San Joaquin Ridge and U.S. 395. There will be routes designated on-the-ground where snowmobiles may travel. This contrasts with the area east of U.S. 395 where snowmobile use is restricted only by adequate snow cover. The one summer designated OHV route along the top of San Joaquin Ridge to Deadman Pass will remain open under the 1977 Interagency Motor Vehicle Use Map which will be undergoing a revision outside the Forest planning process. This revision will involve input from the public, and at that time, all options for OHV use on the Forest, including San Joaquin Ridge, will be considered.

COMMENT: The permit area for Sierra Meadows Ski Touring Center should be shown as closed to snowmobiling on the snowmobile use map. (1099)

RESPONSE: The area in question will be changed on the update of the 1977 Interagency Snowmobile Use Map which will occur after the Forest Plan is approved.

COMMENT: ROS map. The Lakes Basin should be classed as semi-primitive motorized due to the administrative use of snowmobiles, machines to set track and utilities access. Also, if the area is accessed by permit. The ROS designation of semi-primitive non-motorized along Sherwin Lakes Trail contradicts the snowmobile use map. The semi-primitive non-motorized designation along the Minaret Summit contradicts future ski area development and existing jeep trails along the summit. (1099)

RESPONSE: The ROS class for the Lakes Basin reflects the primary use of the basin which is summer use. The roaded natural classification most properly fits this area. Administrative use of the Lakes Basin in the winter by snowmobiles by the nordic permittee, Forest Service, search and rescue, or fire personnel is authorized by permit or an exemption to the Forest Order which closed this area to motorized OSV vehicles. Use of OSVs by the general public is prohibited by a Forest Order.

COMMENT: The Plan does not address the impact timber management has upon OSV recreation. OSV recreation or snow play activity areas are not recognized on the preferred management prescription map; nordic and alpine skiing are recognized. Smokey Bear Flats is listed as timber management whereas the 5-year old commercial snowmobile operation at Smokey Bear Flats is not noted at all. We request that the map reflect OSV recreation. Request a formal agreement for multiple-use be prepared for each permittee and that plowed roads for logging activities be either restricted to certain non-peak snow months or carefully mitigated with current users. (1104)

RESPONSE: Management prescriptions that are applied to a specific piece of National Forest land reflect the predominant resource for that area. The fact that a timber prescription is applied does not mean that there cannot be other resources or activities, such as OSV use, taking place. Winter is the preferred time of year to log since the timber can be skidded across the top of the snow and does not disturb the soil and archaeological resources. Direction for recreation under the High Level Timber Management Prescription (Rx #10) allows for OSV use when there is sufficient snow cover to protect soil and vegetation. Direction under the timber management prescriptions will include mitigation measures that would require timber operators to provide access across plowed timber roads for officially designated nordic and snowmobile trails by knocking down the snow berms.

COMMENT: Winter use of snowmobiles seems to be under better control than in the past, but we need to be sure that they stay on designated roads. (914)

RESPONSE: Snowmobile use will be managed under the 1977 Interagency Snowmobile Use Map. This map will be revised after the Forest Plan is approved. The snowmobile use map does not restrict snowmobile use to roads, since, for the most part, roads are not distinguished when there is adequate snow cover. There are many marked snowmobile trails, and these follow road corridors.

COMMENT: I would like to see the snow on both sides of U.S. 395 stay open to snowmobiling. OSVs belong on the snow and require snow to run. The west side of U.S. 395 is where the best snow is located and sometimes the only snow. (1130) (53, 70, 143, 153, 183, 1112, 1113, 1114, 1116, 1119, 1123, 1127, 1131, 1132, 1137, 1138, 1140, 1141, 1147, 1149, 1153, 1156, 1362, 1429, 1592, 1726, 1727, 1728, 1741, 2120, 2127, 2240)

RESPONSE: In the area where use is limited as shown on the snowmobile map included with the Draft Plan, snowmobiles would be restricted to designated corridors which are signed on-the-ground. The Forest Service will develop a winter map which will delineate both nordic and OSV use in line with direction in the Forest Plan. This would occur when the 1977 Interagency Snowmobile Use Map is updated after the Forest Plan is approved.

COMMENT: Maintain snowmobile access in Sherwin/Laurel area until the ski area is developed. (1099) (231)

OVER-SNOW VEHICLES

RESPONSE: Both the 1977 Interagency Snowmobile Use Map and the Draft Forest Plan Snowmobile Use Map show the Sherwin/Laurel area as open to snowmobile use. It is premature to discuss what might happen to snowmobile use in the event there is a new ski development at Sherwin.

COMMENT: I have been snowmobiling in the Mammoth area for the past 4 years and am very much opposed to the area closure. I feel you should redesign the area to make it desirable and useable to both skiers and snowmobilers. (1136) (339, 1152)

RESPONSE: The decision on snowmobile use in the Lakes Basin is being handled in an environmental analysis outside the Forest planning process. The analysis includes public participation. The decision of that analysis will become part of the management direction for Management Area #8 - Mammoth Escarpment.

COMMENT: Snowmobile corridors should be maintained between June Lake and Mammoth Lakes. At the present time, the Town Trails Committee has shown a snowmobile trail in the Lakes Basin area. (1891)

RESPONSE: It may be possible to designate a corridor west of U.S. 395 between Mammoth Lakes and June Lake. The actual designation of a corridor would be a part of the public involvement process when the 1977 Interagency Motor Vehicle Use Maps are updated after the Forest Plan is approved. Also, see the above response.

COMMENT: I would like to see a plan developed allowing OSV to have free use of the areas suitable for snowmobiling. I am aware that the area has to be protected from three- and four-wheel use. But, when the area is covered with enough snow to safely operate a snowmobile, the snowmobile will not damage the growth beneath it. There are many areas west of U.S. 395 that are desirable to visit. As the Mammoth area has grown, the snowmobile trails in the area have been taken over by skiers. They find that the groomed trails the snowmobiles produce are easy to use.

Most of our group visit your area only a few times a year, and when we do, it is not possible for us to come south to obtain permits ahead of time. We all work six days a week and snowmobile on Sundays. We are interested in keeping the area open to snowmobiling, and, if a permit must be obtained for a trip west of U.S. 395, that it be obtainable by phone so that it could be mailed to us in time for our visit. We also are very interested in keeping the area south and east of the Mono Craters open. It is this area and the south and central Mono Craters themselves that we normally ride. We ride the Mono Mills area and south to the Pumice Flat below the lookout station on Glass Mountain.

We are aware of the need for more areas for the skiers and none of us want to be put onto a path that will result in an accident involving a snowmobile with a skier. But, having a large investment in our sleds, we do not want to be forced out of the only areas that we can use. We need at least 12" of

snow and the open area east of U.S. 395 does provide that most winters. It would be nice to be able to ride the back roads west of U.S. 395 from time to time. Most of them used to be designated as snowmobile trails. (99) (81, 153, 457, 911, 1105, 1115, 1117, 1118, 1120, 1121, 1124, 1125, 1128, 1134, 1135, 1139, 1142, 1143, 1144, 1145, 1146, 1148, 1150, 1155, 1612, 1645, 1845)

RESPONSE: The existing 1977 Interagency Snowmobile Use Map and the Draft Forest Plan Snowmobile Use Map both show the area south and east of Mono Craters as open. There are no plans to change that. The area west of U.S. 395 on the Draft Forest Plan Snowmobile Use Map is mostly limited use; snowmobile travel is allowed on vehicle routes not designated closed. There is some open area immediately adjacent to U.S. 395. However, the Preferred Alternative adopted in the Forest Plan does not include any open OSV areas west of U.S. 395. OSV use will be restricted to designated corridors. A corridor to allow snowmobiles to travel north from Mammoth Lakes to the June Lake area would be considered in the update of the 1977 Interagency Snowmobile Use Map. Other corridors open to snowmobiles would also be considered for designation. The 1977 Interagency Snowmobile Use Map will be updated after the Forest Plan is adopted.

COMMENT: Support the Preferred Alternative position of no snowmobiling west of U.S. 395. (1176) (147, 163, 231, 278, 293, 300, 324, 328, 329, 332, 340, 358, 377, 381, 383, 398, 400, 419, 430, 437, 438, 449, 466, 498, 923, 950, 952, 953, 978, 980, 998, 1008, 1032, 1107, 1159, 1162, 1167, 1168, 1180, 1191, 1202, 1218, 1224, 1232, 1253, 1274, 1277, 1317, 1332, 1362, 1388, 1399, 1402, 1407, 1421, 1427, 1469, 1485, 1487, 1496, 1498, 1529, 1532, 1537, 1539, 1541, 1545, 1546, 1548, 1549, 1556, 1565, 1572, 1583, 1584, 1585, 1589, 1591, 1622, 1638, 1653, 1674, 1683, 1695, 1731, 1732, 1757, 1759, 1777, 1789, 1806, 1816, 1841, 1854, 1858, 1862, 1865, 1868, 1902, 1907, 1926, 1927, 1930, 1931, 1933, 1948, 1964, 1971, 1975, 1980, 2045, 2054, 2066, 2113, 2117, 2122, 2129, 2132, 2143, 2142, 2143, 2147, 2155, 2159, 2161)

RESPONSE: The wording in the Final Plan has been modified. The intent is to allow controlled snowmobile use west of U.S. 395 within designated corridors such as one to Inyo Craters. The Forest Plan will still emphasize snowmobile use east of U.S. 395 and dispersed winter and summer recreation west of U.S. 395. These corridors would be identified in the public involvement phase of the update of the 1977 Interagency Motor Vehicle Use Plan.

COMMENT: I oppose any use of the National Forest by snowmobiles. (998) (1176, 1532)

RESPONSE: President Nixon signed Executive Order #11644 on February 8, 1972. The purpose of this order was to "...establish policies and provide for procedures that will ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands." It also went on to say "the regulations shall further require that the designation of such areas and trails shall be in accordance with the following: areas and trails shall be

located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors."

It is not a question of whether or not to have snowmobile use on the Forest, but rather where can this use fit in with other existing or proposed uses while minimizing conflicts.

COMMENT: This Plan is in favor of hikers and cross-country skiers, and denies snowmobile and off road use in an area where both have been compatible for years. The Plan doesn't discuss the difference in amount of snow and length of coverage east and west of U.S. 395. There are about three good years in ten on the east side of U.S. 395. The Plan doesn't show any difference between snowmobile use, which doesn't harm the area, and off-road vehicles which might. Let's all live together. (1879)

RESPONSE: The Forest Service will develop a winter map which will delineate both nordic and OSV use in line with direction in the Forest Plan. This will be done when the 1977 Interagency Motor Vehicle Use maps are updated using public involvement. This would occur after the Forest Plan is adopted. Some snowmobile use can occur west of U.S. 395, but it would be restricted to designated corridors. There would not be any open OSV areas west of U.S. 395.

COMMENT: I don't like to see any more land closed to snowmobilers. We as snowmobilers are paying for a green sticker every 3 years and use parking tickets, and there are not many places to ride. We do not do any damage to the terrain, so why take away what little enjoyment we've got? We are tired of seeing our Green Sticker money going to other things. We are a responsible organized club, and we are tired of all our riding areas taken away from us. The snow covers any land we ride on so we do no damage to the terrain. Why don't you focus a little on 4WDers or possibly motorcycles? (101) (1099, 1104, 1105, 2165)

RESPONSE: It is not the intent of the Forest Plan to discriminate against snowmobile use. The Forest requested and received a Green Sticker grant to do preliminary work on the Lookout Mountain Trailhead, which will be a snowmobile staging area on the east side of U.S. 395 near the Scenic Loop Road to Mammoth. This is a substantial project and should benefit many snowmobilers. It is not possible to have open snowmobile areas mixed with nordic ski areas due to the conflicts that inevitably result. Any snowmobile use must be compatible with existing or proposed uses in an area; see previous response relating to President Nixon's Executive Order).

COMMENT: Request two separate ATV/OHV maps be developed, one for winter and one for summer. In addition, the winter and summer OHV map should be titled "off-highway vehicle" as opposed to the snowmobile map titled "over-snow vehicle". Also, the open and closed designations should be the same. Currently, the maps reflect opposite open/closed designations, and this is

confusing. Our groomed trails for our commercial operation are destroyed each week by 4WD vehicles. Signing and barriers are needed as well as communication and proper maps. (1104) (153)

RESPONSE: After the Forest Plan is approved, both the 1977 Interagency Motor Vehicle Use Map and the Snowmobile Use Map will be updated using public involvement. Most likely, the winter map will also include other types of winter use such as nordic skiing. The three categories relating to OHV use (closed, open, and restricted or limited) are applied differently relative to OHV and OSV use. With adequate snow cover, much of the area now used can be managed as open, especially east of U.S. 395 where no competing uses occur. In some cases, wildlife concerns differ between summer and winter use, and these concerns would be reflected in different use restrictions. In the case of wilderness and certain classified areas, no motor vehicle use of any kind is permitted and these areas would be labeled closed for both maps.

COMMENT: Plan III-12 and Facilities Map. The Draft Plan specifically states a need for increased use for both nordic and OSV facilities. The Plan allocates a specific area for a nordic ski center, proposes a Forest Service road to the center at White Wing, and then proposes to restrict or close off all other forms of recreation to that area. Other forms of recreation traditionally prohibited near nordic ski centers are snowshoeing, snowmobiling, and hiking. The Plan needs to reflect a means for obtaining its stated goal to meet the needs of the OSV community. The two Green Sticker projects pending with the state are not reflected in the Plan. Continue to pursue state off-road highway funding sources to develop snowmobile facilities east of U.S. 395. The Plan stated that the national trend in forest recreation management is to encourage private investment in developing and managing recreation sites on public land. The Forest Service continues to approach the private sector to develop nordic skiing but does not approach the private sector to develop OSV or other snow play activities. The OSV community is in need of marked and groomed trails, plowed parking areas, multiple-use recreation areas, and lodging that will access the county-wide trails. The Forest Service goals within the Plan for developing OSV trails are not clearly stated. (1104, 1099)

RESPONSE: At the time the Draft Plan was written, the Forest did not know the status of the Green Sticker grant for Lookout Mountain Trailhead. At the present time, only the planning dollars for this project have been approved by the OHV Commission; these planning dollars still must pass the Governor's budget process in July 1988 before they can be allocated to complete the environmental analysis. This analysis will determine the scope of the project, including potential summer use as well as a winter staging area for snowmobiles. The Forest has two existing snowmobile permittees which operate rental programs. There are many kilometers of marked snowmobile trails and the permittees groom their own trails for rentals. There is a lack of off-highway parking to safely unload snowmobiles. One of the purposes of proposing the Lookout Mountain Trailhead was to satisfy this need for safe parking. The towns of Mammoth Lakes and June Lake contain sufficient lodging to meet the present demand.

OVER-SNOW VEHICLES

COMMENT: Alpine ski development within Sherwin Bowl need not close off OSV recreation, but will enhance it as pointed out in our report about snowmobiling in Mono County dated August 1985. Mammoth Mountain's development at Hartley Springs again need not close or restrict OSV recreation but enhance it with shared parking/facilities. These areas need not be closed or restricted and we oppose the current proposal on the OSV map to close and restrict these two areas. (1104) (1099, 2165)

RESPONSE: The Forest Plan proposes to keep the area east of U.S. 395 as an open area for snowmobiles. Snowmobile use west of U.S. 395 will be restricted to designated corridors. These corridors will be located and agreed to during the revision process of the 1977 Interagency Motor Vehicle and Snowmobile Use Maps. The Forest Plan does not close the area near the proposed Sherwin Bowl Ski Area. The area within the Town of Mammoth Lakes is restricted to snowmobile use, but the area out Old Mammoth Road and near Sherwin Creek Campground is open for unrestricted OSV use.

COMMENT: The Mono Craters (Area #5288) are an exceptionally beautiful chain of rhyolite volcanos. They may be the best example of this type of landform world-wide, yet their beauty and their value as a natural resource is especially susceptible to degradation by motor vehicles. I urge that all vehicles, ORVs, mountain bikes, snowmobiles, and helicopters be kept out of the Mono Craters. We have a fantastic volcanic landscape there, but it is soft and easily marred by vehicle travel. Even snowmobiles, which generally ride up on the snow cover, have cut through to the soft pumice in many places and have left extensive tracks. I feel that it is difficult, if not impossible, to restrict snowmobile use to times and conditions that will only allow safe, non-destructive travel. Therefore, I urge that their use in the Mono Craters be excluded altogether so that people may enjoy this unique resource without any vehicle scars. There are thousands of acres of Forest land nearby in which to enjoy snowmobiling. Let's protect this one fragile corner of the Forest from it. (1579)

RESPONSE: The management plan for the Mono Basin National Forest Scenic Area is being developed outside the Forest planning process. That document will address the use of OSVs for the portion of the Mono Craters area that is presently used by OSVs. The portion that lies outside the Scenic Area is proposed to be left open to OSV use, assuming there is adequate snow cover to protect the resources. By adequate snow cover, we mean enough so that the OSV will not dig into the ground and leave tracks that can be seen in the summer.

COMMENT: Snowmobiling is a fast-growing winter sport, and it's family oriented. With snowmobiles costing as much as $5,500, it is a growing economic force. If the Plan is adopted as proposed, the Southern California snowmobilers will have no reason to purchase snowmobiles if they do not have a reasonable place to ride for an enjoyable experience. This will result in loss of sales at dealers and loss of business to the local services. (2204)

RESPONSE: Former President Nixon's Executive Order stated that OHV (including OSVs) use can occur on federal land if it does not conflict with

existing or proposed uses. It must also be compatible with basic resources such as soil, water, and vegetation. The Forest will provide for OSV use within that framework. The proposed Lookout Mountain Trailhead is a positive step toward providing a staging area for snowmobiles.

COMMENT: The Mammoth Lakes Town Council recognizes the community need to offer diversified winter recreation. The Mammoth Lakes General Plan direction is to support winter play developments and activities and favors supporting over snow vehicle recreation within the Town of Mammoth Lakes, Mono County and the Inyo National Forest. (922) (102)

RESPONSE: The intent of the Forest Plan is to allow OSV use wherever it is compatible with basic resources and other uses. The section in Forest-wide Standards and Guidelines for off-road vehicles will be revised to read off-highway and over-the-snow vehicles (OHV and OSV). Management direction will pertain to both these categories. In addition, the 1977 Interagency Motor Vehicle and Snowmobile Use Maps will be revised after the Forest Plan is adopted. The revision process will include public involvement from all user groups.

COMMENT: Object to the areas permitted for snowmobiling, specifically Devil's Postpile and Rock Creek. These should be for nordic skiing instead. (121)

RESPONSE: The Devil's Postpile area is now essentially restricted from snowmobile use due to the extension of the Ansel Adams Wilderness boundary to include Mammoth Pass. The only other way down to this area is via the Minaret Road which is generally too steep and unsafe due to avalanche paths. Occasionally, there may be times when snowmobiles can access this area, but for the majority of the time it will be unavailable.

The Rock Creek area is closed to public snowmobile use above the parking area at East Fork. The permittee may use a motorized OSV to access his operations at Rock Creek Winter Lodge.

COMMENT: Snowmobiles should be restricted to designated and signed roads and trails. (214)

RESPONSE: The 1977 Interagency Snowmobile Use Map is the regulating document for snowmobile use. After the Forest Plan is approved, that map will be updated, using public involvement, and will probably be retitled Over The Snow Vehicle Use Plan. In some areas, it is appropriate to restrict OSV use to certain trails or corridors. In other areas, as long as there is sufficient snow cover to protect vegetation and soil resources and no conflicts are identified with other users, there would be no reason to restrict OSV use.

Nordic Recreation

COMMENT: Cross country ski areas should be promoted, especially in the country around Deadman and Glass Mountain which is proposed for and being logged. Facilities should be provided such as parking areas, restrooms and campgrounds which are open in the winter. Reconsider developed nordic skiing in the Inyo Crater area. I would like more parking for cross country skiers at places like the Obsidian Dome ski trail on U.S. 395 and along the Mammoth Scenic Loop. (79, 163, 1548) (20, 24, 48, 50, 57, 63, 75, 78, 80, 88, 94, 114, 175, 214, 225, 278, 298, 303, 313, 314, 339, 351, 370, 430, 443, 901, 906, 933, 943, 1013, 1099, 1104, 1105, 1202, 1361, 1388, 1430, 1519, 1539, 1566, 1579, 1586, 1591, 1592, 1611, 1613, 1629, 1634, 1731, 1777, 1791, 1836, 1889, 1891, 1923, 1926, 1933, 1975, 2035, 2060, 2112, 2156, 2170, 2180, 2185)

RESPONSE: As a result of public comment, much of the area between Mammoth and White Wing has been designated Prescription #16 which has been modified and retitled. This area will include the large pocket of red fir located at the base of San Joaquin Ridge. The predominant recreational activities in the area will consist of summer and winter trail use of all types. Emphasis will be on hiking, equestrian, mountain bike, and nordic trail opportunities. Snowmobile use will be by designated corridors. Summer vehicle use will be limited to existing designated roads. Facilities could include parking, toilets, interpretive and picnic developments, and a moderate nordic ski center with both groomed and ungroomed trail systems. Specific recreation management direction is included in Prescription #16 - Dispersed Recreation. The area around Glass Mountain, as well as many other areas around Mammoth and June Lake, will be available for backcountry nordic skiing and will not be in conflict with the high timber management prescription or other prescriptions.

COMMENT: The section on dispersed recreation should include a discussion of dispersed backcountry, the winter equivalent to hiking. Unfortunately, all references in the Plan and DEIS are to "developed" nordic skiing with nordic "centers" and groomed trails; this developed nordic skiing is unaccountably referred to as "dispersed". Developed nordic skiing is not "dispersed" recreation, but is much like alpine skiing with lodges, restaurants, and shops. Backcountry nordic skiing should be discussed separately in the Plan. (2170)

RESPONSE: In the Resource Environment description in the Plan, we mention developing facilities that support nordic skiing. These facilities can range from parking lots and toilets to food services, rentals, and groomed trails. Not all nordic skiing takes place on prepared trails; backcountry skiing is recognized as a valuable and desirable form of recreational skiing. Our definition of "dispersed nordic skiing" refers to the course or trail that is used by the skier whether it is groomed track or cross country. Once the skier is on the trail, the use is considered a form of dispersed recreation. The developed portion is the base facility that contains the amenities that support the skiing activity. Just as hiking takes place on prepared trails and is considered a dispersed activity, so is nordic skiing. The description is very brief and is intended to only point out the key points of the

analysis of the management situation. It is not an in depth description of the full range of dispersed activities and opportunities.

COMMENT: Like to see toboggan hills. (901)

RESPONSE: The developed recreation direction calls for developing day use, interpretive, and information sites and trails, and to coordinate with other agencies for development and maintenance needed to provide parking for snow play and nordic skiing. Appropriately located parking and associated facilities can be developed for snow play areas in general. However, the Forest Service will not specifically develop toboggan hills nor be responsible for maintenance and administration of such, mainly from a liability standpoint. These facilities could be provided through a concessionaire.

COMMENT: Permit developed nordic trails within Prescription #14. Please add to the developed recreation directives: "Allow for snowplay activities and facilities. (1099, 1638)

RESPONSE: Nordic trails would be possible within areas designated Prescription #14. Until a decision regarding alpine ski development is made in these areas, dispersed recreational activities including nordic skiing are appropriate uses. In areas with attractive nordic opportunities, design of facilities to accommodate both nordic and alpine would be possible if identified and coordinated through the environmental analysis process. Recreation direction allows for a full range of dispersed activities.

COMMENT: A more proper use of the Glass Creek area would be for a low cost cross-country ski area. (1652)

RESPONSE: The Glass Creek area is and will continue to be available for backcountry nordic skiing.

COMMENT: I support Prescription #16 for the Inyo Craters area. The Dry Creek and Inyo Craters cross-county ski areas must be developed to provide the cross-country skier/visitor with a quality experience. Current projected cross-country SAOTs are not accurate in comparison to actual potential growth. 12-15,000 SAOTs would probably be more accurate. (1099, 556) (50, 79, 175, 339)

RESPONSE: The growth curves used to project nordic ski use were the highest available to us as we realized that nordic skiing was the fastest growing activity on the Forest. Much of the growth in nordic skiing, in the Mammoth area, is related in part to the overall growth in alpine skiing, the increased capacity of Mammoth Mountain, the limits on the alpine ticket sales, and alpine skiers taking advantage of both sports. The activity has mushroomed in the last few years; there is not a long history of growth or a firm idea of where the nordic ski industry is going. In the future 12,000-15,000 SAOTs may be a possibility; however, added onto the total

potential alpine skiers, the capacity of the resource to provide alpine and nordic terrain will probably not be the limiting factor for development. Instead, growth may be limited by the ability of the community to meet the basic needs of the recreation population.

COMMENT: If groomed trails must exist, they should be put in places where facilities and parking already are developed, such as near present downhill skiing operations. They should not be put in wilderness areas. (943)

RESPONSE: Groomed trails would not be allowed in wilderness. However, they would be allowed outside of wilderness on lands suitable for a wide range of recreational opportunities and where coordinated with other ongoing activities. It may be possible to combine nordic with alpine base facilities if conflicts between the two uses are mitigated and adequate room and facilities exist for both.

COMMENT: There is no mention of ROS restrictions other than for nordic ski opportunities. Need to clarify. Also state snow and non-snow uses separately. (68) (379)

RESPONSE: We have deleted the reference to ROS restrictions for nordic skiing from Prescription #16. The Nordic Ski Prescription #16 has been modified and renamed Dispersed Recreation. Please refer to the rewritten direction for recreation and timber management in the Prescription.

COMMENT: The Forest Service provides five free areas and also groom several areas which may include Shady Rest, Obsidian Dome, Inyo Craters, June Lake Junction, and west of the Scenic Loop Road out of Mammoth. With all the budget cuts the Forest Service has faced, I cannot see spending the money to keep up these areas. (1105)

RESPONSE: Only the Shady Rest and Obsidian Dome areas are occasionally groomed, and then mostly by volunteers. The other trails may give the appearance of grooming due to the use of these marked routes by snowmobiles. Almost all of the recreation budgets are utilized in maintaining and administering summer oriented recreation facilities.

COMMENT: The timber management guidelines in Prescription #16 are a major problem. In the DEIS summary of Prescription #16, it is stated that "...(timber harvest) direction follows that in the modified timber management prescriptions...". However, the timber guidelines in Prescription #16 are identical to the guidelines in Prescription #10 - High Level Timber Management except the size of clearcuts which is intermediate between Prescription #9 - Modified Timber and Prescription #10. High level timber management is not compatible with the nordic skiing experience. Timber should be managed as per other developed recreation areas such as Prescriptions #13 or #15.

In Prescription #14, please add the following under timber: "Allow timber production only where it has been documented to be cost-effective." Please add to third recreation directive: "..other management activities such as snow play facilities in the area." Please add to the sixth recreation directive: "Allow ORV and mountain biking." Please add the following recreation directives: "Encourage the development of a hut system between June Lake and Mammoth Lakes. Encourage the conjunctive use of base facilities for nordic and alpine purposes." In Management Area #7 - Upper Owens River, eliminate Prescription #16. Provide instead, for dispersed backcountry nordic skiing in this area. (1631, 1638, 2170)

RESPONSE: Both the prescription and the management of timber have changed in the Final Plan. Prescription #16 has been rewritten and renamed; it recognizes the dispersed recreation values, activities, and opportunities available in the Deadman area that are important resources adjacent to the Town of Mammoth Lakes. No one recreational use will dominate, but the area will be developed with trail systems that take the best advantage of the natural character of the inherent resources. Timber management activities will no longer include the red fir area as it will be dropped from the timber base. The Jeffrey pine west of U.S. 395 will be managed to maintain uneven aged stand characteristics with opening sizes not to exceed 3-5 acres. Management direction for these prescriptions have been totally rewritten.

COMMENT: I find it misleading that extensive harvest of virgin red fir is planned in Prescription #16 as well as Prescription #10, yet most people will look at Rx #16 on the map and say "oh, a nordic center", not "oh my, old growth red fir harvest". (1634) (1013)

RESPONSE: Prescription #16 has been totally rewritten to emphasize dispersed recreation, summer and winter, and to concentrate on dispersed nordic ski opportunities as opposed to developed nordic facilities. Developed facilities could still be part of the total package. The timber management prescription applied will be an uneven-aged management emphasis which fits better with the recreational emphasis in the area.

COMMENT: Prescription #16 - Nordic Ski Area. Modify the first paragraph under recreation to read: "Offer an economically viable area for commercial nordic skiing operations through a prospectus to the private sector." (1013)

RESPONSE: Prescription #16 has been extensively revised and retitled Dispersed Recreation. As stated in the description, "Emphasis is on dispersed non-motorized winter recreation to accommodate the increasing public demand for nordic skiing and snow play without significantly detracting from summer dispersed recreational opportunities." The paragraph you reference has been deleted. The paragraph that talks about commercial nordic skiing now reads "Permit commercial developed nordic operations only in areas of existing and potential alpine base facilities. These will be modest day-use facilities."

RESEARCH NATURAL AREAS

COMMENT: We propose the abolishment of designated Research Natural Areas. These areas should be incorporated into wilderness and wilderness recovery areas. (298) (166, 266, 1634, 2101)

RESPONSE: Research Natural Areas (RNAs) can be even more restrictive than wilderness designation. RNAs can be included within wilderness such as the Last Chance RNA within the Golden Trout Wilderness. The objectives of establishing RNAs are as follows:

1. Preserve a wide spectrum of pristine representative areas that typify important forest, shrubland, grassland, alpine, aquatic, geological, and similar natural situations for research, study, observation, monitoring, and those educational activities that maintain unmodified conditions.
2. Preserve and maintain genetic diversity.
3. Protect against serious environmental disruptions.
4. Serve as reference areas for the study of succession.
5. Provide on site and extension educational activities.
6. Serve as base line areas for measuring long-term ecological changes.
7. Serve as control areas for manipulative research.
8. Monitor effects of resource management techniques and practices.

Protection and management standards for RNAs are to maintain unmodified conditions and natural processes. Logging is not permitted. Grazing is permitted only where it is essential to maintain a specific vegetative type. Recreation is only permitted where it does not threaten research or educational values. Roads, fences, or signs are prohibited unless they contribute to the objectives or to the protection of the area. RNAs are withdrawn from mineral entry after they become established.

COMMENT: Having hiked through McAfee Meadow, I know that cows do graze there and have for a long time. Why must access to this area be closed so things can stay as they have been for a hundred years? (989) (2171)

RESPONSE: Refer to the above response on the objectives for RNAs. After an RNA is established, a management plan must be prepared for the area. This management plan insures maintenance of the objectives for which the Research Natural Area was originally established. In managing the vegetation, if such practices as livestock grazing are to be used to maintain ecologic conditions, the management plan would describe those practices, explain their use, and list their proposed scheduling.

The Forest can identify transportation plans that would adversely impact the area. Conversely, the Forest can also indicate the RNA's impact on the Forest transportation system. The management plan for the RNA would deal with the question of existing access and whether or not that access would be appropriate for management of the area for the purposes for which the RNA was designated. Access for recreational use of the area would not be appropriate.

COMMENT: I am pleased to see that the Forest is attempting to meet the demand for Research Natural Areas (RNA). However, the Forest has not made any provision for a red fir vegetation type RNA. I recommend that an RNA be established for the red fir vegetation type found along San Joaquin Ridge just west of Mammoth. (1433)

RESPONSE: Research Natural Areas are part of a national network of field ecological research areas. Regional Foresters and Research Station Directors establish a regional Research Natural Area committee to determine needs for RNAs within each Region and each National Forest. RNAs are located to best represent the ecological conditions needed to complete the natural area system. The Research Natural Area committee has not identified the red fir ecosystem on the Inyo as a needed addition to the system; it is already represented elsewhere within the California Region or nationally.

COMMENT: I commend the Forest Service efforts to identify and protect major vegetation types present in the Inyo, and I support this management prescription for the seven recommended areas. However, I do have several comments about the management of target vegetation types, primarily for research, study, and observation on Draft Plan IV-58. This is an inadequate criterion for managing a research area serving biological/ecological researchers. Thus, the introductory statement on Page III-28 should be amended to read: "The purpose is to maintain the ecological integrity of native plant and animal communities, including natural population levels, for the purpose of...." (1611) (381, 1519)

RESPONSE: Please refer to the following statement in Plan Chapter III: "Candidate RNAs are managed so that their natural ecosystems are protected until the establishment process is completed." Protecting natural ecosystems implies "maintain(ing) the ecological integrity of native plant and animal communities, including natural population levels...". This direction will retain the characteristics of the candidate areas until such time as they can be considered for RNA status.

COMMENT: The National Audubon Society supports the designation of RNAs. An important addition to the Forest Plans would be providing criteria outlining RNA needs and goals and how the Inyo Forest intends to help Region 5 meet those goals. We support the establishment of the two candidate RNAs of McAfee Meadow and Whippoorwill Flat as outlined in the DEIS. Interim management and protection plans will need to be included in the Final Plan and EIS for the candidate RNAs. We are pleased that current direction states it is protecting these areas, but we are concerned that current direction and personnel might change. It would be a tremendous loss if the candidate RNAs were damaged prior to final RNA designation. The interim protection of proposed RNAs should become a management priority. (1411) (129, 954, 1549, 2047, 2183)

RESPONSE: Management Prescription #5 - Research Natural Areas applies not only to established RNAs but also to candidate RNAs. As stated, the purpose is to maintain the ecological integrity of target vegetation types.

Management direction for each of the various resource elements is targeted to achieve that stated purpose. The fact that there is a prescription targeted for RNAs shows that it is a management priority.

Management direction for candidate RNAs is also spelled out in the establishment report prepared prior to actual designation. Once the RNA is established, then the management plan further defines its protection and management.

COMMENT: The Indiana Summit Research Natural Area is only 1,162 acres which is far too small to meet this purpose; moreover, all of the surrounding lands are "managed for commercial timber production" per DEIS III-80. We urge the Forest Service to provide far greater protection for this unique resource by creating or expanding Research Natural Areas or by adopting management that will ensure preservation of a functioning, pure Jeffrey pine ecosystem. The EIS should also specifically identify the location of the remaining Jeffrey pine old growth and discuss the impacts of proposed management on that resource. (1649) (1631)

RESPONSE: When the Indiana Summit RNA was proposed, the boundary for the area was drawn with thought given to its location and size being sufficient to protect the Jeffrey pine resource. The Chief of the Forest Service and his committee that oversees RNA proposals agreed that the proposal was sufficient for protection and management standards. The fact that adjacent stands of Jeffrey pine are managed for commercial timber production does not affect the RNA or its stated purpose. An enlarged RNA is not needed and management activities outside the RNA have not been shown to have any effect on the RNA for the purposes for which it was established.

COMMENT: The McAfee RNA which is nestled at the end of the Barcroft Mountain Road has been proposed and, if established, will be another area strictly off limits to the average citizen. Access will be discouraged except for qualified persons for research in order to preserve a unique alpine ecosystem. The necessity of establishing this area escapes me since the Forest Service states on DEIS Appendices I-1 to I-3 that there are no developments or signs of disturbances within the area, and that it is unlikely that natural processes would be substantially altered by any proposed management of the area and its surroundings. This area also includes that extremely rare and naturally occurring phenomenon known as a stone corral which is dominant enough to show on the Forest Service map. (1588) (989, 2171)

RESPONSE: Your comment that McAfee Meadow area is unique alludes to the outstanding attributes of the area. The Forest Service is charged with locating those Research Natural Areas that best represent the ecological conditions needed to complete the natural area system, where conflicting uses are minimal. The Great Basin alpine steppe vegetation type is both a regional RNA target element and an element as yet unrepresented in Research Natural Areas on federal lands elsewhere in the nation. The McAfee Meadow area meets the key criteria applied to any candidate RNA of size, access, manageability, freedom from developments or signs of disturbance, low

potential for conflict with existing or potential uses, and quality stands of target vegetation.

COMMENT: DEIS Appendix I states that both candidate RNAs contain rare plant species. These plants should be specifically listed in the Final Plan and EIS under the RNA candidate description. (1108)

RESPONSE: Forest policy is not to publish specific site locations of rare plants.

COMMENT: Allowing energy exploration and development is not compatible with the concept and purpose of RNAs. (382)

RESPONSE: An energy element for Prescription #5 - Research Natural Areas has been changed to read: "Allow no energy exploration or development". Your comment was correct; the two are not compatible.

COMMENT: I support the Preferred Alternative because this Plan will protect the Mono Basin National Forest Scenic Area, Ancient Bristlecone Pine Forest, and the Hoover, Ansel Adams, John Muir, Golden Trout, and South Sierra Wildernesses. This Plan will recommend statutory wilderness status for Table Mountain (4,100), Tioga Lake (900), White Mountains (53,000), and Paiute (54,000) for their important features. This Plan will protect Indiana Summit, Harvey Hall, White Mountain, Last Chance Meadow, Sentinel Meadow, Whippoorwill Flat, and McAfee Research Natural Areas. This Plan will protect the North Fork Kern, South Fork Kern and Middle Fork San Joaquin proposed wild rivers. This Plan will establish Papoose Flat granitic intrusion, Buttermilk granitic domes, Hot Creek Starkweather glacial polish, Tioga Tarns, Inyo Craters group, Earthquake Fault, and Convict Lake special interest areas for their important features. This Plan will recommend White Mountains, Mono Lake and Mono Craters, Indiana Summit, Monache Meadow, Harvey Monroe Hall, Last Chance Meadow, Long Valley, Mono Mesa, North Fork Oak Creek, Olancha Peak, Onion Valley, Ritter Range, San Joaquin Ridge, Sentinel Ridge, Shingle Mill bench, Aberdeen volcanic field, Alabama Hills, Banner Springs bunchgrass, Convict Creek, Coyote Ridge, Coyote Flat, Division Creek and Glass Mountain for National Natural Landmark status for their important features. (24) (1026)

RESPONSE: The Plan only recommends establishment of additional Research Natural Areas; they would be designated outside of the Forest planning process. However, direction under Management Prescription #5 would protect RNAs, both established and recommended.

Under Forest-wide Standards and Guidelines, the direction is to undertake no management activities that would preclude designation of candidate rivers as a Wild and Scenic River. This would protect them for possible inclusion into the system, which is the responsibility of Congress.

The Plan does not recommend special interest areas. However, the EIS recognizes the potential of several identified special interest areas which

the Forest intends to evaluate with the possibility of recommending some to the Regional Forester for classification. That process will take place outside of the Forest planning process. Most of the potential candidates for National Natural Landmarks receive recognition under current management; others have been identified for evaluation as potential special interest areas.

Direction under the Forest-wide Standards and Guidelines are to evaluate and recommend candidate special interest areas for classification and candidate National Natural Landmarks for nomination by 1990.

COMMENT: Request that the following Standards and Guidelines for Research Natural Areas and Special Interest Areas be adopted: "To protect areas of outstanding scientific, scenic, botanic, or geologic values as Research Natural Areas, national natural landmarks, or special interest areas, the Forest shall:

A) Establish RNAs for baseline ecological study, protection of gene pools, and as habitat for Forest-listed sensitive plant species,

B) Inventory and recommend National Natural Landmark status for those sites illustrating the geological and ecological diversity of the U.S.

C) Inventory and recommend SIA status for areas of outstanding nationally significant geologic, botanic, zoologic, paleontologic, or other natural values.

D) Protect and preserve the values of special areas as identified in the establishment report or area management plan to conform with management area direction and applicable prescriptions." (108)

RESPONSE: The direction under Forest-wide Standards and Guidelines for Research Natural Areas adequately covers the inventory and establishment process. Direction for managing potential or established RNAs is completely covered under Management Prescription #5 - Research Natural Areas.

Direction for protecting the only established special interest area, the Ancient Bristlecone Pine Forest, is covered under Forest-wide Standards and Guidelines for special interest areas and under Management Prescription #7. Actual evaluation and recommendations for additional SIAs or NNLs would take place outside the Forest Plan by 1990.

RIPARIAN AREAS

COMMENT: Protecting riparian areas is a focus of particular concern. The banks of streams and ponds are easily damaged. Such damage is difficult and sometimes costly to repair and recovery is slow, especially at high altitudes. (1175)

RESPONSE: The Forest-wide Standards and Guidelines give particular emphasis to protecting riparian areas. The Plan sets forth disturbance standards which apply to each stream type. Other management direction is also aimed at protecting the riparian areas on the Forest.

COMMENT: The following Standards and Guidelines should be incorporated into those included in the Plan and DEIS. Without these additions, CNPS does not believe sufficient protection of riparian and wetland habitats is guaranteed.

1. Incorporate the new definition for wetlands and SMZs that we have included above.
2. Class I, II and III streams should have visual quality objectives of retention or preservation.
3. Maintain or improve wetland and riparian-dependent resources in wetlands, stream corridors (Order 1 and greater), lake shore areas, and around seeps, springs, and meadows.
   A. Where uses conflict, favor protection of wetland and riparian dependent resources (water, fish, vegetation, wildlife, and aesthetics) over other resources.
   B. Identify wetlands and riparian areas prior to land disturbance, and apply appropriate prescriptions to ensure protection of dependent resources.
   C. Prepare and adhere to a project implementation plan for any activity within wetland or riparian habitats, and include at least the following:
      - Objectives for vegetation management based upon the needs of dependent management;
      - Maximum amount of vegetation manipulation, and manipulation procedures, that will occur;
      - Maximum area of soil exposed, and erosion control measures;
      - Analysis of areas with very steep slopes (>60%), very high erosion potential, or high instability, and describe procedures to limit disturbance to these areas
      - Opportunities and procedures for restoration of degraded areas.
4. Within the SMZ, old growth conifers or hardwoods should be retained for snag dependent wildlife species and for large woody debris input needed for stream stability and fish habitat.
5. New road systems will be designed and constructed to minimize disturbance to the riparian areas. Transport of sediment from disturbed areas shall be minimized by ponding, vegetative buffer strip, or other means.

In addition, the Standards and Guidelines should: 1) Describe the amount of canopy to be left intact if harvest occurs in the SMZ as well as detailing any, and the extent of, regeneration cuts in permitted SMZs, and 2) Under Standards and Guidelines #50 and #60, native vegetation should be added to the list of resources (fish, wildlife, water quality) that are protected in riparian areas. (1108) (91, 1161, 1411, 1433, 1562, 1617, 2183, 2190, 2196, 2210)

RESPONSE: Refer to following comment and response for a definition of riparian areas. Direction already exists that gives preference to riparian dependent resources in these areas, thus your Comments #2, #3 and #4 are not considered necessary. Substantial changes have been made in the Forest-wide Standards and Guidelines in the Final Plan to strengthen riparian area direction.

COMMENT: The riparian areas should be outlined in a separate Management Prescription in a similar format as that for Wild and Scenic Rivers (Plan

IV-64). The Standards and Guidelines within this Prescription should specify water quality objectives including those equal to California standards. (2183)

RESPONSE: The protection and management of riparian areas is guided by Forest-wide Standards and Guidelines. Water quality objectives are set in the Standards and Guidelines also. These resources are adequately protected by present laws, policy and direction in the Plan.

COMMENT: There should be a greater emphasis and effort on reducing erosion and siltation by increasing the number of check dams in streams and meadows which have been overgrazed and overtrampled. (III-29, IV-21 and IV-31). The Standard and Guideline #5 for rehabilitation of riparian areas should be given a much higher priority. (382)

RESPONSE: We believe that the Forest-wide Standards and Guidelines for riparian areas and water quality protection indicate that these resources have a high priority. However, we are not setting a high priority on one particular method of improving these resources. We agree that many riparian areas need some form of restoration work to repair the damage from past management practices. However, we are also faced with the reality of budget and manpower constraints. Setting a priority of preventing further damage to reasonably healthy riparian systems and using low cost (easy to construct and maintain) restoration methods are key to our making progress in restoring all riparian areas. Check dams will be used where alternative control methods are determined not to be cost-effective or not capable of achieving the desired results.

COMMENT: No management activities should take place in riparian areas until an inventory is completed and specific directions given for protecting all riparian areas. (1858)

RESPONSE: It is unrealistic to shut down the Forest until an inventory is complete. Forest-wide Standards and Guidelines will provide direction for management of riparian areas to a level that benefits riparian dependent resources.

COMMENT: Opposed to use of the arbitrary 100 foot wide zone for SMZ and protection of riparian vegetation. Often wetland and riparian vegetation extends more than 100 feet from the water's edge. Request that the Inyo National Forest include provisions within its definition of the SMZ to protect wetlands based upon the presence of wetland indicator plants, wetland soil types identified by the Soil Conservation Service and certain types of hydrologic situations. (1108)

RESPONSE: We are no longer using the term streamside management zone (SMZ). The riparian definitions provided in the Plan allow for three different physiographic stream types. These riparian areas will respond differently to impacts. Riparian widths in wet meadows will be very different than for steep v-shaped canyons. The Standards and Guidelines attempt to recognize these differences and manage riparian areas accordingly. The use of

indicator plants is not always a good method for determining riparian area width because yearly fluctuations in flows can cause annual changes in distribution of herbaceous species, and plant species may only be useful for identifying the immediate riparian area and not areas adjacent to the riparian area. Riparian areas identified in the Plan are largely based on specific vegetation communities. The guidelines transcend beyond the immediate riparian zone. The wording in the Standards and Guidelines have been strengthened to include the above concepts.

COMMENT: Limiting SMZs to perennial creeks is totally inadequate. Protection was intended to be extended to intermittent and ephemeral streams. (1108)

RESPONSE: Managing riparian areas is not limited to only perennial streams. The emphasis provided by the riparian and watershed Forest-wide Standards and Guidelines are also applicable to habitats in and adjacent to intermittent and ephemeral streams. Refer also to the previous response.

COMMENT: Meadow communities are barely mentioned in the Plan, and should be treated separately in the Standards and Guidelines section. Request the following items be included in the riparian/meadow Standards and Guidelines: "Meadows shall be managed to ensure the protection and maintenance of native plant and wildlife species diversity and vegetative cover.

1. No seeding or planting of non-native plant species shall occur;
2. Best Management Practices shall be implemented to protect meadow vegetation and maintain plant cover;
3. Where uses conflict, favor meadow-dependent resources over other resources;
4. Utilization of meadow vegetation shall not exceed levels set forth in the Forest Service Manual."

Also, with respect to meadows, would like to see the following concepts in the Plan or DEIS as goals, minimum management requirements, or Standards and Guidelines:

1. Forest management shall not result in meadow degradation including loss of vegetative cover and soil, or reductions in species diversity.
2. Meadows on the Forest will be inventoried, and those found to be most significant will be protected and managed by use of a special Management Prescription with customized grazing regimes and monitoring. (1108)

RESPONSE: Meadows are considered riparian areas. Standards and Guidelines that apply to riparian areas also apply to meadows. Stream Type C is an example of meadows. Non-native species will only be used for revegetation purposes if native species are not successful in soil stabilization, or if native species are not available. Your Items #2 and #3 are already addressed in the guidelines in either riparian or watershed sections. Regarding your Item #4, standards for grazing in meadows will not exceed established utilization standards. These standards will be set in the allotment management plans for specific allotments and are dependent on vegetation and soils condition and trend. Meadow inventories have already been conducted on the Inyo and meadow restoration work is already initiated based on the prioritization that resulted from that inventory. Standards and Guidelines

already state that riparian areas will be managed primarily for riparian values, thus degradation of these areas will not be permitted.

COMMENT: No trees should be cut within 50 feet on either side of a Class 1 through Class 3 stream. Any proposed stream crossings should be evaluated by an interdisciplinary team including a qualified fishery biologist, soil scientist, and engineer. Monitoring of multiple use activities may be necessary to insure the selected Plan does not result in an increase of stream sediments. (1248)

RESPONSE: The existing Standards and Guidelines sufficiently address this.

COMMENT: Riparian Areas, DEIS II-44. We need to know more clearly how you define "consistent resource damage". Also, what are "unacceptable changes" in the riparian areas? When would the location of new roads, campsites, etc., be "absolutely necessary"? (1431) (487)

RESPONSE: These terms are defined on a site specific basis by resource professionals.

COMMENT: The prohibition on management activities that cause unacceptable changes in streams and lakes applies only to new management activities. This prohibition should apply to all activities including grazing and various developments. Even moderate increases in grazing impacts for riparian areas (as predicted) should not be allowed, and grazing may have to be curtailed or eliminated in some riparian areas. (2023) (319, 1532, 1586, 1617, 1629, 2170, 2190)

RESPONSE: For the most part, the Standards and Guidelines for riparian areas do apply to new activities. However, where the opportunity arises, activities will be modified to meet Forest-wide Standards and Guidelines. For example, the Standards and Guidelines will be used in the range allotment management planning process to provide direction for riparian dependent, fish, and watershed resources. There is no increase in grazing levels in the Final Plan.

COMMENT: Management Area #7. Develop water sources to minimize grazing damage to riparian areas. (1099)

RESPONSE: Your suggestion has been added as one possible way to improve riparian areas as a Standard and Guideline.

COMMENT: Specify how you will protect these riparian and watershed areas from livestock grazing, any further downhill ski development or other recreational interests, logging, ORV use, hydroelectric developments, etc. Carefully define the word "conflict" in your statement "...resources dependent on riparian areas receive priority over other resources where the two come into conflict." The riparian areas and watersheds should be managed primarily for wildlife. Other uses should be allowed only when it is known

that wildlife and the riparian resource will not be damaged. Support the Preferred Alternative's statement that resources dependent on riparian areas should receive priority over other resources. (980, 1532, 1933) (3, 65, 177, 214, 231, 264, 300, 322, 324, 329, 333, 351, 358, 430, 449, 467, 471, 481, 498, 903, 933, 935, 953, 968, 976, 978, 979, 998, 1008, 1009, 1024, 1029, 1031, 1032, 1107, 1171, 1174, 1176, 1180, 1191, 1202, 1223, 1229, 1274, 1277, 1283, 1295, 1317, 1398, 1407, 1414, 1427, 1429, 1431, 1464, 1485, 1487, 1498, 1513, 1514, 1517, 1519, 1521, 1543, 1548, 1549, 1565, 1566, 1574, 1576, 1579, 1585, 1589, 1593, 1594, 1608, 1611, 1617, 1625, 1632, 1633, 1634, 1648, 1652, 1656, 1657, 1659, 1660, 1662, 1709, 1714, 1715, 1725, 1730, 1731, 1744, 1749, 1774, 1776, 1777, 1785, 1798, 1801, 1804, 1816, 1837, 1841, 1851, 1862, 1865, 1871, 1873, 1876, 1893, 1902, 1904, 1907, 1928, 1930, 1973, 1977, 1980, 1983, 1987, 2030, 2031, 2034, 2035, 2045, 2054, 2061, 2066, 2091, 2115, 2117, 2120, 2152, 2161, 2170, 2190, 2194)

RESPONSE: We define "conflicts" using the following statement from the Preferred Alternative description for riparian resources in the EIS: "Prohibit any activities in riparian areas that would have unacceptable long-term effects on water quality, fish, other aquatic fauna, wildlife, or water-dependent plant life. Fish habitat and watershed improvement work discussed under separate heading would also be expected to benefit riparian areas." The Forest-wide Standards and Guidelines for riparian, fish, wildlife and range have been substantially revised to add more specific information. The FEIS and Final Plan make a clear commitment to the protection of riparian habitats.

COMMENT: A riparian element is only used in some of the Management Prescriptions. In order for the Management Prescriptions to be compared with one another and be comprehensive, they all require inclusion of the same elements. For riparian and riparian-dependent resources; the elements of fisheries, riparian, threatened, endangered and sensitive species; watershed; and wildlife should be included in all Prescriptions. To best alleviate this problem, and ensure adequate protection of riparian and wetland habitats from multiple use, CNPS recommends that a separate Management Prescription for riparian and wetland habitats be developed using some or all of the ideas we have outlined above. (1108)

RESPONSE: The Forest-wide Standards and Guidelines apply to all resources in each Management Area. An element is only added if more specific direction is needed for a particular Management Area.

COMMENT: Riparian habitats are not receiving the attention they deserve. Comments used for riparian habitats such as "consistent resource damage" and "unacceptable changes" lead us to believe that a certain level of increased impacts may be acceptable. Specifically, the Plan and DEIS point out that 50 miles of stream have had the water removed on Inyo National Forest, that much of the range is in poor or unsatisfactory condition (CNPS assumes that if the range is in poor condition then riparian areas must be),and 90% of meadows are damaged or threatened by accelerating erosion.

Erosion is so bad on the Inyo National Forest that the Plan and DEIS sound as if Inyo National Forest has given up on trying to rectify the matter which is

stated to be critical in the future. CNPS cannot support this casual attitude about a serious problem. Inyo National Forest needs to maintain an open mind about the future and the potential availability of techniques to deal with the accelerating erosion problem. Need to experiment with new techniques and find a solution. Should make a strong commitment in the Plan to this effect. (1108) (29, 274, 319, 437, 1107, 1176, 1295, 1586, 1634, 1650, 1784, 2047, 2122, 2170, 2190, 2213)

RESPONSE: This comment lumps several different parts of the Plan. The Inyo has a record of aggressive watershed restoration work. Meadows on the Inyo were intensively surveyed a number of years ago, and restoration work initiated as a result of this inventory. I believe the 90% damaged meadow figure comes from the assumption that out of 26,000 acres of meadow, 23,500 are being proposed for watershed restoration. Thus, 23,500 acres out of 26,000 must be in poor condition. This is not necessarily true.

COMMENT: Specific directions are lacking in the Plan and particularly in the discussion of the management in the various areas. The Preferred Alternative proposes that only 17,000 acres of the 26,000 acres of wet meadow be managed for full watershed restoration, in contrast to the 23,500 acres recommendation in the AMN Alternative. Since wet meadows comprise more than 2/3 of riparian vegetation on the Inyo, it is extremely important to restore as much as possible of this valuable resource. (2023)

RESPONSE: In the DEIS, we put a financial constraint on the FORPLAN model in the Preferred Alternative that resulted in restoration work on only 17,000 acres. The FEIS and Plan recommend that all 23,500 acres be treated.

COMMENT: The DEIS III-82 states that there has been accelerated erosion, especially in wet meadows, primarily due to overgrazing in the past. Further, it is stated that there has been a decrease in riparian diversity due to heavy recreation (DEIS III-22). Since riparian and wetland areas represent only two percent of the Inyo National Forest (DEIS III-22), it is in the Forest's interest, and legally mandated, to not only protect these areas, but to also improve them. The Final Plan and EIS should include specific management plans, Minimum Managment Requirements and Standards and Guidelines for protecting and improving riparian and wetland habitats. Simply stating that removal of the current grazing pressure would not alleviate the erosion problem (DEIS III-82) is not adequate. The Inyo National Forest should actively pursue measures to maintain areas. (2047) (104)

RESPONSE: The Forest-wide Standards and Guidelines provide adequate protection for the management of riparian areas. Removing grazing pressure without restoration work on streams would not necessarily alleviate erosion. Once headcutting and streambank deterioration begin, aggressive restoration work will be required to alleviate these problems. Once these areas are restored, then grazing management practices stated in the Forest-wide Standards and Guidelines should be sufficient to protect the meadows.

COMMENT: Range (DEIS IV-76). A total of 6,400 acres of wet meadow will be subject to accelerated erosion. The Forest Service seems to think this is an "insignificant figure"; "It is not great enough to noticeably affect Forest-wide outputs." This is unacceptable under the Preferred Alternative. (1617)

RESPONSE: The 6400 acres is roughly the difference between 17,000 acres that were proposed for treatment in the Draft Preferred Alternative and the 23,500 recommended for treatment in the Amenities Alternative. This 6400 acres will be added into the Final Preferred Alternative for treatment.

COMMENT: One criticism of the Plan is its attitude concerning the continuance of grazing on meadows with accelerating erosion problems. Inyo National Forest maintains that removing livestock would not benefit the meadows or improve conditions. This seems highly implausible considering the results achieved throughout the west. Countless studies, many by USFS personnel have demonstrated the success of livestock exclusion and recovery of badly unstable riparian habitats. Sod-forming vegetation and willows reinvade quickly and stabilize banks. Excluding livestock and possibly planting seed and willow cuttings could do wonders in short time periods. Check dams, gabions, and other structures can trap eroding soil. A strong commitment in the Plan under Standards and Guidelines would go a long way in providing some guarantees that we can expect future changes.

CNPS believes that seriously eroding meadows should be withdrawn from grazing allotments; there is no adequate justification for exposing these meadows to continued stress.

CNPS further maintains that the Inyo Forest cannot justify increased stocking rates on allotments with eroding meadows. Standards and Guidelines will not keep increased numbers of cows out of these meadows, only fences or removal of livestock can achieve this. Inyo National Forest cannot justify increasing AUMs on allotments with damaged meadows because of the monies proposed for meadow restoration. The money is needed for past problems and besides, there is no guarantee that Congress will appropriate the money for meadow restoration in the future. (1108) (281, 319, 1160, 1431, 1776, 1939, 1983, 2170)

RESPONSE: Given the pumice soils on the Inyo, once headcutting or streambank degradation occurs as a result of grazing or other impacts, the water table drops and the characteristics of the meadow shifts to more xeric vegetation communities. Once this occurs, merely removing livestock will not suffice in restoring the meadows. Watershed restoration work can raise the water level and shift the meadow back to more mesic plant communities. Implementation of grazing recommendations in the Standards and Guidelines for riparian areas should insure the protection of meadows following this work. There are several methods that could be used for restoring meadows and aquatic ecosystems. A few include fencing, revegetation, check dams, gabions and reducing stocking rates. Every case is different and may require different restoration measures. There is no increase in AUMs in the Final Plan.

RIPARIAN AREAS

COMMENT: An inventory of riparian habitat on the Inyo National Forest could be most beneficial. (1433) (161, 176, 239, 381, 487, 953, 980, 1108, 1431, 1532, 1548, 1565, 1617, 1634, 1648, 1660, 1664, 1670, 1723, 1842, 2136, 2141, 2178)

RESPONSE: We have intensively inventoried meadow riparian areas and have prioritized these meadows for watershed restoration work. Our next goal is to inventory remaining aquatic and riparian areas.

COMMENT: In addition to setting a date for the inventory's completion, the Plan should stipulate that no management activities which may degrade riparian areas are to take place until the inventory is finished. (2170) (910)

RESPONSE: Forest-wide Standards and Guidelines state that no degradation of riparian areas will occur.

COMMENT: From my experience in the protection, recovery and monitoring of riparian habitats, I recommend that the frequency/reporting period be changed from the stated 5 years/10 years cycle to 1 year/2 year cycle for the first 10 years and then switched to a longer cycle time interval after the tenth year. Recovery of riparian areas after installation of gabions, fences, etc., is rapid and a large volume of beneficial data is lost if monitoring is not conducted on the cycle I have recommended. (1433) (1617)

RESPONSE: Increasing the frequencies of project monitoring would allow for a better evaluation of the results, but it is doubtful that funding will be available for this. Given the intensity of data collection, the number of riparian/aquatic ecosystems, and the number of improvement projects, a one or two year frequency and reporting period are not realistic. There may be areas that are considered especially sensitive that will be put under such a monitoring scheme, but for the most part a longer time frame will be used.

COMMENT: Monitoring objectives for proper use, appropriate livestock numbers, compliance with area management plans, effectiveness of area management plans, need to be written into the Plan. Utilization tables showing proper use levels for key species should be included. Some critical areas to consider are the Kern Plateau, Coyote Flat, the Sierra escarpment from Shannon Canyon to Tinemaha Creek, and the White Mountains. (2170) (1632)

RESPONSE: Riparian direction stated in the FEIS and Plan will be implemented using specific allotment management plans. Significant direction has been added to the and Standards and Guidelines for range and riparian areas and the Range Prescription #11 regarding how this will be accomplished.

COMMENT: Riparian Areas, Issues and Concerns (II-14). The Plan does not seem to comply with the strong legal requirements on riparian management (See 36 CFR 219.27 [E]). Also, the definition of the problem is wrong. The Plan does not have to establish the significance of riparian areas, but their

extent, condition, and necessary management actions. Indicators should include the impacts of roads and ORV use. (2170) (1617)

RESPONSE: The Standards and Guidelines for riparian areas and range have been substantially modified in the Final Plan. Please refer to these sections.

COMMENT: The statement that, under some alternatives, grazing impacts "...would be associated with the 1,000 to 2,000 acres of wet meadows found in areas on which grazing increases under some alternatives" does not recognize existing destruction of riparian habitat and aspen types, especially along the base of the Sierra (e.g., Bohler Canyon area, Parker Bench vicinity, and in the Glass Mountains) where deer and other wildlife habitat is heavily degraded. The destructive effects of livestock on riparian areas and aspen groves will be reduced by curtailing the amount of time livestock spend there; management practices which will be used to accomplish this goal include fencing, salting, herding, water development and deferring or eliminating grazing." Change the wording on DEIS II-60 regarding riparian areas to read: "prohibit any activities in riparian areas that would have unacceptable long-term effects on water quality, fish (or other aquatic fauna) or water-dependent plant life." (2170, 1617) (1649, 2190)

RESPONSE: Riparian management direction was significantly strengthened in the Forest-wide Standards and Guidelines. These Standards and Guidelines will be implemented using allotment management plans as the vehicle for implementation.

COMMENT: Regarding Forest-wide Standards and Guidelines for Riparian Areas:
- Good Plan recommendations: #1, 2, 3, 5, 6, and 7.
- Modify #4 to: "When unacceptable damage (as defined in Forest-wide Standards and Guidelines for riparian areas) is occurring, the grazing season will be delayed. If delay is unsuccessful in preventing damage to riparian habitat, livestock grazing will be eliminated in the affected areas."
- Add to #8: Definition of "surface disturbance" and description of extent of area away from stream.
- Other additions:

A. The integrity of desert springs in the White, Inyo and South Sierra Mountains to preserve them as habitat islands for relict populations of rare, sensitive, and yet undiscovered species should be maintained.
B. All Standards and Guidelines listed for soil, water and range management should apply to riparian areas.
C. The importance and distinctive values of riparian areas should be recognized when implementing management activities. Preferential consideration should be given to riparian area dependent resources over other resources in cases of otherwise unresolvable conflicts.
D. Riparian areas should be delineated and evaluated before implementing any management activity.
E. Range and wildlife habitat improvement projects and/or silvicultural prescriptions should be designed to benefit riparian area dependent resources.
F. Riparian areas should be managed to achieve or maintain high ecological status.

RIPARIAN AREAS

G. Priority should be given to range, wildlife habitat, and watershed improvement projects that will rehabilitate riparian areas that cannot be restored in a timely manner by other management techniques. Fencing should be used for protection of riparian areas only where no other workable alternative exists.
H. On streams where Lahontan cutthroat and Paiute cutthroat trout are present or scheduled for introduction, the riparian areas should be maintained or improved to a "good" or "excellent" resource value rating for fisheries.
I. Beaver should be managed to maintain or enhance riparian condition within habitat capability.
J. Attempts should be made to achieve at least 90% of the natural bank stability for streams supporing Lahontan or Paiute cutthroat trout; 80% should be aimed for on all other streams.
K. Salt and sheep bed grounds should be located at least 1/4 mile outside riparian areas.
L. New livestock water developments should be placed outside riparian areas.
M. Inventoried water developments should be moved out of riparian areas when and where feasible.
N. A mineral evaluation by qualified geologists, mining engineers, or mineral specialists should be required before approval of operating plans in key riparian areas.
O. Direct and indirect support of flood plain development and new construction in wetlands should be avoided wherever there is a practical alternative.
P. The Forest should take advantage of opportunities to resolve and preserve the natural and beneficial values served by flood plains, and to preserve, enhance and appropriately manage the natural and beneficial values of wetlands.
Q. Fish passage should be provided at all crossings of known fish habitat by meeting the fish passage requirements and adhering to guidelines specified in "Fish Migration and Fish Passage, a Practical Guide to Solving Fish Passage Problems." (USDA Forest Service, Region 5, September 1977).
R. The land manager, utilizing interdisciplinary team inputs, should assure that any necessary stream alteration is carried out in accordance with prescribed specifications to meet at least the following performance criteria:
   1. Avoid channel changes wherever feasible.
   2. Make every reasonable effort during any needed channel work to preserve the natural aquatic environment or minimize adverse effects. Where channel changes are necessary, do not increase natural channel velocities in the affected stream reach. Assure this by installing drop structures, by constructing acceptable meanders, or by other approved methods. If a stream supports a fishery, design drop structures to permit fish passage.
   3. Where water velocities are increased by placing of a bridge or culvert, or other activity, and thus precludes established fish movement upstream, install suitable facilities to allow for unrestricted fish passage.
   4. Limit construction and other activities affecting stream channels to those periods when such activities will have the least detrimental

effect on the aquatic environment, unless emergency situations arise.

5. Take adequate mitigation measures if construction or other activities will adversely affect water temperatures.
6. Defer construction and other activities affecting channels above spawning areas if they will adversely affect eggs or alevins in the gravel.
7. When channel changes or alterations are the best alternative, provide mitigating measures to enhance replacement of the aquatic habitat to as near a natural condition as possible.
8. Maintain streamside vegetation if feasible; if destroyed, replace vegetation to provide for the necessary needs of the aquatic environment.
9. When channel changes are unavoidable, complete new channels (including scour and erosion protection) before turning water into them.
10. Locate and treat construction equipment service areas in such a way as to prevent gas, oil or other contaminants from washing or leaching into them.
11. Protect or replace streamside vegetation when its removal will result in increased stream temperature detrimental to aquatic habitat, and/or increased turbidity, bed load, and suspended solids which would be detrimental to fish-spawning beds or other aquatic habitat.
12. In road construction, maintenance and other earth-moving activities, place the toe of overcast material above the mean high water line. If the best alternative is to encroach on the stream, use construction methods and/or structural barriers to prevent fill material from entering the stream channel.
13. Construct all temporary roads associated with timber harvesting or other activities to grades not exceeding safe limits for surface water control; make sure such roads contain sufficient water bars or other structures to prevent eroded material from reaching streams.
14. On sidehills and near channel crossings, make sure road drainages discharge where sediment can settle out before runoff reaches a stream channel, unless this is clearly impossible.
15. Design water collection systems installed to protect roads or facilities so that waters turned onto slopes or into natural channels will not exceed the safe capacity of the slopes or channels.
16. Minimize transport of sediment from disturbed areas by flocculation, ponding, vegetative barrier strips or other means.
17. Do not locate log landings adjacent to stream channels or on areas where surface runoff will discharge directly into the channel.
18. Design, construct and maintain roadway sections that are to be parallel and contiguous to stream channels so as to minimize concentrated surface runoff from the roadbed and slopes. When appropriate, provide special design features such as slope drains, insloping, crowning, berms or other facilities.
19. Treat wash water from gravel crushing operations so that the level of turbidity of discharge water does not exceed the turbidity level, at normal flow, of the stream into which it is released.
20. Avoid construction during wet season or other undesirable runoff periods to minimize sedimentation directly into streams. If

construction is essential during such periods, minimize sedimentation damage by installing debris basins or using other methods to trap sediment.

21. Do not operate wheeled, track-mounted or other heavy equipment in stream courses except when approved by the land manager at designated crossings. If such equipment is essential to construction activities, its use is to be specifically authorized by the land manager.
22. Prohibit flushing of desilting basins, ponds and reservoirs into streams.
23. When physically feasible, require use of a recharge pond rather than a stream as part of storm drain systems for all industrial, residential and recreational developments.
24. Borrow materials from stream channels only where this is not detrimental to water quality, fisheries or channel hydraulics.
25. Do not remove borrow material from channels that are within or contiguous to established recreation areas unless necessary to improve channel hydraulics or the aquatic environment.
26. Revegetate lands impacted by channel changes with available native plants and appropriate non-native plants.
27. Before revegetating, reshape lands impacted by stream channel operations and lands contiguous to streams that have been altered by construction activities to as near natural conditions as possible.
28. Conduct logging and construction operations so as to prevent debris from entering stream channels.
29. Do not fell trees into streams, lakes, meadows or bogs.
30. Design and construct bridges, culverts, water level recording and stream channel protection facilities, including riprap, to harmonize with the natural environment.
31. Consider the total scenic value when an evaluation dictates the need for a road paralleling a stream. For example, a stream channel change, properly designed and constructed, might result in a road with less adverse visual and physical impact than would construction of the road across a steep slope.
32. Wherever feasible, make sure altered streambanks have slopes which are not barriers to recreation use.
33. Prohibit stream channel changes and encroachment on streams within or contiguous to established or proposed recreation areas unless absolutely essential for the purpose of correcting an existing channel problem, protecting life and/or enhancing the aquatic environment.
34. Do not channelize streams to protect recreation structures and facilities from flooding when located on floodplains or basins.
35. Where channelization is used, shape and revegetate the impacted area in a manner compatible with natural stream dynamics.
36. If access along a streambank is needed under a bridge span to be built over a large stream, make the bridge sufficiently long to provide room for such access.
37. Where streams offer boating or floating opportunities, make sure channel structures or alterations allow for safe passage and do not detract from scenic qualities.
38. Design culverts, bridges, and other facilities to pass or to protect against floods which may reasonably be expected to occur during the life of the facility. When selecting flood design, consider

relationships between risk and hazard of failure as well as monetary and nonmonetary costs of providing protection.

39. Design culverts, bridges or hardened fords where it is necessary to cross stream courses with temporary roads associated with timber harvesting or other activities. Make such facilities of sufficient size and design to provide capacity for the flow of water anticipated during the period of use of the road. When the, temporary road is no longer needed for the purpose for which it was designed, remove all bridges and culverts. When such facilities are removed, also remove associated fills so that they will not be affected by the stream. Shape removed fill material to blend with the natural terrain and revegetate all disturbed soil.
40. Do not use soil materials to cover the decks of temporary bridges.
41. When flow in a stream course is temporarily diverted to accommodate construction or other activities, restore the flow to the natural course before the next runoff season.
42. Bed and backfill all culverts in accordance with approved engineering practices.
43. Upon completing a project or activity, "erosion-proof" all temporary roads by means of cross ditches, ripping, seeding or other suitable means. Provide silting ponds or other facilities as needed to prevent silt-laden water from entering streams.
44. Make sure that riprap or other erosion protection materials are of sufficient size and placed in such a manner as to withstand bridges which are designed for passage of a 100-year flood.
45. Extend riprap or other protection materials below the bed of the stream far enough to protect against scour and to a height sufficient to protect against the predicted or recorded 25 or 50 year flood occurrence, as appropriate. (2170) (1532, 2190)

RESPONSE: Your suggestions were reviewed; many of them have been incorporated into the Forest-wide Standards and Guidelines under riparian, facilities, fish, wildlife or range.

SENSITIVE PLANTS

COMMENT: The Department of Fish and Game recommends that the section on Page III-85 should discuss the relative rarity of the taxa, where they are known to occur, the size of existing populations, an estimate of a viable population size, the amount of genetic diversity represented by these populations, and the threats or lack of threats on these populations which result from management activities that are currently permitted on the lands they occupy. (2190)

RESPONSE: The sensitive plant portions of the Plan will be updated to reflect current information on sensitive plants. Specific information regarding the location, distribution, demographics and existing management direction are located in the Supervisor's Office. Most of this information will not be reiterated in the Plan. The Forest has a working list of sensitive plants. This is used to prioritize species for writing plant management guides. These will direct management for individual species.

SENSITIVE PLANTS

Topics such as viable population size and genetic diversity can only be handled following intensive data collection and will be included in the species management guides.

COMMENT: We need a complete inventory of sensitive plants in this planning period. We need to initiate management recovery programs for these sensitive plants. (1532)

RESPONSE: The Inyo has prioritized 22 sensitive plant species on the basis of sensitivity to various land management practices, knowledge of habitat requirements, endemicity of the species, and other factors. Another 31 plant species of concern are being retained on watch lists to prevent future listing. Seventeen of these need additional information. Funding constraints do not allow the inventory of all sensitive plant species in any one year. Inventory efforts are centered around high priority species, the development of management guides for these species, and those species/populations that could be impacted by other resource projects.

COMMENT: Need to develop not only a sensitive plant program but a sensitive Forest biotic community preservation program. (2178)

RESPONSE: Research Natural Areas and Special Interest Areas were developed to provide areas where unique biotic communities would be protected. A thorough discussion of RNAs and SIAs can be found in those sections. Forest-wide Standards and Guidelines also insure protection of plant and animal species and the habitats that they occupy.

COMMENT: Change Standard and Guideline #4 for sensitive plants to: "Permit scientific studies on sensitive species as long as such activity does not adversely affect the species under investigation." (2170)

RESPONSE: We have incorporated your suggested change.

COMMENT: The DEIS (Page III-86, Table III-21) lists eighteen sensitive plant species. In addition, the CNDDB has records for Arabis tiehmii, Draba asterophora, Lupinus sublanatus and Phacelia nashiana. CNPS request that Inyo National Forest evaluate, in conjunction with the Regional botanist, the potential need to add these to the Forest's and Region's sensitive species list in the Final EIS and Plan. (1108) (225, 381, 487, 1411, 1431, 1634, 1652, 2047, 2170, 2190)

RESPONSE: These have already been added to the Forest sensitive plant species list dated January 1987. Since the inception of the DEIS and Plan, several changes have occurred that were not included in these documents. The latest information is included in the Final Plan.

COMMENT: Need to clarify the taxonomic status of some species on the Forest sensitive species list. The species requiring these studies should be discussed in Appendix 1. (1108) (1431)

RESPONSE: Changes have occurred in scientific names and in the status of several plants. For example, Lupinus dedeckerae has recently been changed to L. padre-crowleyi. There are also questions about the validity of L. sublanatus and Sedum pinetorum being verifiable species. There have also been changes in the Inyo's sensitive plant species list; the most recent taxonomic classification will be used in the Final EIS and Plan. Specific species needs will be addressed in the Sensitive Plant Program Management Plan.

COMMENT: The Standards and Guidelines for sensitive plants (Plan IV-33) refer to a Forest "Watch List". If the Inyo National Forest has a separate list of plants of concern we feel that this list should be included in the Final Plan and EIS. (1108)

RESPONSE: In addition to the sensitive species list, there are two watch lists. Watch List #1 are those species that CNPS lists as needing more information before a decision on their status can be made. There is a need to distinguish between the geographic rarity of these species and historical distribution of the species. Watch List #2 are species that were listed in the past, but are currently delisted for various reasons. This does not preclude the opportunity to list these again if necessary. This information is available on the Forest, and does not need to be included in the FEIS/Plan.

COMMENT: The first sentence on DEIS III-85 is refuted by the sentence on Plan III-31 which states correctly that demand for sensitive plant protection does originate with the public and that it has expressed concern. As also discussed under Plan III-31, a current list of such plants needs to be used. It is noted that four of those listed are California State-listed as rare. Is the policy regarding state listed species to be different than or the same as federally listed? Please indicate what your management proposal is to be on this matter. (1431)

RESPONSE: See the Affected Environment section of the EIS for a written discussion. As stated in previous comments, the species list will be updated to reflect the most current available information. Four plants found on the Forest are also designated as rare by the State of California. These are: Astagralus monoensis, Cryptantha roosiorum, Dedekera eurekensis, and Lupinus padre-crowleyi.

COMMENT: Sensitive plant species on the Inyo. In particular, pack stock traffic should not be a potential concern with proper maintenance of these passes. Isn't Astragalus ravenii poisonous to livestock? (1645)

RESPONSE: Astragalus ravenii is listed as a sensitive species on the Inyo. This species is listed as the ninth highest priority (out of 22) on the

Forest. There is little known about the habitat requirements or locations of populations. Since all known populations are located in the wilderness, the potential for impact is thought to be low.

COMMENT: It is of significance that the Inyo National Forest provides habitat for eight sensitive plant species which are endemic to the lands within the Forest. The DEIS III-86, Table III-21 lists eighteen sensitive plant species. Although the Plan and DEIS III-85 say that no federally listed plants grow on the Inyo, it is stated that two plants are proposed for federal listing. Based upon the plants listed in DEIS III-86, Figure III-21, it can be seen that twelve federal candidate species occur on the Inyo of which one species (Dedeckera eurekensis) will likely be dropped to category 3C when the list is revised. (1411, 1431) (2170)

RESPONSE: Of the 22 species listed as sensitive on the Inyo, nine are proposed for federal listing as Category 2. These are species that require additional studies to better determine the status of the species. Two species, Abronia alpina and Astragalus monoensis are proposed as Category 1 species. Category 1 species are those for which the U.S. Fish and Wildlife Service has adequate data to warrant a federal listing. These two species are the highest priority sensitive plants, and species management guides are currently being prepared.

COMMENT: Add Lupinus duranii, a sensitive species endemic to Mono Basin to your list. (2170)

RESPONSE: Lupinus duranii was listed as a sensitive species in the past and is being considered for relisting. It will remain on the Inyo National Forest Watch List #2 until this evaluation is completed.

COMMENT: Records of CNDDB indicate that Sedum pinetorum should be deleted, Lupinus dedeckerae should be renamed Lupinus padre-crowleyi. (2190)

RESPONSE: Sedum pinetorum is currently on Inyo Watch List #2. There is some debate as to whether this species was originally collected in California. The lupine species will be changed in the Final Plan and EIS.

COMMENT: Due to impacts of trampling, grazing should be reduced or cattle eliminated entirely from Ramshaw Meadow in the Golden Trout Wilderness where the Inyo Forest's most sensitive plant grows (Abronia alpina). (1180)

RESPONSE: A species management guide is being prepared for Abronia alpina, the highest priority species on the Forest. Recommendations for grazing will be made in this plan. In addition, two exclosures are being placed in this population to further assess the effects of livestock trampling.

COMMENT: Very concerned with the levels of disturbance of sensitive plant habitat projected after implementation of the Preferred Alternative. The

DEIS IV-116-117 describe "low" levels of protection and "moderate to high" levels of threat for sensitive plant habitat by the end of the fifth decade. These projected decreases in sensitive plant habitat could in fact result in the listing of some species as "threatened" or "endangered" as a result of Forest Service actions. (1108) (1411, 1431, 2047, 2170)

RESPONSE: At a Regional Biologist/Botanist workshop, several prototypes were developed for monitoring plans. One of these was for sensitive plants. These plans have tentative Regional approval. The monitoring guidelines for sensitive plants developed at this meeting will replace those that are currently in the Plan. The Forest has a strong commitment to insure that sensitive species do not become listed. All threatened and endangered species are assessed for any proposed project in a site specific environmental analysis.

COMMENT: On Plan V-8, you state a 50% variation (decline in numbers) is required before further action is taken. In contrast, threatened or endangered species of wildlife require action if any appreciable decline is noted. Why are sensitive plants, including state listed rare species and federal candidate threatened or endangered species, not similarly treated? Inyo National Forest has no supporting data to justify permitting 50% declines in species for which no minimum viable population level has been established. CNPS requests a much more conservative level (20%) be established to ensure no sensitive species require future federal listing as threatened or endangered. A citizen petition for federal listing as a result of USFS actions would not look good. (1108) (1777, 2115, 2170)

RESPONSE: The revised monitoring guide will not allow altering management practices that will degrade populations of sensitive plants without a field evaluation approved by a professional botanist, until species management plans are completed. These plans will establish parameters for allowable impacts.

COMMENT: Contrary to the statement under the minimum implementation requirements on DEIS II-38, management of sensitive species to ensure that they do not become threatened or endangered is legally mandated (FS Manual 2670.3). (1108) (134, 487, 2047, 2190)

RESPONSE: This statement is in the Forest-wide Standards and Guidelines.

COMMENT: Suggest that an additional goal be added to this part of the Plan that states, where feasible, actions will be taken to "recover" sensitive species to a condition sufficient to warrant delisting as sensitive, threatened, or endangered. (1108)

RESPONSE: The goal statement has not been modified. It states that habitat for threatened and endangered and sensitive species will be protected or improved to aid in their recovery.

SENSITIVE PLANTS

COMMENT: Very disturbed that sensitive plants are only mentioned in the Prescription for "designated wilderness" under threatened, endangered or sensitive species. Certainly, wilderness management will have the least impact of all the Management Prescriptions on sensitive plants. We strongly feel that in order to protect the habitat required by sensitive species from multiple use that a separate Management Prescription for the areas having sensitive plant species should be developed. This would recognize the special management needs of the Forest's 6,800 acres of known sensitive plant habitat. (1108)

RESPONSE: When a particular resource is not included in a Prescription, the Forest-wide Standards and Guidelines and/or management area direction are considered sufficient. Guidelines that exist in the Plan allow no activities that would decrease sensitive plant species below viable population levels. Additional direction will be implemented in the monitoring guidelines (refer to previous comment).

COMMENT: Sensitive Plants, Plan IV-33. The Inyo Forest should prohibit the taking of threatened and endangered plant species except under U.S. Fish and Wildlife permit. It should also prohibit the collection or taking of sensitive plants except as authorized by the Forest Supervisor. (1431)

RESPONSE: This will be added to the Sensitive Plant Program Management Plan.

COMMENT: One area of the Plan where we anticipate conflicts may develop with respect to threatened and endangered species management concerns the funding allocated for obtaining base line information and monitoring population trends. We believe that the funding allocated in the Plan is grossly inadequate to implement a trend analysis program. The rarity of most listed or candidate species dictates that extensive and prolonged surveys be undertaken that are by their very nature expensive to carry out. Unreliable data are obtained through less intensive studies. We strongly advocate that significantly higher levels of funding for monitoring of sensitive plant and wildlife resources be allocated in the Final Plan. A high priority should be assigned to obtaining such funding for acquisition of initial base line data and for sustained long-term resource monitoring and protection. (487)

RESPONSE: Funding is a concern in managing sensitive plant species because the Forest does not have control of monies allocated from higher level offices. Goals on the Inyo are to complete one plant management guide per year beginning with high priority species; to insure protection of sensitive plant populations in areas where other resource projects are proposed; and to continue monitoring plant species where viability is a concern.

COMMENT: DEIS (III-86) states that grazing impacts Abronia alpina, Astragalus monoensis, Cryptantha roosiorum, and Trifolium dedeckerae. CNPS opposes impacts to these species from grazing and requests Inyo National Forest follow its Standards and Guidelines, and the Forest Service Manual.

CNPS opposes any increase in AUMs for allotments where these species are known. (1108)

RESPONSE: Guidance for grazing activities in relation to sensitive plant species will be addressed in the species management guides. In areas where grazing is determined to be detrimental, management activities will be modified to protect plant populations from this impact. Allotment management plans will also be used to direct grazing activities in relation to sensitive plant populations.

COMMENT: We present the following outline for consideration as an additional Management Prescription for the Plan: Prescription #19 - Sensitive Plants. Description: The purpose of this prescription is to recognize and preserve the habitat needs of sensitive plant species. In areas where sensitive plant species occur, timber harvest methods will be limited to shelterwood if it can be demonstrated to not be detrimental to the species. Skidding equipment will not be permitted, motorized vehicle traffic will not be allowed, and where negative effects are noted, livestock grazing will be eliminated.

Management Direction and associated Standards and Guidelines:

1. Include a 150-foot buffer zone around populations within each Management Prescription Area. Domestic livestock grazing, motorized and non-motorized vehicles will not be permitted within the buffer zone.
2. Pesticide or herbicide use will not be permitted within or immediately adjacent to sensitive plant populations.
3. Timber harvest, where determined appropriate, will be seasonally limited to the period having the least impact to the species (during dormancy or after seed set). Prescription #9 - Modified Timber should be used for 300 feet outside buffer zone.
4. Meet visual quality objective of retention or partial retention.
5. Coordinate with sensitive plant monitoring officer.
6. Coordinate with the California Department of Fish and Game's natural diversity database on population, habitat and rare status information.

If the distribution of sensitive plant does not warrant inclusion within a separate Management Area 19, then CNPS recommends that a separate sensitive plant element and corresponding Management Direction be included in Management Prescription for areas supporting sensitive species. (1108) (65, 1431, 1634)

RESPONSE: A separate prescription for sensitive plants is not considered necessary. A commitment will be made to disallow management activities that are shown to be detrimental to sensitive plant populations. Your item #6 has been incorporated into the Forest-wide Standards and Guidelines to insure protection of populations. Item 1, 2 and 3 are specific management methods that would be addressed in species management guides. Item 4 does not necessarily insure protection of sensitive plant populations.

COMMENT: In the Plan under future condition of the Forest, CNPS requests the following information be provided for sensitive species: 1. Which species

will have habitat protection, and what proportion of the known populations will be protected, and 2. which, if any, species could possibly be delisted as a result of Forest management. (1108)

RESPONSE: These recommendations will be addressed in the species management guides that are being developed for all sensitive plant species. To appropriately address these concerns, considerable data on these species needs to be collected and analyzed.

COMMENT: CNPS feels strongly about the Inyo National Forest having a commitment to the preparation of species management guides. These guides take a species-wide, and Forest-wide, look at sensitive plant management. Species management guides provide for holistic management. They identify the habitat needs, management constraints, opportunities for enhancement, and make determinations of what populations are required for the long-term preservation of the species. It is possible for sensitive plants to be inadvertently harmed without some type of Forest-wide management plan. It is important that the available information about species be compiled in one place. Inyo National Forest should make a firm commitment to preparing these guides. The need for these guides and a Forest-wide inventory for sensitive species should be stated in Appendix 1. (1108) (487)

RESPONSE: A management plan providing direction to long-term management of sensitive plant species is currently being prepared. One facet of this Plan provides direction for developing species management guides. We are presently in the process of developing species management guides for Abronia alpina and Astragalus monoensis.

COMMENT: Additional area of concern to CNPS is the management of sensitive plants during the period before species management guides have been prepared. In the absence of species management guides, the only responsible management is total avoidance of impacts to sensitive species. This should be stated in the Plan and DEIS. (1108) (1431)

RESPONSE: Refer to the monitoring guidelines in the Final Plan for sensitive plant. These revised guidelines state: "No impacts to plant populations that do not have a species management plan; unless recommended by the Forest Supervisor."

COMMENT: The Plan does not specifically designate any plant species as a management indicator species. Of the eighteen species considered sensitive, two are listed by the State of California as rare and two are federal candidates (DEIS III-85). We reiterate that state and federally listed and candidate species should be designated MIS. This should be reflected in the minimum management requirements. (1411)

RESPONSE: Sensitive species are essentially managed as MIS. MIS is just one concept used to insure that all biological resources on the Inyo are considered in management decisions. Other concepts are plant community and structure diversity, old-growth, snags, down logs, sensitive plants, fish,

etc. Of the 22 sensitive plant species, 4 are listed as rare by the State of California, 2 are Category 1 proposed species for federal listing, and 9 are category 2 species with the U.S. Fish and Wildlife Service.

COMMENT: Sensitive Plants, Plan IV-33. The Inyo should coordinate its programs with U.S. Fish and Wildlife Service, California Department of Fish and Game, appropriate Nevada State resources agencies, and other groups and individuals concerned with the conservation of threatened, endangered and sensitive plant species. (1431)

RESPONSE: The Forest Service does coordinate and cooperate with other resource agencies in developing its sensitive plant species program.

COMMENT: Although the DEIS reports that range management affects sensitive plants, this document fails to include "grazing pressure" as an indicator or a consequence of this activity on DEIS IV-114. Given that Figure III-21 on DEIS III-86 states that "grazing" was mentioned as a potential conflict for Abronia alpina, Astraglus monoensis, Cryptantha roosiorum, and Trifolium dedeckerae, we believe that grazing pressure should be thoroughly discussed in this Chapter and fully addressed in Figure IV-30 on Page IV-116. (487) (1431, 1617, 2170)

RESPONSE: The effects of livestock grazing on these species is largely unknown and will be addressed in the species management guides. Data collection and draft species management guides are in progress for two of these species and will be initiated for the remaining two in the near future.

COMMENT: Hackelia sharsmithii does have a conflict with cattle grazing in the Golden Trout Wilderness. (381)

RESPONSE: This species is given the 21st priority out of 22 plant species that the Inyo recognizes as sensitive. Data is not available at this time to assess the effects of cattle grazing in the Golden Trout Wilderness. When the management guide for Hackelia sharsmithii is completed, it will include an assessment of potential impacts on the species, and how these can be alleviated.

SOCIO-ECONOMIC ENVIRONMENT

COMMENT: It would not affect the U.S. economy at all to close public lands to private profit. I am not asking you to eliminate alpine skiing. I don't think it's unreasonable that since the people of the U.S. own the land that the profits should accrue to them. All the profits. (1600)

RESPONSE: In many areas, particularly in the West, the only opportunities for some land uses are on publicly owned lands. The mandate of the Forest Service is to manage for multiple uses on National Forest System lands. The

SOCIOECONOMIC ENVIRONMENT

Forest issues many special use permits for a wide range of uses including alpine skiing. All revenues from them are returned to the U.S. Treasury.

COMMENT: Congress has mandated that natural resource management on our public lands takes precedence over resource utilization and commodity output. The primary purpose for the existence of these lands is to ensure the perpetuation of the ecosystems they support, not to subsidize the economy of a few industries and individuals. (1108) (19, 90, 111, 1271, 1638, 1650, 1968, 2164, 2164, 2170, 2171, 2212)

RESPONSE: Congress has mandated that National Forest System lands be managed for multiple uses. That includes the production of both commodity and non-commodity outputs. Perpetuation of ecosystems does not exclude utilization of the land. Forest lands are owned by everyone, both commodity and non-commodity users, and receipts from commodity users are returned to the U.S. Treasury.

COMMENT: In his January 12, 1987 letter to all Regional Foresters, Forest Service Chief Max Peterson stated that an updated assessment of future demand is essential in establishing resource outputs from the National Forests, and new information relating to the timber resource is particularly critical due to recent fluctuations and uncertainty of future markets and prices. Since the Inyo Plan uses 1982 as a base year for planning decisions when poor markets existed, your Forest seems to be in need of an updated assessment of future demand for wood products. I am confident such a reassessment will show that demand for timber on the Inyo is much higher than previously anticipated. Actually, this should be a foregone conclusion when one looks at the substantial bid premiums on the Inyo Forest timber sales for the past few years. If it is available to increase per the Chief's letter, the Inyo will need to modify the Preferred Alternative to satisfy the projected demands. The Inyo Forest needs to recognize the importance of its ASQ as part of the total timber supply; proposed reductions in the timber sale program will have a negative effect on several mills which depend on the Inyo as a partial source of timber and will place unnecessary pressure on other public and private sources of timber. (458) (2179)

RESPONSE: The Forest has reduced its ASQ because the values accruing from recreation in the area west of U.S. 395 are higher than those accruing from timber. It was not done because of demand analysis. Demand constantly fluctuates for both timber and specific recreation uses. Conditions that vary significantly from the Final Plan can trigger an amendment to the Plan.

COMMENT: I am concerned about the social and economic consequences that will result from your proposed Preferred Alternative. Currently the Inyo National Forest has the capability to support a long-term sustained yield of 24.7 MMBF annually, yet your proposed Plan will have an allowable harvest of 9.75 MMBF annually. I would like to go on record as a supporter of the Resources Planning Act Alternative that proposed an ASQ of 16.9 MMBF in the first decade, and increasing to 19.8 MMBF by the fifth decade. Unnecessary timber volume reduction on the Inyo Forest directly affects timber industry related

jobs that provide services to or derive benefits from the industry. (1347) (297, 425, 427, 918, 1790)

RESPONSE: The allowable harvest in the Final Plan is based not only on how much volume production the Forest can sustain, but on environmental and economic factors as well. The RPA Alternative of 16.9 MMBF harvest in the first decade is not realistic. The harvest volume proposed in the Plan will sustain current markets. If demand increases over time, volumes can be adjusted.

COMMENT: There is no consideration of how Forest outputs affect the state or even if outputs are adequate to meet historical needs of dependent users, such as purchasers of Inyo timber, within economic sub-regions of the State. (297)

RESPONSE: Because of its location in the Eastern Sierra, markets for Inyo timber are limited. The Preferred Alternative will meet current local demand. If conditions change, the Plan can be amended.

COMMENT: You state that the Inyo National Forest has an insignificant economic impact on Southern California (DEIS III-4). This ignores the importance of clean potable water to Los Angeles. If development on the Inyo were to seriously degrade the Mono Basin and Owens River water quality, this could have a significant effect. (225)

RESPONSE: This is true. Protection of the water resource is a key component of the Plan.

COMMENT: In many sections of the Plan, it becomes obvious that the Inyo is operating as an autonomous organization without regard to the cumulative effects that may result from activities proposed on adjacent Forests or on the other Forests in California. For example, when the Inyo Plan discusses the proposed drop in firewood availability from the Forest, there is a failure to discuss firewood that may be available from other Forests or other local sources. The same can be said about the proposed reduction in timber volumes. We and the general public need to be informed of the overall impact of all the plans on a state-wide basis. For this reason, we recommend that none of the Forest plans be approved until the cumulative effect of all the plans can be studied. (49)

RESPONSE: Because of the Inyo National Forest's location in an isolated section of the Eastern Sierra, its impacts on other areas with regard to commodity production is limited. The markets of the Forest are localized and limited. The Plan ensures continued production of wood products to meet local needs and a continuation of the current grazing and mineral programs. All Region 5 Forest Plans are reviewed by the Regional Office in San Francisco to ensure that they are consistent with other National Forests in meeting regional and national needs.

SOCIOECONOMIC ENVIRONMENT

COMMENT: My main concern for writing this letter is the fact that if there is a new ski area development, there would be more jobs for the people from Mammoth to Lone Pine. (1054) (909, 1638)

RESPONSE: Ski area development could generate additional job opportunities in the area. Recreation use on the Forest has a significant impact on the local economies and any additional development could produce opportunities for seasonal and service jobs.

COMMENT: I note that your Plan states that "timber harvesting does not contribute significantly to the Inyo area's economic base" or to Regional timber targets, and that livestock grazing is a "minor part of the total present net value on the Inyo Forest". Accordingly, I urge you to redirect your management projections for lumber and grazing. (1009)

RESPONSE: Those projections have been reduced.

COMMENT: A major concern I have is the overdevelopment in the Mammoth/June Lakes region. This city is already exceeding the capabilities of the environment to support it, yet the Plan does little to encourage reasonable development. I urge the Forest Service to more carefully monitor development in this region and to allow growth at a more reasonable rate that does not dramatically impact on the environment. In the section for Leasable Minerals - Oil, Gas, and Geothermal, please add: "Include cumulative impact analysis on such issues as ground water, deer migration, noise, air quality and recreational land visual impacts where the potential for multiple energy developments exist. (1074, 1490, 1638) (62, 73, 77, 80, 95, 158, 481, 914, 933, 946, 954, 1028, 1042, 1043, 1045, 1050, 1051, 1055, 1056, 1059, 1064, 1065, 1066, 1069, 1079, 1085, 1088, 1090, 1161, 1178, 1222, 1244, 1256, 1333, 1463, 1494, 1503, 1509, 1532, 1617, 1654, 1753, 1793, 1797, 1798, 1800, 1830, 1858, 1871, 1892, 1921, 1940, 1951, 1995, 2000, 2006, 2062, 2072, 2078, 2087, 2103, 2104, 2122, 2142, 2178, 2191)

RESPONSE: The Mammoth/Mono Unit Plan, approved in 1978 by the Regional Forester, is the existing planning document which directs development in the area. The Forest Service position is that any major development proposal that is not approved by the Plan would not be permitted until it has been verified that the infrastructure can support it. The National Environmental Policy Act (NEPA) requires an environmental analysis for each project. In addition, the proposed development would require that a cumulative effects study be done. The proposal could be for a new ski area, geothermal plant, or other major construction project. The cumulative effects study would evaluate all foreseeable projects in the Mammoth/June area with an analysis of their impacts on both the physical and social environments. It would include an analysis of the infrastructure needed to support additional development including water, sewage, transportation, school, fire protection and other facility needs. This would ensure that not only impacts on the physical environment are considered, but also that effects on the social environment are included in the analysis.

COMMENT: Like many who have been living here, we oppose the further mushrooming of this concrete jungle. We're concerned to encourage sensitive stewardship of the unique and wonderful wildness of our geographical environment. We want as much of it as possible to remain open to the public, free and not privately owned. Calling one alternative "Amenities" trivializes the need for natural areas, wilderness, accessible scenery and a wide recreation opportunity spectrum. Because of both its ecological fragility and proximity to urban areas, the Inyo must be protected and managed as a mental health refuge for the spiritual and emotional regeneration of those millions who must live and work in an artificial, maddening man-made environment. (1639, 1015) (123, 225, 227, 1919)

RESPONSE: The Plan emphasizes non-commodity resources: wilderness, recreation, wildlife and aesthetics.

COMMENT: Concerned about any commercial use of the Forest including lumbering, cattle grazing, and mining. The more our population grows, the more we need the existing natural resources of the Forest, not only for its beauty, but for the fast shrinking habitat of our wildlife. It is my opinion that the Forest Service should advocate preservation instead of multiple use. Protection of wildlife habitat (old growth forests) and species diversity should receive priority over other uses. The primary purpose for the existence of these lands is to ensure the perpetuation of the ecosystems they support, not to subsidize the economy of a few industries and individuals. The Forest Service should be an active and vigilant force in protection of wilderness lands, roadless areas, and wildlife habitat from the power and greed of developers. (340, 1011, 1216, 1108, 1271) (3, 63, 65, 90, 107, 127, 279, 288, 333, 381, 382, 1041, 1185, 1223, 1295, 1496, 1522, 1591, 1704, 1710, 1713, 1733, 1762, 1810, 1820, 1851, 2008, 2061, 2112, 2170)

RESPONSE: The legislated mandate for management by the Park Service is preservation. The Forest Service is mandated by law to provide for the multiple-use of National Forest System lands. That includes protection or enhancement of natural resources, utilization of both commodity and non-commodity resources, providing for opportunities on public lands that are not available on private lands and ensuring that the Forest lands can be enjoyed by all the public. See the Forest-wide Standards and Guidelines and the Summary of the AMS sections for specific direction to ensure protection of wildlife habitat and species diversity.

COMMENT: First and foremost, we feel that the Inyo Forest should be managed for its recreational values. While we understand the multiple use concept that guides the management decisions of the Forest Service, we feel that the location of the Inyo Forest is such that the recreational values should be emphasized in relationship to the timbering and mineral extraction uses of the Forest. (1666) (174, 969, 1429, 2133, 2194)

RESPONSE: The recreation resource is given primary emphasis in the Plan, while providing for the use of all other resources. Management of the timber resource west of U.S. 395 has been changed because of the high recreation

values in the area. Red fir stands will not be harvested; the remainder of the area will be harvested using uneven-aged management techniques.

COMMENT: The time is long overdue to put a much higher priority on the protection of wildlife habitat versus development of resources. In my opinion, the balanced approach suggested in the multiple use principle has been non-existent. Development has been weighted to an extreme; it is time to preserve and protect. (1653) (2132, 2166)

RESPONSE: The protection of wildlife habitat is a major emphasis in the Plan. See the Standards and Guidelines for wildlife and the Summary of the AMS for a discussion.

COMMENT: An additional indicator should be added: "Do Forest Service programs have an economic impact on local jurisdictions and service providers?" (Economic Assessment II-3). Both the Plan and EIS fail to address Forest policy impacts on local service infrastructures, the ability of local communities to accommodate increased activity generated from the Forest and the availability of a private land base to service visiting Forest users. (1638) (225)

RESPONSE: The impact of Forest Service programs on local jurisdictions is addressed in Chapters III and IV of the EIS in Section C (Economic Environment and Social Environment); summarized in economic comparative tables in Chapter II; and was a significant factor in the management decisions for the Final Plan.

COMMENT: The restrictive management policies mandated by the Preferred Alternative will also have a deleterious effect upon the economic well-being of the only public service facility located in Fish Lake Valley, the local store and service station. (486) (1587)

RESPONSE: The management policies of the Plan were constructed so as not to have a negative impact on the economies of local communities. The range resource will be maintained at current levels, mining opportunities will be protected, and additional recreational opportunities will be provided including the recommendation for a substantial wilderness area in the White Mountains. The McCleod Camp Road will not be closed as was proposed in the Draft Plan.

COMMENT: Resource outputs, both commodity and non-commodity, affect many people beyond the immediate impact area. Commodity production activities also produce a broad range of economic activity. Direct returns from both federal and state governments occur not only as payments of fees (or stumpage), but also as corporate and personal income taxes, and the generation of property taxes. Ripple activities in vendor businesses extend throughout the local communities as well as communities outside the impact area. We would like to see more serious consideration of these types of effects. (1432) (129, 2171, 2193)

RESPONSE: Resource outputs from the Forest do impact a wide area and there is a substantial multiplier effect. The primary economic effects are most easily tracked, but there are also services and intangible impacts that cannot be easily defined. See Chapter II, Figure 35 of the EIS for a summary of economic effects; Chapter IV, Section B for a discussion of the "Direct, Indirect, and Cumulative Environmental Consequences" of the Preferred Alternative.

COMMENT: The Forest is bounded by a number of other federal management units including Bureau of Land Management; Toiyabe National Forest; Yosemite, Kings Canyon, Sequoia National Parks; and the Sierra and Sequoia National Forests. There needs to be a more thorough consideration of the way in which Inyo National Forest outputs complement, supplement, or otherwise interact with resource outputs of the other units. (1432)

RESPONSE: The Forest coordinates with adjacent National Forests in management decisions of all types, including wild and scenic river designations with the Sierra and Sequoia, wilderness designation with the Toiyabe, and the management of lands that adjoin us. The Forest also coordinates with the Bureau of Land Management on management decisions since much of the Inyo is interspersed with BLM lands. Because all National Forests are in one system, outputs, goals and management direction are the product of evaluation nation-wide, region-wide, and local needs. All agencies, including the National Park Service, had the opportunity to review and comment on the Draft Plan. Decisions in the Final Plan reflect coordination efforts with local, state and federal agencies. See Chapter VI, EIS "Consultation and Mailing List."

COMMENT: We need not remind you that residents of Mammoth Lakes and visitors to the Eastern Sierra from Southern California represent only a tiny fraction of the population you serve as public employees. We note an absence, in both the DEIS and Draft Plan, of attention to several subgroups of the American citizenry who are potentially important to the development of a year-round forest utilization program. We request that you incorporate into both the final EIS and Plan evidence of specific attention to the anticipated growth in the U.S. senior citizen population over the next 15 years with its attendant impact on usage of Inyo National Forest, and the anticipated demographic shift that will make Hispanics and Asians the dominant ethnic populations of L.A. County and the greater Southern California area by the year 2000 with a resulting impact on recreational use of the Inyo Forest. While socioeconomic factors related to both of these phenomena may be beyond the scope of your charge, there should be evidence of minimal sensitivity to the fact that the user population of Inyo Forest should and must expand beyond those who are wealthy enough to drive to Mammoth, rent a condo and pay for ski rental and lift tickets. (1406) (2178)

RESPONSE: The Plan provides for a wide range of recreation opportunities for all segments of the public. This includes not only a variety of facilities ranging from primitive campsites requiring no fee to highly developed campgrounds with many services provided. It provides for both winter and summer recreation use. Much of the Forest is used by people for dispersed

recreation requiring no fees: camping, hiking, cross-country skiing, mountain climbing, snowmobiling, and sightseeing. Demographic projections, recreation use trends, and population forecasts were all used to construct demand projections that determined Plan projects.

The Los Angeles area is identified as a secondary zone of social influence for the Forest (Chapter III, EIS "Affected Environment"). Demand projections for recreation on the Forest were developed by the Regional Office. Based on growth in major population centers, the Southern California area had a major influence upon the factors developed for the Region (Appendix B). These demand projections were used in land allocation decisions identified in the Plan. Major development projects will require site specific analyses which will incorporate current population statistics.

COMMENT: You state: "It is expected that an increased local population could stabilize the fluctuating tourist economy of the 1970's." This statement should be deleted. The population growth envisioned by the Forest Plan would be fueled almost entirely by winter recreation development and, therefore, would more likely lead to increased instability. (1891) (225)

RESPONSE: The statement was intended to emphasize the need for local population growth that would help to stabilize the fluctuating tourist economy. The Plan emphasizes increased developed and dispersed recreation opportunities, both summer and winter.

COMMENT: The land ownership pattern of an area can directly affect the development pattern of a community and thereby spatially enhance or detract from the community's social interactions and cohesiveness. An additional indicator should be added: "How can the Forest Plan enhance the social integrity of local communities through the land adjustment process." (Social Assessment II-3) (1638)

RESPONSE: See Chapter III, EIS (Affected Environment) for a discussion of the lands program under "Landownership Adjustments" and "Special Uses". Also Chapter IV (Forest-wide Standards and Guidelines) under "Landownership Adjustments" for Forest priorities. The basic goal of land acquisition or exchange is to protect resources.

COMMENT: The consumptive pursuits such as timber, mining and grazing benefit only a small number of current residents and are often subsidized by all taxpayers. (1974) (89, 1007, 1570)

RESPONSE: The National Forests are mandated to be managed for multiple uses, both commodity and non-commodity. Receipts derived from commodities have a ripple or multiplier effect and have both primary and secondary impacts on the economy. The commodities themselves provide benefits to taxpayers in the form of meat, wool, paper and wood, energy, minerals and water.

COMMENT: While we realize that it is difficult to put a dollar value on public enjoyment of fish and wildlife resources or on the continued existence of a healthy ecosystem as evidenced by the presence of sensitive animal and plant species, we believe that you should at least attempt to make the reader aware that these factors do influence the economic health of the Forest in many ways (DEIS, S-14 and S-17). In the Final Plan, please include a strong recognition that protection of scenic beauty, species diversity, and ecological balance, are matters of priority over all other interests. The present projection of a reduction 59-65% in old growth forest and a 17% reduction in wet meadow areas, is not a responsible management goal for the Inyo National Forest. (487, 264) (65, 329, 1930, 2170)

RESPONSE: All non-commodity resources such as wildlife and wilderness were given dollar values in the economic analyses using the "willingness to pay" technique. The Plan emphasizes non-commodity resources. There would not be a reduction of 59-65% in old growth on the Forest. That section was poorly written and has been revised.

COMMENT: We are concerned that, at best, such management would result in decreased public fish and wildlife values over the life of the Plan. We do not believe that defining the upper limits of production oriented outputs based on the public's demand provides the safeguards necessary to maintain the forest ecosystem in a viable, functioning form. Because this alternative does not set realistic upper limits on consumptive use of the forest resources, this may not be the best alternative. (487) (225)

RESPONSE: The Plan provides direction for only this planning period. All values in the Plan are the best estimates available at this time. During the monitoring and evaluation process in Plan implementation, resource impacts and outputs will be reviewed. If necessary, the Plan can be revised at any time.

COMMENT: The FORPLAN model, which has been used to develop consequences for the alternatives considered, uses an objective function based upon Present Net Value (PNV). Non-priced benefits, including wilderness values and wildlife management are very subjective assessments in the analytical methodology of FORPLAN which only provides a deterministic solution sensitive to the input assumptions. I would strongly urge additional sensitivity analysis with greater emphasis on non-priced benefits before placing too much reliance on the results of the analysis. The discount rate of 4% with sensitivity at 7 1/8% that was used may reflect current economic conditions in a deflationary period. Since the Plan time horizon is 15 years, I would also suggest a sensitivity analysis using a 12% discount rate - of course with more appropriate emphasis on non-priced benefits. This would account for potential future inflation. (351) (104)

RESPONSE: Many non-market values are included in the FORPLAN analysis, including those for dispersed recreation, wilderness, fishing, wildlife, hunting and water. These are RPA values, based on extensive willingness-to-pay research studies. The discount rates used were determined by the Water Resources Council and are being used by all National Forests.

These are real rates and do not include a risk factor, which is a major factor in private investment analysis.

COMMENT: The values used for selecting constraints to the objective function for the FORPLAN model should use a longer term planning horizon. I would suggest 150 years which is already incorporated into timber management. This long-term horizon should provide more emphasis on values for future generations and not just immediate exploitation. Because of uncertainties of the values of these future generations including new requirements for scientific knowledge, additional value would have to be given to such non-priced benefits as undisturbed wilderness, scenic and cultural items, and diversity of wildlife. (351)

RESPONSE: The farther out in the planning horizon, the less the present net value of a figure when it is discounted back to the present. 150 years is the planning horizon for timber because of rotation age. The planning period is ten years. Any predictions beyond that point are invalid because of the uncertainties of natural resource processes and the change associated with social data. The intrinsic values accruing to such factors as wildlife and plant diversity, scenic and cultural protection, for future generations is incorporated into the Plan outside of the formal modeling process.

COMMENT: The price trends used in the Plan in FORPLAN seem unrealistic (DEIS Appendix B-25). California planners use 1980 RPA timber price trends in FORPLAN even though the 1985 RPA program found price trends to be much lower. The 1980 trends increase the already overestimated timber values rapidly in the future. Due to these trends, assumed values are projected to triple within 50 years and actual current timber prices are believed to septuple within this time. Such increases are unrealistic and have significant effects on timber economics in FORPLAN. Also, the Forest Service use of a 4% discount rate is questionable. This is far lower than rates used by private industry. Forest Service investments using this rate are highly inefficient! (2170) (1790)

RESPONSE: When the FORPLAN analysis was done for the Plan, the most current data was used. This changes constantly. FORPLAN analysis cannot be redone constantly; however, the Plan can be amended or revised at any time, if during Plan implementation, the monitoring process indicates that it is necessary. The 4 percent real discount rate used by the Forest Service is appropriate for government investment. See the response above.

COMMENT: Inyo and Mono Counties contain extensive public land holdings which severely limit the tax base for these government entities. The counties' schools and roads, the beneficiaries of the Public Land Use Receipts Act of 1904, in this case will be negatively impacted by the loss of potential revenues which will result through the implementation of the Preferred Alternative. The PRF insures an immediate 9% loss in timber revenues, a steadily decreasing range revenue, a static mineral revenue and a marginal increase from the concentrated ski areas. The projected downturn in the commodities area will further damage the local communities as they strive to

develop non-recreational based industry and add to the continuing problem of cyclical heavy unemployment. In addition, the type of recreational uses, primitive and semi-primitive, which the PRF emphasizes are those which generate the smallest number of local jobs and service related income. These types of recreationists are traditionally known to stimulate the local economies the least. (2171) (297)

RESPONSE: The Preferred Alternative as defined in the Plan is designed to have no significant negative impact on the local economies. Although timber revenues will be reduced, the volume of sawtimber produced on the Inyo is not substantial. Fuelwood will continue to be produced at current levels; range use will remain at current levels; mining will be developed in conjunction with developments in the economy; energy development will take place in conjunction with increased demand or changes in social conditions. The Inyo is a producer not only of revenues, but of services to the local communities. The Preferred Alternative emphasizes both developed and dispersed recreation. (See Summary Economic Effects Tables, Chapter II, EIS).

SOILS

COMMENT: Adverse effects from activities impacting the condition of soils should be mitigated to include their restoration or the activity should not be allowed to continue. (1609)

RESPONSE: We agree that soil restoration is an important part of any surface disturbing activity. We believe the Forest-wide Standards and Guidelines for the soil resource do what you suggest. Following Best Management Practices will further minimize soil losses during surface disturbing activities.

COMMENT: Because of erosional problems arising from site preparation such as what has happened near Tehachapi, this aspect has to be regulated and monitored very stringently. (382)

RESPONSE: We agree that soil erosion is an important concern. Erosion control measures are identified during the initial activity evaluation and are used for the duration of the activity. We believe that Forest-wide Standards and Guidelines for the soil resource help us minimize soil erosion where surface disturbing activities occur.

COMMENT: If you indeed intend to reduce erosion, then the Forest Service should see that Mammoth and June Mountain Ski Areas meet erosion control standards 100%. According to the DEIS, "Soils are still eroding", the EPP'S have been only partially implemented, and "800 acres have yet to be stabilized." According to my simple calculations, that's 53%. (1634)

RESPONSE: Erosion control and stabilization on Mammoth and June Mountains is an ongoing activity which is partly in response to poorer than anticipated revegetation successes in the past and partly to yearly earth moving activities performed by the Mammoth-June Mountain managers. Until the level

of earth moving drops to a low level and the slower revegetation efforts catch up, sediment production will continue from these areas. The ultimate goal is to fully implement all erosion protection plans and to have all disturbed acres revegetated.

COMMENT: The Draft Plan and DEIS indicate soil conditions generally are "in optimal condition." When the appraisals get down to specifics, the conditions are found to be considerably less than optimal. (2178)

RESPONSE: The general condition of the soils on the Forest is that they are relatively undisturbed. The soils are generally in as good a condition as they can occur naturally. As defined in the Plan, the erosion of these soils is generally low and their productivity is optimum. Alteration of the soil by some disturbing activity increases erosion and lowers the productivity. These changes generally occur on a site specific basis and are related to man's activities. Naturally occurring events such as heavy rains can result in the same changes.

SPECIAL INTEREST AREAS

COMMENT: Support the establishment of Special Interest Areas (SIAs) for the protection of unique assemblages of sensitive or geographically rare plants and animals, unusual species and representatives of uncommon natural plant communities. Very concerned that the Plan does not list any candidate or proposed SIAs. The numerous rare plants and their associated communities are excellent opportunities for establishing botanical special interest areas. Those plant species that may not be protected by the proposed RNAs should be listed and considered for inclusion in botanical SIAs. (2047) (65, 1890)

RESPONSE: The Forest did not propose any additional botanical special interest areas (SIAs) in the FEIS. No specific candidates for botanical SIAs were identified in the scoping process for the Plan. Those areas that were suggested for SIA status in comments received on the Draft Plan may be included in a Forest recommendation to the Regional Forester for classification of SIAs.

COMMENT: Desert riparian areas of the Forest need special protection. A special interest area should be established for the Cottonwood Creek drainage in the White Mountain Wilderness. (1664)

RESPONSE: Management of the Cottonwood Creek area of the White Mountains is sensitive due to the presence of the Paiute cutthroat trout, a threatened species. Other Great Basin riparian ecosystems may be more appropriate to consider as representative.

COMMENT: It is the dream of many that sometime in the future there will be established a Great Basin National Park. I would hope that a major

contribution to this effort can be realized by the preservation and proper management of these areas of the Inyo National Forest. (481)

RESPONSE: The Inyo National Forest is managed under the laws and regulations of the Department of Agriculture, Forest Service. There is no intent to manage any area of the Forest for potential designation as a National Park. Designation of a National Park is strictly Congress' responsibility, and National Parks are managed under the laws and regulations of the Department of Interior, National Park Service.

COMMENT: In the case of Glass Creek, I suggest that an exception be made with respect to Eastern Sierra lower elevation streams and that the Glass Creek ecosystem be declared a special interest area. It presents an opportunity to preserve an entire free-flowing stream ecosystem from its source to its confluence with Deadman Creek which is unusual in the Eastern Sierra where few streams have escaped human impact. Old growth red fir, nesting goshawks, migrating deer, pine martens, and the possibility of future Lahontan cutthroat trout introduction dramatize the need for including this ecosystem as a special interest area, especially as Deadman Glass Flow and the Obsidian Dome are already being so designated. (979, 1947) (139, 214, 225, 232, 281, 293, 300, 319, 328, 329, 332, 358, 377, 381, 400, 411, 420, 430, 467, 481, 905, 912, 944, 946, 950, 952, 953, 978, 1000, 1008, 1009, 1014, 1015, 1024, 1029, 1033, 1099, 1107, 1159, 1160, 1177, 1180, 1188, 1191, 1202, 1222, 1229, 1248, 1252, 1269, 1278, 1280, 1283, 1295, 1305, 1317, 1331, 1332, 1333, 1348, 1418, 1429, 1430, 1431, 1433, 1469, 1485, 1487, 1516, 1518, 1522, 1524, 1529, 1532, 1543, 1545, 1549, 1565, 1569, 1576, 1577, 1578, 1579, 1581, 1582, 1585, 1589, 1592, 1598, 1604, 1608, 1616, 1625, 1633, 1649, 1652, 1653, 1657, 1659, 1660, 1662, 1670, 1709, 1714, 1729, 1730, 1731, 1732, 1744, 1747, 1749, 1762, 1776, 1777, 1789, 1798, 1800, 1801, 1819, 1860, 1862, 1863, 1864, 1868, 1873, 1880, 1893, 1904, 1905, 1906, 1907, 1912, 1923, 1924, 1926, 1930, 1931, 1933, 1935, 1954, 1971, 1980, 1983, 1985, 1990, 1994, 2007, 2015, 2023, 2027, 2030, 2034, 2035, 2061, 2070, 2112, 2113, 2117, 2119, 2129, 2136, 2141, 2142, 2147, 2148, 2152, 2162, 2166, 2170, 2178, 2183)

RESPONSE: The Forest intends to evaluate candidate Special Interest Areas during Plan implementation. That process will take place outside the Forest planning process. The Glass Creek meadow has been placed under Management Prescription #17 which will protect the unroaded characteristics of the area.

COMMENT: Not satisfied with the small number of botanical SIAs on the large and botanically outstanding Inyo National Forest. Request that the Inyo Forest reevaluate SIA candidates. Some examples include the narrows at the head of Marble Canyon where it leaves Squaw Flat which is the lowest elevation occurrence for the Bristlecone Pine and Caulostramina jaegeri and Haplopappus gilmanii; Coldwater Canyon in the White Mountains where the most outstanding population of Dedeckera eurekensis occurs as well as other special botanical values, and Inyo mountain crest from Sidehill Spring to one half mile south of Seep Hole Spring. (1108) (91, 1411)

RESPONSE: The objectives of Special Interest Areas are to protect and, where appropriate, foster public use and enjoyment of areas with scenic,

historical, geological, botanical, zoological, paleontological, or other special characteristics. Another objective is to classify areas that possess unusual recreation and scientific values so that these special values are available for public study, use or enjoyment. One fact to consider, especially in relation to rare, endangered, or sensitive plants, is the effect of designation on the plants themselves and the surrounding ecosystem. Formal designation as an SIA may not, in the long run, achieve the stated goals of protection, since the designation will undoubtedly attract use which could possibly damage these areas. A careful evaluation of potential candidate botanical SIAs needs to be made prior to recommending them for classification.

COMMENT: Anti-dunes atop White Wing Peak and dimicton cliffs in the southern Deadman drainage should be investigated for possible geologic RNAs or SIAs. Eastern Sierra red fir, rebounding from volcanic annihilation, should be studied as a possible biologic RNA or SIA. (2185)

RESPONSE: We will evaluate these features you suggest during Plan implementation.

COMMENT: There needs to be an SIA prescription for candidates and designated sites that is parallel to the one for RNAs. (1108) (991, 1411)

RESPONSE: There are different purposes for RNAs and SIAs. RNAs are not designated for the primary purpose of recreation and use. Their primary purpose is for research; anything that might interfere with that purpose would be discouraged or prohibited. The management plans for RNAs contain specific direction for managing the areas for the purposes of research. If other uses such as recreation can be accommodated without impairing research values, they can be permitted. The Forest Plan identifies potential RNAs and applies Prescription #5 to deal with the management of existing and potential RNAs. This is to insure that existing values of potential RNAs are preserved until such time that the area is formally evaluated, nominated, and classified as part of the RNA system.

On the other hand, SIAs have a different objective which is to protect and, where appropriate, foster public use and enjoyment of areas with scenic, historical, geological, botanical, zoological, palentological, or other special characteristics. The objective is to also classify those areas that possess unusual recreation and scientific values so that these special values are available for public study, use, or enjoyment.

After a feature or area is classified as an SIA, the management plan for that SIA would detail any protective measures necessary for preservation of the area. The Forest does not feel that a special prescription is needed to manage identified potential candidates for special interest areas.

COMMENT: An effort needs to be made to identify and protect areas of special geologic significance. Because this was not done in the past, significant volcanic blast pits were obliterated from the slopes of Mammoth Mountain Ski

Area during terrain modifications to establish ski runs. The Inyo has an abundance of geologic features which are studied by researchers and students throughout the country. These features need inventory and protection to assure their longevity. (2185)

RESPONSE: The Affected Environment section of the EIS contains a listing of geologic features that have been identified as candidate areas for special interest geologic areas. In addition, the EIS contains a listing of potential candidate National Natural Landmarks. These will be evaluated and recommended for nomination by 1990 per direction in the Forest-wide Standards and Guidelines. Evaluation and nomination will occur outside the Forest planning process.

COMMENT: Management Area #5 - Glass Mountain. The area around Glass Mountain is home to the largest pure Jeffrey pine forest in the world, as well as a pure stand of limber pine (Sentinel Meadow RNA), numerous wet meadows, steep-walled canyons, and sand flats. Glass Mountain was an important obsidian source to local Indian tribes and, at 11,123 feet, towers above the surrounding landscape. It affords unparalleled views of the White Mountains and Sierra Nevada as well as the Mono Basin and Owens Valley. Due to its highly diverse habitat types and unique floral and faunal assemblages, the Glass Mountain ecosystem should be fully protected from human disturbances. (140)

RESPONSE: The Forest has listed potential National Natural Landmark (NNL) candidate areas, one of which is Glass Mountain. NNL designation would not change the management of the area, but it would focus attention on the special qualities of the area. Another possible form of designation would be as a Special Interest Area. However, that designation includes recreational use of the area as one of its objectives which you imply would be detrimental. A Research Natural Area designation is not desirable since the area has not been identified as needed on the list of potential RNAs. Part of the area you identify has, as you stated, already been designated as the Sentinel Meadow RNA. There are no plans to expand the Sentinel Meadow RNA because it was designated to preserve the lodgepole pine ecosystem.

COMMENT: With respect to Special Interest Areas, Figure III-22 found on DEIS III-89 lists a number of candidate National Natural Landmarks but fails to describe the special features of each. This omission should be rectified. (2190)

RESPONSE: Specific information regarding NNLs is available at the Forest Supervisor's Office in Bishop, California.

COMMENT: Management Area #7. Within an area slated for Prescription #10 - High Level Timber, exists a very unique set of features generally not known to the Inyo visitor, the Chalk Bluffs. I would like to see some further protections given to the area immediately surrounding, and upslope from, these features to prevent any accidental damage occuring from the timber practices. (1608)

TIMBER MANAGEMENT

RESPONSE: During the scoping process for potential Special Interest Areas and National Natural Landmark areas, the Chalk Bluffs were not identified as being on National Forest land. Management of private land is outside the scope of the Forest Plan. Any measures needed for protection of significant features on National Forest land during timber harvesting operations would be covered in the timber sale operating plan.

TIMBER MANAGEMENT

COMMENT: Please add the following under "Timber": Allow timber production only where it has been documented to be cost-effective. (1638)

RESPONSE: The ASQ determination for the Forest is based on economic analysis. Individual sales include project-level economic analyses. Sales on the Inyo are cost-effective.

COMMENT: An area of concern is the east slope of White Wing Ridge. The access road is #2550, about 0.5 mile northwest of Upper Deadman Campground. About 0.6 miles up the road, a ravine coming down on the left would make a good hiking trail. Two groves of Jeffrey pines, spray marked blue for cutting, are nearby. Either or both would make a fine picnic area. Along the first mile of this road are mostly mid-sized and young fir trees. Jeffrey pine seedlings are restricted to the road cut and in a few situations with southern exposure. Under present climatological conditions, what is the regeneration potential of this area in Jeffrey pine, if the logging is carried out? (1631)

RESPONSE: This is site specific information beyond the scope of the Forest Plan. Your comment has been referred to the Ranger District for use in project analyses.

COMMENT: Where are the 29,000 acres unregenerable within five years of final harvest? What type of soils? Red fir, Jeffrey pine or lodgepole? (DEIS II-79). This should be discussed in "Affected Environment". (1634)

RESPONSE: The acres mentioned are scattered over the Forest on various sites with a mix of species and are identified by site index only. They are designated by the FORPLAN model from the Forest database and are automatically excluded from consideration for timber harvest.

COMMENT: Prescription #8 - Wild and Scenic Rivers. Regarding timber harvest for recreation and scenic segments, no timber harvesting should be allowed to prevent erosion. (121)

RESPONSE: Standards and Guidelines for soil, water and riparian areas provide protection from soil erosion for silvicultural treatments.

COMMENT: The selected Plan should oppose logging, road construction or commercial development in the fragile Glass Creek Meadow. (281)

RESPONSE: Glass Creek Meadow has been deleted from the timber base. Glass Creek Meadow will be managed under Prescription #17.

COMMENT: The costs and benefits of timber in the Preferred Alternative clearly show that this alternative is putting too much money into timber production. The ratio is much better in the CEE Alternative and probably best in the AMN Alternative. (5) (1723, 2170)

RESPONSE: Economics is only one of many evaluation criteria used. The PRF Alternative emphasizes a mixture of commodity and amenity resource outputs; the CEE Alternative seeks the most cost-effective mix of land allocations; and the AMN Alternative maximizes amenities with little regard for the effects on commodity outputs. The Final Preferred Alternative best answers all the issues and concerns while achieving a balanced mixture of all resource outputs.

COMMENT: With recreation a major part of the Inyo's use, access is very important. Timber production promotes and maintains both controlled and uncontrolled access. (469) (280, 2179, 2197)

RESPONSE: There will be approximately 2 miles of new recreation roads constructed annually during the planning period (10 years), and 4 miles is scheduled for reconstruction. For the most part, these will be interior campground spur roads. No additional road construction for timber harvest is needed. Existing timber roads can provide access for recreation users.

COMMENT: It is noted that the ASQ is higher in the Preferred Alternative than in the MMR and CEE Alternatives. Better to reduce the harvest level and make the PNV improve. (5) (2170)

RESPONSE: Present Net Value (PNV) in the Inyo FORPLAN model is most sensitive to recreation values. The model does not allocate acres to timber production if there is existing recreation use on them. PNV changes with reference to timber in response to physiographic conditions such as slope, elevation, soils, and other features.

COMMENT: Logging on the Inyo for other than fuelwood seems illogical other than to provide a few contract jobs and mill jobs in far off counties. Economically, it is not a cost-effective operation as planned and it affects recreation, tourism, wildlife. (484) (65, 1498, 1611)

RESPONSE: Logging on the Inyo provides benefits to local economies in addition to those derived from wood products. These include employment opportunities and commodities purchased with salary monies. Standards and Guidelines and Management Direction ensure that timber production will not adversely impact other resources.

TIMBER MANAGEMENT

COMMENT: Protect and restore the largest pure Jeffrey pine forest in the world. (298) (1649)

RESPONSE: The Forest goal in the Plan is to manage the timber resource to provide a sustained yield of timber products. Management direction for timber requires that artificial regeneration be completed within three years of clearcutting to ensure that adequate restocking is attained within five years of harvest. Tree species originally occupying the stand are replanted with seedlings germinated from locally collected seed. The Indiana Summit Research Natural Area (1,162 acres) is a pure stand of Jeffrey pine that will not be entered.

The Allowable Sale Quantity (ASQ) has been reduced in the Final Plan. Timber west of U.S. 395 will be managed under the uneven-aged management system; harvesting in the red fir stratum has been deleted for the planning period.

COMMENT: Termination of all logging practices in the Inyo and restoration of all previously logged areas. (298) (79, 157, 166, 266, 315, 384, 450, 461, 492, 934, 954, 970, 1407, 1471, 1500, 1548, 1592, 1602, 1608, 1611, 1632, 1656, 1668, 1699, 1700, 1759, 1858, 1900, 1971, 2101, 2124, 2129, 2142, 2177, 2180, 2202)

RESPONSE: National Forests are managed for multiple uses. The National Forest Management Act requires that any forested area that is understocked as a result of logging be reforested in five years.

COMMENT: Very much against increasing timber cutting in the Forest. Probably those cutters will get a cut-rate price. (931) (19, 27, 89, 214, 232, 274, 278, 293, 300, 320, 329, 398, 430, 441, 466, 484, 915, 1107, 1161, 1185, 1317, 1407, 1421, 1515, 1532, 1545, 1577, 1592, 1660, 1677, 1691, 1693, 1706, 1778, 1781, 1789, 1805, 1806, 1809, 1813, 1814, 1819, 1820, 1838, 1841, 1851, 1865, 1874, 1875, 1893, 1927, 1971, 1977, 1992, 2023, 2033, 2061, 2103, 2113, 2129, 2164, 2167, 2170)

RESPONSE: The ASQ has been reduced in the Final Plan. The purchaser of Forest Service timber pays at least the current value of the wood on the stump less costs associated with logging, transportation and manufacturing. Timber is sold by competitive bid for at least minimum rates.

COMMENT: The consideration of removal of timbered areas with more than 30% slope is not sound management. Current economics may not justify environmentally sound logging methods at present, but with the increasing demand for timber products, these areas will become economically viable. (469) (225, 1432, 1458, 1891, 2048, 2179)

RESPONSE: If it becomes economically viable to harvest timber on slopes greater than 30%, 14,154 acres of these lands have been designated as capable and suitable for commercial timber production. These lands will provide flexibility in responding to changing economic conditions.

COMMENT: Any and all cutting should be restricted to that which enhances scenic values, maintains watershed, and preserves wildlife habitat. (481) (65, 76, 214)

RESPONSE: There is specific direction for each management area to ensure that management of the timber resource is compatible with other resource values and the management emphasis of the area.

COMMENT: Permanent growth plots should be established to monitor the Forest inventory. The stands are, at best, Site IV and V and are difficult to regenerate. (484)

RESPONSE: Current random sampling by strata every ten years produces statistically accurate growth and volume data. The average timber site on the Inyo Forest is Class IV on the commercial timberland. In the past five years, this Forest has successfully reforested 651 acres of Jeffrey pine, 149 acres of lodgepole pine and 49 acres of red fir at costs below average regional costs.

COMMENT: Restrict timber harvest to the Jeffrey pine timber type on the Forest. From a Region 5 perspective, the very small yield from fir stands on the Inyo does not justify a sale program. (1099) (1652)

RESPONSE: There will be no timber harvest in the red fir stratum this planning period. Timber management will only occur within the Jeffrey pine, mixed conifer and lodgepole pine strata.

COMMENT: I have earned a living for 30 years from forest products. We are concerned as our employers feel that if more harvest timber is taken away that our jobs will also be in jeopardy as the supply of timber will be reduced by the future proposals. If we keep losing timber to wilderness areas and cannot get enough to keep the sawmill running, I, along with a lot of other people, will lose our jobs. (1196, 1198) (135, 352, 990, 1528)

RESPONSE: Economics and employment were taken into account in developing the Final Preferred Alternative. The ASQ was not reduced to a level that would significantly affect jobs. In addition, the Plan will be reevaluated after five years and can be amended if economic or other conditions warrant.

COMMENT: Commercial timbering should be allowed west of U.S. 395 and we recommend more roads be cut into these areas. (1429)

RESPONSE: Timber will be managed west of U.S. 395. Because of the amount of recreation use in the area, however, the uneven-aged management system will be used. As the red fir stratum in this area will not be harvested during this planning period, no additional roads will be needed to access the timber resource.

TIMBER MANAGEMENT

COMMENT: No clearcutting or road building for timber harvesting should be allowed. (1548) (121, 214, 278, 298, 329, 466, 968, 1108, 1464, 1562, 1616, 1668, 2048)

RESPONSE: There is no road construction scheduled for timber harvesting in the planning period. West of U.S. 395 the timber will be managed under the uneven-aged management system. Timber east of U.S. 395 will be managed under the even-aged system. No timber will be cut in inventoried roadless areas.

COMMENT: Until the companies that own their own forests cannot supply public demand, there is no need to give away public timber. What would be the effects on the economy of closing the Inyo to logging? (1600)

RESPONSE: Privately owned forests cannot supply the softwood needs of the nation. Government timber is appraised on stumpage values and sold by competitive bidding using the appraised value for the minimum bid. The Inyo sells timber averaging $1,000,000 per year at an annual cost to the Government of $800,000.

COMMENT: Achieving the Forest Service goal of providing sawtimber "while maintaining other resource values..." may not be possible. Recreation values always suffer in timber management areas. High quality recreation and timber management are not compatible, no matter whether the harvest method is clearcutting or selective cutting. (1650)

RESPONSE: Timber management has been reduced west of U.S. 395 where there is high recreation use. Recreation values do not always suffer in timber management areas. Clearings in the forest can provide visual diversity, additional benefits for wildlife species and opportunities for primitive camping. Interdisciplinary teams develop timber projects to ensure that all resources are considered in the proposals.

COMMENT: The Inyo Forest is capable of producing 16.9 million board feet of timber annually from 110,000 acres. We support timber management on the largest available timber base, 110,701 acres to attain RPA outputs through sound silvicultural practices applied on a site-specific basis. We need an annual timber sale program of at least 16.9 million board feet off of 110,700 acres of forested land suitable for timber production. Any less would not only affect my job, but thousands more in the wood products industry. (1432, 1527, 348) (228, 280, 290, 291, 304, 335, 347, 349, 357, 422, 468, 469, 918, 951, 983, 1198, 1226, 1525, 1526, 1528, 1549, 1754, 1790, 1791, 1869, 2017, 2048, 2134, 2171, 2179, 2197)

RESPONSE: Markets at the present time are not capable of supporting such an extensive timber program. The Plan has been developed to provide for a continuing supply of wood products, based on current conditions. If market conditions change, the Plan can be amended to provide for additional volumes.

COMMENT: Insure that below cost timber sales do not take place. Back up information on cost efficiency of red fir logging. Separate analysis of logging. Red fir and Jeffrey pine are lumped together. (1845) (1349)

RESPONSE: Forest Service appraisal procedures estimate a fair market value on the timber and conditions of sale. An analysis of all logging and appraisal costs are made prior to advertisment, and a determination of cost efficiency is made on each sale. If the appraisal indicates a deficit net stumpage or below cost value, then a request from the timber industry is required before the sale can be advertised. A mixed species sale having high value pine and low value fir has to be cost-effective on the whole before it will be advertised. Values for all species are determined and appraised as a total sale offering. If other extenuating circumstances exist on a deficit sale without an industry request, the case will be submitted to the Regional Forester for concurrence before proceeding with advertisment.

COMMENT: Request that logging only occur in SMZs (Streamside Management Zones) where disease or insect control are required. If logging occurs in the SMZ, a description of the techniques to be used to harvest the trees such as how logs will be removed and how much canopy cover shall be left intact should appear in the Plan or EIS. (1108) (149, 319, 328, 329, 1269, 1648, 1776)

RESPONSE: In the EIS and Plan, the term riparian area is used instead of the term SMZ. The timber Standards and Guidelines require the use of logging equipment that will minimize soil disturbance, compaction and their impacts. These areas are classified as Regulation Class III (the Glossary in the EIS defines regulation classes). Regulation Class III prescribes cutting only single trees and/or small groups of trees, primarily to maintain the vigor of the stands. In other words, this would be for disease or insect control. The riparian Standards and Guidelines specify the maximum amount of soil disturbance allowed and limit the amount of tree removal by requiring the prevention of adverse changes in water temperature. Riparian area acres are not included in the timber base.

COMMENT: Concerned with potential losses of genetic diversity. Regulated forests will be revegetated with nursery stock. Selected genotypes will be planted over large expanses of land. Can we citizens be assured that this nursery stock is providing the necessary diversity to cope with future changes and overcome natural disasters such as insect infestations? Acid rain and immigration of new forest pests are serious perturbations with which our forests will need to cope. This question cannot be answered, but it is obvious that the proposed regulated Forest will not be able to cope as well as a natural one. Are we planting uniform low diversity gene pools that produce fast growing, disease resistant trees which do not have other important traits? (1108)

RESPONSE: Only 75,233 acres out of a possible 173,200 acres of land that are capable of and suitable for commercial timber production will be managed for timber. Of the 173,200 acre potential timber base on the Inyo, 62,500 acres have been deducted because they are wilderness or Research Natural Areas;

41,500 acres are assigned to other uses such as riparian and recreation areas. There are an additional 326,400 acres of commercial timberland that have been judged as not capable of growing continuous volumes of timber and 27,900 acres that are on steep slopes that could not be regenerated.

A wide genetic base is obtained in the seeds sown for reforestation through the regional seed collecting policy. This policy requires obtaining seed from many stands within each elevational zone that are far enough apart to prevent cross pollination between stands. Seeds are also collected from the upper two-thirds of the crown to prevent self pollination. All seedlings planted on the Inyo National Forest are from naturally pollinated cones. The Inyo has no cloned trees (trees having the same genes).

COMMENT: Sawtimber from the Inyo has been in high demand. All the sawtimber offered for sale has sold, no sales have been turned back, and there is relatively little uncut volume under contract (Plan III-33). In light of that situation, your statement that "...there are no local sawmills...that rely on Forest timber outputs for economic stability" is incredible. (1432) (1869, 2179, 2800)

RESPONSE: This has been changed to read: "Sawmills in Gardnerville, Nevada and Loyalton, California depend upon logs from the Inyo National Forest. The sawmill in Inyokern, California has also purchased Forest timber during the past ten years. There are, however, no local communities that rely on Forest timber outputs for economic stability."

COMMENT: Prescription #10 - High Level Timber Management. Given that a large number of new roads are created by a timber operation, I recommend that the final document include the stipulation that all unneeded roads be physically obliterated after logging occurs. This should become a stipulation on all logging agreements with commercial timber companies. (1433) (484, 1648, 2190)

RESPONSE: No new road construction for timber harvesting is scheduled in the planning period.

COMMENT: Although timber management is not a major use on the Inyo, it is one of the most economically positive. Timber production contributes 34% of the 25% county receipts on only 6% of the Inyo's land base. (469) (2179)

RESPONSE: The 25 percent of timber receipts returned to the counties for schools and roads was used in calculating the PNV for each alternative.

COMMENT: Socio-economic factors are not being taken into account in the planning process. With 30% of the Inyo National Forest in wilderness, the uses which fall under wilderness such as recreation and aesthetics are more than adequately covered. It is time to take a hard look at the consequences of locking more timberland away into wilderness areas. Benefits of timber

management include wood supply for the wood products industry which creates jobs which is good for local businesses. (464)

RESPONSE: The Plan was designed to meet current demand and to have a positive, rather than negative, impact on local economies.

COMMENT: The pinyon-juniper area should not be "managed" at all but simply preserved. (1083) (295)

RESPONSE: Pinyon-juniper is not included in the timber base. No cutting of these species is planned for timber management. Dead and downed wood may be cut for fuelwood. Pinyon-juniper may be thinned out in areas where they have encroached to enhance and improve range and wildlife habitats.

COMMENT: Reduce forest harvesting. Oppose timber harvest west of U.S. 395. With high visual and recreational values west of the highway, proposals for intensive timber management are inappropriate. If this area is included in the cut, then only uneven-aged management or selective cutting should be allowed. (125, 1108) (3, 5, 6, 33, 59, 67, 77, 88, 97, 116, 117, 119, 123, 124, 149, 181, 223, 231, 293, 298, 300, 345, 377, 381, 400, 428, 430, 438, 466, 481, 498, 914, 933, 950, 952, 1025, 1032, 1099, 1183, 1188, 1191, 1202, 1218, 1230, 1236, 1253, 1269, 1277, 1295, 1317, 1332, 1333, 1348, 1372, 1388, 1401, 1411, 1424, 1430, 1431, 1451, 1485, 1487, 1496, 1498, 1517, 1521, 1522, 1532, 1534, 1543, 1545, 1546, 1548, 1565, 1566, 1576, 1608, 1610, 1613, 1630, 1631, 1632, 1638, 1648, 1649, 1650, 1652, 1663, 1675, 1682, 1690, 1712, 1714, 1744, 1776, 1777, 1790, 1795, 1798, 1816, 1836, 1842, 1844, 1858, 1860, 1864, 1868, 1889, 1891, 1907, 1920, 1930, 1931, 1936, 1938, 1980, 1982, 2007, 2035, 2059, 2115, 2120, 2123, 2142, 2147, 2170, 2177, 2185, 2190, 2194, 2195, 2209, 2210, 2211, 2218)

RESPONSE: The Allowable Sale Quantity (ASQ) has been reduced in the Final Plan. Timber west of U.S. 395 will be managed under the uneven-aged management system; harvesting in the red fir stratum has been deleted for the planning period.

COMMENT: I object to the low fees the Forest Service charges the timber companies. The Forest Service spends more to maintain these forest areas than is collected in fees. (1191) (91, 1430, 1871, 1964, 2037, 2054)

RESPONSE: This Forest collects approximately $1,000,000 per year in timber receipts and spends approximately $800,000 per year to manage the timber. Costs include reforestation, timber stand improvement, range and wildlife habitat improvement and timber sale preparation and administration.

COMMENT: The amount of wood allowed to be cut on the Inyo, in my opinion, is not a sustained yield. I oppose the use of herbicides on tree plantations and would like to see more labor intensive work utilized rather than the USDA become an offshoot of major chemical companies. (1571)

TIMBER MANAGEMENT

RESPONSE: The Inyo, according to inventory data, is cutting substantially below the maximum sustained yield volume. The Inyo does not use herbicides for vegetative management.

COMMENT: As stated on DEIS III-91, "The Inyo is not a significant contributor to the Regional timber target thus departure would not significantly affect achievement of these targets", and "...no local communities are dependent on the supply of timber from the Inyo (so) departure would have no local economic effect." It is my feeling that if the above are the conditions on the Forest, then it would be reasonable and practical for the Forest to be withdrawn, more or less completely, from RPA Regional assessment. Furthermore, conditions of high elevation (combined aridity, high costs of site preparation, planting and pest control), would seem to point to a phase-out option if we compare the relatively meager output of the Forest to the damage to other resources such as loss of habitat, scenic and recreational opportunities, soil erosion and wildlife. (1586) (2115)

RESPONSE: The Inyo did not meet the criterion of supplying enough timber to support a lumber mill to require a departure alternative. Mills in adjacent towns do depend upon Inyo timber to fill out their log supply. Site preparation, planting and pest control costs are among the lowest in the Pacific Southwest Region. The Management Direction in this Plan along with mitigating measures in project environmental assessments reduce impacts and even enhance other resources.

COMMENT: Timber cutting should be allowed only to maintain a healthy forest and wholesale cutting of timber should not be allowed. (1587) (381)

RESPONSE: The objective of harvesting trees in timber management is to increase vigor, health and growth of the timber resource.

COMMENT: Management Area #7 - Upper Owens River. Strongly encourage decreasing timber harvest in this area, especially in viewshed of campgrounds and highway. (1616) (278, 1638, 2048, 2170)

RESPONSE: Visual qualities must be met on each timber sale. Areas adjacent to campgrounds and U.S. 395 are in retention areas and thus are not included in the timber base. The red fir stratum has been deleted from timber management for this planning period and uneven-aged management will be employed west of U.S. 395.

COMMENT: In the Timber AMS, you say "On the Inyo, 80% of normal stocking is the desired stocking level for regenerated stands". Is this 80% of 29.4% or 80% of 100% stocking? What is "normal stocking"? In your yield tables, you assume 85% stocking; is this 85% of 29.4% or 85% of 100% (or 200 or 680 trees/acre respectively)? It makes a big difference. (1634)

RESPONSE: Normal yield, sometimes referred to as maximum yield, is the volume per acre or basal area at a given age and site class where mortality starts because of overstocking. It is the maximum volume the site is capable of sustaining. The 85% stocking would be 85% of the normal stocking.

COMMENT: Plan III-33. Regarding your statement "As both the market and regeneration success have improved, red fir harvest has become more desirable. One Forest Service employee in timber recently said to me "Right now there is not much demand for "true fir" due to competition with the Canadian wood products market and also because red fir is not considered to be good structural (sawlog) material. (1634)

RESPONSE: The timber market for all species fluctuates. True fir is utilized as dimensional wood, plywood and various pressed woods, and paper production. No harvest of red fir is scheduled for the planning period.

COMMENT: Regarding prescribing "Silvicultural methods...that would enhance the health and vigor of the Forest...", please define which silvicultural methods you intend to implement in addition to removing hazard trees in concentrated recreation areas. Do you mean things such as the Deadman Timber Sale adjacent to the Deadman Campgrounds? (1634)

RESPONSE: The silvicultural method would be decided for site-specific areas with a project environmental analyses. Prescription #12 would apply only within the boundaries of concentrated recreation areas such as the Deadman Campground.

COMMENT: I thought the requirement for long-term sustained yield was an ongoing thing. I am confused by this statement. (1634)

RESPONSE: Long-term sustained yield is an ongoing thing and the Forest is required by law to manage the timber resource to ensure this. The ASQ is below the long-term sustained yield capability of the Forest.

COMMENT: I oppose increases in timber harvest and cattle grazing, especially in the White and Inyo Mountains. This beautiful area should not be spoiled by special interests. (1685)

RESPONSE: No timber harvest is planned and cattle grazing has been reduced. A substantial portion of these mountains is recommended for wilderness designation in the Final Plan.

COMMENT: 30% removal of trees on slopes in excess of 25% should not be permitted; but, if this type of restriction is to be applied, there should be some discussion on how it will be enforced and with what funding. (1740)

RESPONSE: There is no harvest scheduled for timber on slopes greater than 30% unless economic conditions change. Timber sale contracts include

implementation restrictions that the logger must meet to protect the soil, water and visual resources.

COMMENT: I totally disagree with the application of your High Level Timber Management Prescription #10. Why not manage the timber west of U.S. 395 and even a mile or two east of U.S. 395 for existing and future recreational potential? Establish longer rotations, attempt to maintain the older trees or at least let the younger trees grow up to be veterans. Massive clearcuts, 80 year rotations and tree farms are for the more productive timber forests such as you find in Oregon and Washington, not the dry arid areas of the Eastern Sierra. (1920) (214, 430, 466, 481, 1608, 1891)

RESPONSE: Uneven-aged management will be employed west of U.S. 395. The rotation ages have been extended. Clearcuts are limited to 5 acres west and 20 acres east of U.S. 395. Even-aged management is very effective for maximum yields on the east side of the Sierra and Prescription #10 is the appropriate prescription for these lands where timber values are not overridden by recreation values.

COMMENT: Planting new trees in rows isn't very forest-y, and until they have grown, the wildlife in the forest will simply die. The new planted forest will also die without wildlife to keep the total ecology going. (1995)

RESPONSE: The row effect is reduced after pre-commercial thinning. The clearings are small, usually less than 10 acres, and are surrounded by mature forest. There is adequate cover for wildlife. In addition, the openings provide different habitat conditions to benefit additional wildlife species.

COMMENT: Timber supply in California is emerging as a critical problem of the Forest planning process. Most people feel that the contribution of the Inyo is insignificant to the overall supply of California. I believe this simply is not true. As massive consumers of lumber, we as a society need a steady supply of this renewable resource long into the future. Not rip and run, but professionally managed, non-declining, even flow. Not a hundred percent even-aged management, but site-specific forestry. (1845)

RESPONSE: Establishing a regulated forest to meet long-term sustained yield on all available and suitable timberland was one of management's concerns under the Issues and Concerns section in the DEIS. Long-term sustained yield was also a timber policy requirement in formulating the alternatives. Site specific timber management is described in the Prescriptions and Management Areas using both uneven and even-aged management.

COMMENT: Regenerate past logged areas to be used primarily for fuelwood for local consumption. (345) (318, 380, 399, 447, 448, 1483, 1484, 1567, 2172, 2173, 2174)

RESPONSE: Pre-commercial thinning, slash utilization and small lodgepole sales currently adequately supply the demand for fuelwood. A large amount of the increased demand for fuelwood in the future will come from commercial thinning.

COMMENT: Current Forest Service practices are destroying the forest topsoil and ecological habitat. It is time for true long-range planning free of the economic bias imposed by timber and development interests. (1445)

RESPONSE: The environmental impacts of each proposed timber sale are analyzed by an interdisciplinary team prior to identifying a preferred alternative. A soil scientist is included on each team. Any practice that would have a negative impact on the soil is mitigated to reduce or prevent damage. The Standards and Guidelines relating to soils further assure the protection of the soil resource.

COMMENT: I deplore the push for more profits from timber and meat production on the part of private firms which should have less power and decision input on the fate of our public lands. (1447)

RESPONSE: The National Forest Management Act requires that the Forest consider all public input. Private firms, both profit and non-profit, are one segment of the public.

COMMENT: Allow the Forest to regenerate naturally. (1451)

RESPONSE: Natural regeneration on the Inyo is usually long-term and unpredictable resulting in unnecessary lost growth. Artificial regeneration (planting) has proved to be very successful in terms of both survival and growth.

COMMENT: Provide true stewardship in the spirit of "sustainable forestry" by establishing a system of stewardship from landed foresters who are paid for board feet grown rather than board feet cut, who live on and oversee and enhance the diversity of the Forest ecosystem for which they claim responsibility. (1451)

RESPONSE: Timber growth is the primary objective of timber management. Timber harvest is only one tool of many used in siliviculture to increase timber growth.

COMMENT: Plan IV-13. Reforestation should be mixed species. (1431)

RESPONSE: Species composition is a decision the silviculturist must make for each stand regenerated. The policy on the Inyo is to reforest with the climax species that originally existed. Not all sites on the Inyo will support mixed conifer species. Most of the stands on the Inyo are naturally composed of single conifer species.

TIMBER MANAGEMENT

COMMENT: The two areas most susceptible to new or increased motorized use resulting from timber road access are the unroaded forested lands east of San Joaquin Ridge and Monache Area of the Kern Plateau. (2178)

RESPONSE: There is no road construction scheduled for timber harvest access during the planning period.

COMMENT: Reasons for use of conditional "would" in DEIS IV-28. Has suitable timberland declined by 65% since 1982? Is the greatest impact in the Jeffrey pine forest? (2178)

RESPONSE: This statement in the Draft EIS is misleading and has been corrected. It was a prediction of timber conditions after 50 years. Since rotation ages have been extended and ASQ lowered, this figure is substantially reduced. In addition, it only applies to those acres managed for commercial timber production. During the planning period, Jeffrey pine, lodgepole pine and mixed conifer stands are scheduled for harvest.

COMMENT: The need (DEIS III-33) to examine the size of the commercial timber base and the projected yield is a prerequisite to the Forest Plan and DEIS. Is study under way? Costs, completion date? (2178)

RESPONSE: This was done prior to the publication of the Draft EIS and Plan.

COMMENT: We oppose logging and road building in previously untouched, unroaded areas and wilderness areas which contain significant trout resources, unless the area is subject to an approved fishery management plan. These activities are certainly not justified when timber revenues and local demand are extremely low. Society is not realizing a net benefit from this continuing destruction of intact forest. The industry benefits at the expense of the forest ecosystem and society. (2183) (1952)

RESPONSE: There is no road construction or timber management planned in unroaded areas.

COMMENT: An allowable harvest of 11.4 MMBF needs to be maintained. The current timber harvest level of 11.4 MMBF is far below the annual growth on the Inyo Forest. Most other benefits and uses, except wilderness, are compatible with timber production. All of the Forest should be intensively managed for timber. (257, 1647) (469)

RESPONSE: The ASQ has been reduced because of overriding recreation values in the Mammoth/June area. Pure stands of red fir have been removed from the suitable timber base; however, 14,154 acres of lands with slopes greater than 30% could be harvested if economic conditions change.

COMMENT: We are very concerned with the proposed decrease in allowable annual harvest on your forest. Despite a heavy demand for timber on the Inyo and projections for increased demands for forest products, there is a shift away from timber management. We have been a purchaser of Inyo timber for several years and have come to rely on your forest as a dependable source of timber. The Inyo is not our only source, but total timber supply is an aggregate of several partial sources, each critical in maintaining the total. The bidding for the two sales we currently have under contract reflects the demand for, and the value of, the timber resource on the Inyo Forest. The timber program is a money making proposition on the Inyo, and increasing it will increase returns to the U.S. Treasury. (1899) (468)

RESPONSE: The Plan took into account the need for a continuing steady supply of timber from the Inyo to meet current demand. The timber program on the Inyo is cost effective; however, in the Mammoth/June area recreation values override the timber values. If economic or social conditions change, the Plan can be amended.

COMMENT: One employee directly involved in the wood products industry can generate 3 to 5 jobs in industries providing services and products to the timber industry. The possible loss of jobs in other industries such as transportation, tire distribution, petroleum products, machine shops, and others must be taken into account. The proposed Plan has not adequately addressed how these businesses will be affected. We have spent $7.5 million dollars since 1976 on capital improvements at our Loyalton Mill. We have made a commitment to the community and would like to stay in business and remain a stable part of the eastern California community. We feel the U.S. Forest Service should make the same commitment to ensure that a viable timber industry will be able to continue to operate here. (1899)

RESPONSE: The Final Plan is proposing a balancing of needs for both timber and recreation opportunities. There will be continued supply of wood products from the Inyo, both sawtimber and fuelwood, while providing for recreation opportunities that are unique in the Region. Utilization of both resources provides jobs and economic benefits to local economies.

COMMENT: DEIS II-156, Figure II-29. This figure is a summary of acreage allocations by prescription for the previously discussed alternatives. However, in this summary there are acreage discrepancies given in the Prescription #10 - High Level Timber Management and between Figure B-10, DEIS Appendices B-55 which is titled Constraints Imposed on Alternatives Considered in Detail. This figure also shows CAS timber management lands, but the acreage allocations are different from those shown in Figure II-29 of the DEIS. As an example, Figure II-29 of the DEIS states under the Preferred Alternative that 86.7 M acres are available for high level timber management, but Figure B-10 of the DEIS Appendixes state that timber management lands include only 69.2 M acres. The other alternatives also vary in acreages as stated in these figures. I understand that various constraints such as MMR's, MIR's and others may reduce the actual acres used for timber management; however, the way the acreage allocations are presented appears

incorrect and needs to be clarified between the draft Plan, DEIS and DEIS Appendixes. (2800)

RESPONSE: The acreages in Figure II-29 of the DEIS showed gross acreages while those in Figure B-10, page B-55 of the DEIS Appendixes showed net acreages with such things as Sand Flats taken out. Figures have been changed to reflect Final Plan allocations.

COMMENT: Plan C-7, Figure C-2 (Land Classification for Timber). Line 7 states that 110.7 M acres are CAS for timber management. However, Figure II-29 of the DEIS states under the RPA Alternative that 119.8 M acres are available for timber management. How can this be when only 110.7 M acres are CAS? Further clarification is needed here. Line 10 of Figure C-2 also states that total suitable forested land equals 69.2 M acres which corroborates the Preferred Alternative's acreage allocation for timber management in the DEIS Appendixes Figure B-10, but not the allocation as stated in Figure II-29 of the DEIS. (2800)

RESPONSE: Figure II-29 is gross acres which include non-commercial land while all other figures are net acres.

COMMENT: The Forest Service should continue its practice of over-the-snow logging. In areas where over-the-snow logging conflicts with winter recreation, timber harvesting should be subordinate to that recreation. (1891) (469, 1099)

RESPONSE: Standards and Guidelines require that loggers provide access to designated trails bisected by plowed haul roads. Site specific over-the-snow logging and winter sport conflicts are mitigated in individual timber sale environmental assessments. The public has the opportunity to comment on each sale during these assessments. In addition, the Forest Service requires interdisciplinary input including recreation in project evaluation.

COMMENT: Plan III-33, Timber. Please add to end of the third paragraph: "There is also a need to consider setting aside portions of the red fir and Jeffrey forests between Mammoth and June Lake as a special interest area or for passive recreational and interpretive purpose under the auspices of a National Recreation Area designation. There are no local sawmills or communities that rely on forest timber outputs for economic stability in Mono County." (1638)

RESPONSE: Because of high recreation values in the Mammoth/June area, the red fir stratum has been deleted from timber management for this planning period. Remaining timber west of U.S. 395 will be managed under the uneven-aged system to lessen visual impacts while at the same time providing a flow of timber products to local mills and communities. While there are no communities totally dependent on Inyo timber for economic stability, there are individuals whose livelihood depends on local forest products.

COMMENT: Unconvinced that the Inyo can sustain the timber yields postulated in the Plan. It relies not just on areas that have been logged in the past, but on large acreages of virgin red fir. After 40 years or so of harvesting 25 percent of the available red fir each decade, the loggers will have to return to the Jeffrey pine. At that point, based on the data provided, I doubt it will be possible to continue harvesting 9.8 million board feet annually. Even assuming successful regeneration, which is questionable, the trees don't seem to be there. This looks like forest mining, not sustained yield. (1548) (1577)

RESPONSE: The allowable sale quantity is constrained to not exceed sustained yield or growth. Timber growth in the future will be improved due to better stocking. Unstocked stands will be better stocked and stands will be thinned, yielding additional growth. Red fir will not be harvested during this planning period. At the end of the decade, the timber resource, along with all other resources on the Inyo, will be reevaluated.

COMMENT: Would like a comprehensive analysis of all costs and consequences of even-aged management. Particularly concerned about regeneration. To establish trees in an area that has been clearcut will require, I believe, intensive site preparation, planting, and, in many cases, weed, insect and rodent control. What are the unique conditions of the Eastern Sierra? How do we know? How do costs compare with income from timber sales? Is even-aged management on the Inyo cost-effective, or is it welfare logging? (1548) (979, 1431, 1562, 1585, 1638, 2160)

RESPONSE: Even-aged management is more cost-effective than uneven-aged management because of reduced harvesting, sale administration and access costs and increased growth. The minimum bid rates for the timber to be clearcut must be high enough to finance the costs of reforestation. The Inyo is unique in that our costs of reforestation are among the lowest in the Pacific Southwest Region with high survival and growth rates. Costs of reforestation require vegetation management (site preparation and release), seed collection, nursery and shipping costs, and planting. Insect and rodent control are possible. On the average, timber receipts on the Inyo exceed timber management costs.

COMMENT: The Inyo annual sale program is an important part of the composite timber supply in the western United States. The national demand for timber is projected to increase in the future. If current and future demands are to be met, all National Forests, including the Inyo, must commit now to higher levels of allowable harvest and increase timber management intensities to increased production to start growing tomorrow's wood today. (458) (49)

RESPONSE: The Inyo Forest's timber resource is coordinated with other National Forests in Region 5 and the nation to ensure that local, regional and national demands for timber are met. The Plan provides for a continuing supply of wood products within the long-term sustained yield capabilities of the Forest. The Final Plan's ASQ is based on current demand, but must incorporate other resource needs as well. If economic conditions change, the Plan can be amended.

TIMBER MANAGEMENT

COMMENT: I have a few specific comments of where I disagree with the way the timber base is being reduced and one, in general, is the ski areas. In the Upper Owens River, June Lake Loop, and Mammoth Escarpment, I think there's opportunity for multiple use there. With the proper silvicultural prescriptions, ski areas and timber management could be compatible. (458)

RESPONSE: Timber will be managed west of U.S. 395 under the uneven-aged management system. Timber harvest is permitted under Prescription #14 - Potential Alpine Ski Area. Logging is restricted under Prescription #13 - Alpine Ski Areas, Existing and Under Study, due mainly to meeting VQO requirements in conjunction with the runs.

COMMENT: I am troubled by your Plan to construct (reconstruct) 15 miles of roads for timber, while only planning for 12.5 miles of trails for people. I don't want to see trail construction in wilderness areas, but I also don't want to see roads going in for timber purposes. I could not determine from your Plan if Inyo Forest receives, for each timber sale, enough money to pay for putting the roads in, replanting the logged area completely, and then obliterating the roads. I presume it does not, and until you insist on such a price for your timber, I would advocate no roads for logging purposes. (47) (117)

RESPONSE: No new timber road construction is planned or needed for this planning period. The amount of money received for timber must be at least enough to cover necessary reforestation, road construction and reconstruction.

COMMENT: The Plan makes it unclear what type of timber management would be permitted in Prescription #17 - Limited Access areas. I assume that these areas would have no regulated harvest activity. They shouldn't. (47)

RESPONSE: Areas under Management Prescription #17 - Semi-primitive Dispersed Recreation, are not included in the timber base. High intensity timber management will not be practiced under this prescription.

COMMENT: Management Areas #5 and #7. Strongly encourage decreasing timber harvesting in this area, especially near Research Natural Areas and in viewshed of campgrounds and highway. (129) (129, 2170)

RESPONSE: The Visual Quality Objective for areas adjacent to campgrounds and U.S. 395 is Retention which limits timber harvest to Regulation Class II and III. Indiana Summit and Sentinel Meadow Research Natural Areas do not warrant buffer strips around them because of their large size.

COMMENT: The FORPLAN model used to derive acceptable timber harvest schedules is inaccurate and should not be used as a basis for your decision. Rather a deeper assessment of net annual growth should be undertaken to determine the actual sustainable production level of the Forest. Further, the allowable harvest amount should vary annually depending on the estimated

net growth for the preceding year. The harvest levels should be lowered to no more that 8.8 MMBF until the study is completed and never allowed to exceed a predetermined level, regardless of growth and demand. (1451)

RESPONSE: Yearly sampling is too costly and impractical. The FORPLAN model incorporates current inventory data and is the best tool we have at the present time for calculating ASQ to ensure that harvesting does not exceed growth and that the long-term sustained yield requirement is met.

COMMENT: From a recreational perspective, the blue paint dots on every tree over about a foot and a half in diameter are visually degrading. It seems like every time I go out skiing in any Jeffrey pine forest on the Inyo, I'm surrounded by blue and red paint dots and shocking pink flagging tape. I wouldn't mind it now and then but certainly it seems as though every area with suitable snow for nordic skiing is also a timber sale. (278)

RESPONSE: So that the Forest Service can retain adequate control over logging operations, most cutting prescriptions require each tree to be marked in order to achieve the objectives outlined in the environmental assessment. Nordic skiing is available in many areas outside active and proposed timber sales.

COMMENT: Frequently in the documents you mention that natural reseeding of areas in the past has not often worked because only inferior trees were left as seed trees. The given solution is always to do a regenerative cut. Why can't you plant seedlings in understocked stands instead? (278)

RESPONSE: Seedlings are planted in understocked stands on all timber sales. Lack of summer rains and cyclical seed production are the reasons for lack of natural regeneration.

COMMENT: After examining the report of timber sales for the Inyo for the last several years, it appears red fir may have a negative value on the Inyo. Are red fir values used to compute PNV higher than actual stumpage values? As the timber harvest shifts from mature Jeffrey pine to red fir, aren't sales likely to bring in significantly less dollars? Are timber yield tables realistic, especially the 4th and 5th decade? The DEIS IV-123 indicates all overstory will be removed by the 4th and 5th decade from second growth.

At a minimum, I would like to see the areas in the timber base west of U.S. 395 and north of Glass Mountain removed from the timber base. I think the best use of these trees is for wildlife and recreation. The trees north of Glass Mountain are at the limits of their range in an area of poor and thin volcanic soils, steep slopes, and possible poor reproductive potential. The distance from U.S. 395 makes their stumpage price low because of the long haulage and high snow removal costs. Rather than use these trees for their nominal lumber value, I think they would be better used for wildlife and recreation trees. I propose omitting from the timber base the drainages east of Dexter, Wet, Taylor, McGee and the Sawmill Meadow area. For similar

reasons and their high scenic value, I would suggest omitting the areas north of Reversed Peak and the islands of high level timber management just south of the Mono Basin National Forest Scenic Area in the Mono Craters area just east of U.S. 395. (912, 1577) (1097)

RESPONSE: Only 4% of the Inyo is being managed for timber production. The commercial timber base is dependent upon these factors: site conditions, access, and logging needs. If sales are sold in the areas mentioned, it indicates that loggers can harvest them economically. All sales on the Inyo have been sold. In addition, uneven-aged management will be employed west of U.S. 395 because of the high recreation values in this area. Visual Quality Objectives and Forest-wide Standards and Guidelines must be satisfied on all timber sales. Additional stipulations to protect and enhance all other resources are determined in site specific environmental assessments for individual timber sales conducted by an interdisciplinary team with public input.

COMMENT: Plan IV-99, Timber. What do you mean by "Where practical"? What constitutes "practical"? (1634)

RESPONSE: This sentence has been rewritten to read: "Utilization of existing roads has priority over new road construction to minimize impacts on wildlife."

COMMENT: Plan IV-102. Where is the "unusually pure stand of Jeffrey pine"? (1634)

RESPONSE: The majority of the Jeffrey pine on the Inyo is in pure stands of this species. The word "unusually" has been deleted from the Final Plan.

COMMENT: DEIS II-67, Timber. Why is there no timber stand improvement in the fourth and fifth decades? Will everything have been improved? (1634)

RESPONSE: All the necessary pre-commercial thinning will have been completed and none will be needed during these two decades.

COMMENT: Timber is an inappropriate commodity to harvest from the Inyo and the value of the available timber is minute compared to the natural values of the trees. Recreational demands, wildlife needs, and the need for clear, clean runoff should preclude any timber harvest from the Inyo. (1759)

RESPONSE: The Inyo is a National Forest managed for multiple uses. The timber resource is managed in conjunction with all other resources and has been precluded from management on over 1,800,000 acres (96%) of the Forest because of the overriding values of other resources.

COMMENT: I applaud the Plan's recognition that the timber base may need to be reduced to accommodate other resource values and that openings should be

limited to 20 acres because of the highly valued visual quality of the Forest (DEIS III-94). I then question why openings up to 60 acres would be considered. (1795)

RESPONSE: Large openings would be the result of past logging practices or fires.

COMMENT: Timber activities should be restricted to salvage, firewood sales and hazard tree removal in recreational areas. Is the Forest Service predicting future yield using assumptions such as allowable cut effect, superior genetic stock, use of extensive and intensive silvicultural practices? These assumptions have neither born the test of time and/or will prove to be economically unfeasible by not being cost-effective or due to the lack of appropriated funds. The Forest Service has little experience with red fir, none of it good. Satellite photos taken up and down the Sierra will show for decades the mistakes made during the harvest in the 1970's. (1862)

RESPONSE: Timber activities are limited in recreation areas to enhance recreation quality. Refer to Management Prescriptions #12 - Concentrated Recreation Area; #13 - Alpine Ski Areas, Existing and Under Study; #15 - Developed Recreation Site; #16 - Dispersed Recreation and #17 - Semi-primitive Dispersed Recreation.

Predicted future yields are based on proven data derived from similar timber sites in California employing current improved management procedures. These would include more appropriate growing stock and improved site preparation and planting techniques. Treatments must be cost-effective and are paid out of timber receipts.

COMMENT: I have yet to see conflicts with recreation and timber management. Recreation is a major resource on the Inyo. The selection mark policies and logging over snow have little visual effects and have enhanced opportunities in the case of nordic skiing. (1869)

RESPONSE: The Management Prescriptions in recreation areas provide for limited timber harvest to enhance the recreation experience.

COMMENT: The overall rate of timber harvest should be clearly well below the growth of new forest each year. (1927)

RESPONSE: The Allowable Sale Quantity (7.2 MMBF) is based on the projected growth of the suitable timber base and is substantially below the long-term sustained yield capability of the Forest (26.6 MMBF).

COMMENT: Very long hauls to mills make it even more unprofitable. (1977)

RESPONSE: The appraised rates which dictate the lowest acceptable bid for National Forest timber have all costs from stump to mill deducted. This includes the cost of hauling the timber from the timber sale to the mill.

Loggers factor in their haul costs when they calculate whether a sale is economical for them to bid on. All sales put up on the Inyo have sold.

COMMENT: California's harvesting of timberlands have provided us with many recreational opportunities such as campgrounds and wildlife habitats. With the management of the Forest and the replanting of trees, there is now more timberlands in growth than there was 100 years ago. The wood industry provides over 100,000 jobs that are directly related to the wood product industry. (2125)

RESPONSE: Timber receipts pay for wildlife habitat improvement. Timber management increases timber stocking and growth. Timber-related jobs were taken into account in the economic analysis.

COMMENT: The timber industry has done a lot of good for the forest land, complementing and enhancing by planting of trees, not to mention the money that the counties receive. This goes to help our schools and maintain the county roads. The many jobs provided by the timber industry rank it as one of the top agricultural producers in California. (2126)

RESPONSE: Timber receipts pay for the majority of the reforestation and timber stand improvement on the Inyo. The twenty-five percent of timber receipts returned to the counties for schools and roads is included in the economic analysis in Chapter II of the EIS.

COMMENT: Lumber is abundant and momentarily down. (2126)

RESPONSE: The value of lumber is dependent upon its supply and demand which fluctuates daily.

COMMENT: It bothers me that you are proposing a nordic ski area in the Deadman Creek area which, for all practical purposes, will prohibit logging there. This area is some of the best timberland on your Forest, and I feel it should be managed for its timber production. (2184)

RESPONSE: With the employment of uneven-aged management west of U.S. 395, Prescription #16 will have no additional impacts on timber management. The largest timber impact is the exclusion of the red fir stratum from timber management. Prescription #16 has been retitled and rewritten. It is titled "Dispersed Recreation" and no highly developed nordic facility is proposed for the area.

COMMENT: Many people are too naive to realize that logging is a valuable form of industry. They see an area just logged and react by trying to stop it. They never look at an area logged 5 or 10 years ago. If they did, they would see that trees are a renewable resource. Special interest groups from the cities are putting a lot of pressure on you to stop logging, completely. I sincerely hope you don't cave in to the pressure. (2212)

RESPONSE: The ASQ has been reduced because of overriding recreation values in the Mammoth/June area. The Inyo, as a National Forest, manages all resources and the Plan is designed to provide both market and non-market benefits. A consistent supply of wood products is scheduled to meet local demand for timber.

COMMENT: Past harvests have been shown to be economically marginal at best. (140)

RESPONSE: The economic analysis in Chapter II of the EIS was based on 1982 data and shows that timber harvesting on the Inyo is economically sound.

COMMENT: There are major shortcomings in the Affected Environment discussion (DEIS 90-98) which make it extremely difficult for the public to judge whether the size of the timber base identified is appropriate and/or whether lands are capable of producing timber at a sustained yield at the volume chosen in the Preferred Alternative. For example, there are no yield tables which would spell out the volume of timber regenerating lands are expected to produce; nowhere is % volume of the Forest inventory given in relation to status, that is % mature, % in over-mature, % in second growth, or % Forest understocked; nowhere is % of acreage with respect to years from rotation (harvestable) given; nowhere are stocking standards per site class or thinning specifications given; and cubic volume and board feet are used interchangably (with a conversion factor of 6.5) without regard to the discrepancy between amount of board feet obtainable from old growth (more) vs. second growth (less). (2170) (1577)

RESPONSE: The above inventory material is available at the Supervisor's Office in Bishop, California. Including this material in the EIS would make it too ponderous and expensive to print. Washington Office direction is to use cubic foot as the standard volume measure. The relationship between diameters and cubic foot volume is built into the yield tables in the FORPLAN model.

COMMENT: On DEIS III-93, the Forest Service misleadingly points out that many existing stands of pine on the Forest are "mature to overmature". While this may be true of the poorly stocked moderately sized (L3P) lodgepole pine (Figure III-23) included in the timber base (which has no commercial value, only fuelwood value), only 10,058 acres of Jeffrey pine out of 70,488 acres in the timber base have a large crown diameter (P4P, P4S). This is only 14% of the timber base left in the old growth Jeffrey pine and is poor to sparsely stocked, mostly already entered stands. The remaining Jeffrey pine in the timber base of 37,042 acres are of small diameter in the poor to sparsely stocked stands (52.6%); 23,368 acres are in well-stocked stands (33%) and half of these have some larger overstory. Overall, it would appear...that about 67% of the Jeffrey pine forest is understocked, 75% including the lodgepole forest in the timber base. All these numbers come from DEIS III-95. (2170) (1577)

RESPONSE: Crown diameter and crown closure described in the strata description on Page III-95 of the DEIS do not necessarily equate to age and stocking. This is an easy way of classifying strata from aerial photos, but it cannot inventory age classes. That is done by silviculturists during field review. Within the strata are many individual stands varying in age, stocking and vigor. The strata descriptions are measures of crown closure only and do not mean that a stand is well or poorly stocked. This has been clarified in the Final EIS.

COMMENT: Even if the younger age classes of Jeffrey pine now regenerating with sufficient stocking were accruing volume at the most optimistic rates, with half again as much volume contributed from the acreage of small diameter poor to sparsely stocked Jeffrey pine stands, all this acreage may still fall far short of producing the projected volume of 9.8 million board feet. Much of this volume may have to be harvested before achieving the required 95% culmination of mean annual increment. Instead, the model predicts (DEIS II-177) that only 6,000 acres would be harvested by clearcut in the fifth decade with heavy thinning on 16,800 acres. This is how the model gets around the harvest at the 95% CMAI requirement by switching to a massive thinning program. Note how the projection of the current program would require at least 29,000 acres of thinning in the fifth decade. This is forest mining, not forestry! In addition to the above problems, the timber program as proposed assumes the success of regeneration by clearcutting and intensive site preparation and planting. It is already known that the volume desired has not been produced by natural regeneration. Data on regeneration success of intensive timber management on this forest is gathered from only a few rather recently planted plantations. Potential problems of intensive management on the massive scale proposed are not discussed in the DEIS. Some of these problems include losses due to the poor moisture-holding capacity of the soils, losses to lethal soil temperatures, increases in insect infestations and predation by mammals, soil erosion and nutrient loss, and competition with grasses in wet years. All of these problems will make the cost of regeneration much higher and potentially not cost efficient. In addition, costs of reforestation are not broken down. For example, additional costs of replanting failed sites, shade cards vexar protection, gopher baiting, mechanical or hand scalping, and herbicide release are not balanced in the DEIS with the value of the timber. (2170) (1097, 1577)

RESPONSE: Table 8 in EIS Appendix B lists the rotation age of thinned and unthinned stands. The glossary defines rotation age (at least 95 percent culmination of mean annual increment) to be the length of time between the formation or regeneration of a tree stand and its <u>FINAL</u> cutting. Table 8 shows the rotation age for Jeffrey pine to be 70 years for an unthinned stand and 80 years for a thinned stand. Commercial thinning is a valid and successful silvicultural tool to increase growth and vigor of a timber stand which increases its rotation age. It is not forest mining which is removal of timber resulting in little to no chance of regeneration or reduced growth. The rotation age for Jeffrey pine has been increased to 140 years (with thinning) in the Final Plan, not because it is more appropriate silviculturally, but because the public would prefer to have stands of larger trees in the commercial timber base.

The Inyo has a good track record during the past 5 years of successful Jeffrey pine, lodgepole pine and red fir plantations. The economic analysis includes all the costs of intensive timber regeneration such as shade cards, vexar tubes, etc. The above costs will be paid out of timber receipts.

COMMENT: A Forest for wildlife and recreation or a Forest for industry? Also, what about the adverse effects of widespread use of strychnine bait on wildlife, the hazards of herbicide spraying and the damage to the long-term fertility of forest soils from disturbance and compaction by tractor site preparation and release? If the Forest Service takes such care to tractor log in the winter to avoid soil disturbance, what about the thousands of acres of soil disturbance that will result from site preparation for planting? How will clearing for planting affect wildlife forage such as bitterbrush? See the timber section of the Affected Environment (DEIS III-90-98) as well as the Consequences discussion (DEIS IV-4, Economics; DEIS IV-26, Soils; DEIS IV-163, Wildlife), and the emphasis in the Irretrievable Commitments section (DEIS IV-179). The balance of this industrialization of forest ecosystems has not been accurately weighed against the higher long-term scenic and recreational values of these areas. These impacts must be reevaluated in DEIS IV-91 and DEIS IV-127. Even the California Board of Forestry comments on these documents recognizes the limitations of Jeffrey pine regeneration in this forest and proposes all-age management. The obvious conclusion is that Prescription #10 - High Level Timber Management has no place in this Forest Plan. Unless substantial modifications of the above cited sections of the DEIS and Plan are made as suggested, these documents are in clear violation of numerous sections and regulations under NFMA and the Multiple Use Sustained Yield Act, notably those that address the timber, soils, and wildlife resources as well as diversity and recreation. (2170)

RESPONSE: Adverse effects of tractor site preparation to soils were described on page IV-140 of the DEIS. Effects are mitigated under the watershed section of Standards and Guidelines of the Plan. Effects of timber management on wildlife habitat, economics and recreation are also described in their respective sections in the Environmental Consequences section of the EIS and mitigated in the Plan under Standards and Guidelines, Management Prescriptions and Management Area Direction.

COMMENT: Preferred Alternative, Timber (DEIS II-61). Modify to include no timber output management for existing or potential concentrated recreation areas, wild and scenic river areas (within 1/4 mile of banks), developed or prospective downhill ski areas, lands suitable for primitive or semi-primitive recreation and deer migration routes and other critical wildlife habitat. Develop a Forest-wide policy for personal and commercial Christmas tree cutting to reduce resource damage and theft. (2170)

RESPONSE: Prescription #12 - Concentrated Recreation Area requires that timber management must maintain or enhance recreation and other resource values. Prescription #13 - Alpine Ski Areas, Existing or Under Study requires that timber stands be maintained only for their health and vigor. Prescription #14 - Potential Alpine Ski Area requires maintenance of the

stands to meet recreation and other resource needs in base facility and lift areas, reduced clearcuts, and other silvicultural treatments to benefit recreation and other resource needs.

The entire area west of U.S. 395 will have reduced timber management which will benefit primitive or semi-primitive recreation. Prescription #17 - Semi-primitive Recreation specifies that timber be managed to not impair recreation, wildlife and watershed resource values. The Forest-wide Standards and Guidelines have adequate requirements that timber must meet to protect and enhance deer migration corridors and other critical wildlife habitats. The present Forest Christmas tree policy allows only for closely supervised commercial Christmas tree sales. The public is not allowed to cut their own trees.

COMMENT: Forest-wide Standards and Guidelines, Timber. Modify #7 to include "Prohibit timber harvest in a 100-foot wide buffer strip along each side of watercourses.". Due to the scarcity and importance of riparian areas in the forest, no timber should be harvested in these areas. Delete from #9: "taking effects on ORV opportunities into account when doing so". Despite CORVA's claim that ORVers are an "endangered species", it's obvious that wildlife habitat protection is of greater importance than ORV opportunities. Prohibit logging equipment in riparian areas and wet meadows. (2170) (2190)

RESPONSE: The term riparian area is defined as 100 feet on each side of perennial or intermittent stream channels. The Plan prescribes harvesting timber in accordance with Regulation Class III. This prescription allows removal of only single trees or small groups of trees. This is to maintain the health and vigor of the trees while protecting the water quality, soils and vegetation in these very sensitive areas. Standards and Guidelines under riparian areas and watershed adequately protect meadows. Protection of wildlife habitat takes precedence over OHV use of roads.

COMMENT: Since the Inyo Forest is admittedly unable to meet national timber targets, it is shortsighted to propose continued high volume cutting of trees. Figures and tables included in the Plan and DEIS are misleading and confusing. In reality, the Forest had been vastly overcut considering the slow natural regeneration rate, spotty seedling survival, and lengthy rotation rate. There is no economic justification for the projected sale of red fir over the next five decades considering its "negative value" as lumber. Red fir has greater value as an uncommon Eastern Sierra climax-stage forest with outstanding scenic qualities. It is also not renewable in a practical sense because it has taken up to 600 years to develop the present stand with its complex biological diversity. It has possibly been in existence only since the last volcanic event in the Mammoth area. Considering the quality of red fir constitutes only 13% of the total Inyo NF land base, it should be managed as a unique ecosystem providing critical habitat for numerous old growth dependent species such as goshawks, spotted owls and 3-toed woodpeckers. The Forest needs to develop a list of indicator species for old growth; sensible planning cannot proceed without that knowledge. (2210)

RESPONSE: This Forest harvesting substantially less than projected growth. Conifer seedling survival is high. No timber management will occur in the red fir strata this decade. The Plan's old-growth component has been reviewed and recommended by professional wildlife biologists. Goshawks are the old-growth indicator species on the Inyo. There are no known spotted owls on the Forest.

COMMENT: Prescription #10 - High Level Timber Management. We do not concur that this is the best prescription for the several hundred acres so designated north of Reversed Peak and south of the Aeolian Butte, Mono Craters and surrounding Devil's Punchbowl. Given the high scenic, geologic, wildlife and recreational values on these areas, we recommend a "limited access" designation, with emphasis on wildlife and dispersed recreation. Groomed trail and dispersed nordic skiing are especially popular at the south end of the Craters; intensive timber management is not compatible with this activity. (1617)

RESPONSE: Uneven-aged timber management will be employed west of U.S. 395. The above mentioned areas are roaded and do not qualify for Prescription #17. In the Final Plan, timber management to the west of U.S. 395 has been limited to uneven-aged management due to the high recreation values. Mitigating measures for recreation values will be dealt with east of U.S. 395 in the site specific environmental analyses for the individual timber sales.

COMMENT: Visual resources (DEIS II-61). Change wording to read "timber management must meet or exceed the visual quality objectives of retention in potential concentrated and dispersed recreation areas; timber management openings should be limited to 5 acres or less." (1617)

RESPONSE: The Standards and Guidelines in the DEIS were developed by landscape architects and recreation specialists. Potential dispersed recreation areas include the entire Forest. Openings of 20 acres or less can be implemented only when the VQOs can be met. Openings west of U.S. 395 will be limited to 5 acres.

COMMENT: The proposed nordic ski area occupies the most productive timberland on the Forest yet timber management will be virtually excluded here. The Prescription should be modified to accommodate dual timber and recreational use of this area. (2048) (1013, 2171)

RESPONSE: Prescription #16 has been changed to "Dispersed Recreation" and timber will be managed under the uneven-aged system. The intent is to manage the area for both timber and recreation.

COMMENT: We feel that the additional 2,389 acres along Level I roads and trails should be managed with a timber emphasis. (2179)

RESPONSE: Visual strips will continue to be managed under the present VQOs due to their scenic values.

TIMBER MANAGEMENT

COMMENT: We believe that management for recreation potential need not be an either/or situation, and that timber management can, in many instances, be used to enhance the recreation resources. (2179)

RESPONSE: Management Prescriptions #12 - Concentrated Recreation area; #14 - Potential Alpine Ski Area; #15 - Developed Recreation Site and #16 - Dispersed Recreation all provide for timber management practices.

COMMENT: The Plan does not address the impact timber management has upon OSV recreation. On the Preferred Management Prescription Map, OSV recreation or snowplay activity areas are not recognized as are nordic and alpine skiing recreation. Smokey Bear Flats is listed as timber management whereas our 5-year commercial snowmobile operation at Smokey Bear Flats is not noted at all. Request that the map reflect OSV recreation. Request a formal agreement for multiple-use be prepared for each permittee and that plowed roads for logging activities be either restricted to certain non-peak snow months or carefully mitigated with current users. (1104)

RESPONSE: Refer to the Forest-wide Standards and Guidelines for timber. There is one that specifically requires timber sale contracts to make provision for access across timber haul roads for officially designated nordic and snowmobile trails. Site specific environmental analyses will evaluate conflicts with OSV recreation for individual timber sales. The public has an opportunity to participate in these analyses.

COMMENT: Lands with steepness over 30% and less than 60% were withdrawn which involved nearly 21,000 acres. These lands were withdrawn because of potential erosion and the expense of harvest. Computer runs on the 30%-60% category showed deficit sales regardless of the species logged. However, we noted that the 30%-60% category was probably too broad to analyze logging costs. Very possibly some lands, especially in Jeffrey pine in the lower ranges of this slope category, could be logged economically and safely from an environmental standpoint. An analysis should be run on the lower categories, especially from 30%-45%. Much of the timberland in the Inyo was said to occur on moderate slopes, so it is possible that a significant percentage of the 21,000 acres in the 30%-60% category would occur in the reaches below 45%. (49) (181)

RESPONSE: In the Final Plan, 14,154 acres of land on slopes above 30% have been included as a separate component of the suitable land base. It is not included in the harvest program for the first decade, but could be incorporated if economic conditions change and it becomes economical to log on these slopes.

COMMENT: Land in the Monache Meadows area was withdrawn and amounted to 4,500 acres. We discovered that this area was being proposed for limited vehicular access by four-wheel drivers, horses, and hikers. The reason for this proposal was due to a decision made by the Regional Forester after proposals were made years ago to use the area for geothermal development. A coalition of various users of the Monache area and Tulare County Supervisors

opposed entry by the geothermal developers. However, we felt that use of the area for timber harvest was quite another matter. Entry roads for timber harvest could be blocked off after use and other roads put to bed. The result is that 1 to 1.5 MMBF per year could be added to the allowable harvest on the Forest by using the Monache area as well as providing protection and management of the biological base in this timberland area. (49) (201, 2179)

RESPONSE: The area has been excluded from timber harvesting by the Regional Forester because of its unique qualities.

COMMENT: Lands for developed recreation and potential ski areas were withdrawn and amounted to 4,000 acres. We found that the Inyo was missing an opportunity to use these lands for sustained yield timber harvest through uneven-aged management techniques. Further, these areas were especially valuable in demonstrating timber harvest techniques and use of the forest resources to the millions of visitors who use campgrounds and ski areas on the Inyo. (49)

RESPONSE: Potential ski areas will be managed under uneven-aged management. The visual value of the trees in developed recreation areas is of more value than their value as timber.

COMMENT: The cost-effective requirements for high level timber management should also apply to moderate or modified timber management. (See DEIS II-61). (2190) (1433, 1638)

RESPONSE: The objective of uneven-aged timber management is to enhance or complement other resources such as recreation. Because the objective is not economic returns, cost effectiveness is not a requirement.

COMMENT: Management Area #7 - Upper Owens River. Please change the high level timber management designation on both sides of U.S. 395 to modified timber management. Also change the high level timber management designation near the White Wing Work Center to a nordic ski area designation. (1638)

RESPONSE: High Level Timber Management - Prescription #10 on the west side of U.S. 395 has been changed to Prescription #9, Uneven-aged Timber Management. Prescription #16 has been changed to "Dispersed Recreation" to provide a broader range of recreation opportunities.

COMMENT: Many Eastern Sierra ecosystems are unique compared with west side ecosystems due to a radically different climatic regime. Some of the forests may themselves be relics from previously wetter periods. Also, the forests themselves may serve importantly in regulating local climatic conditions. This ecosystem should be mentioned on DEIS S-19, and discussed on DEIS III-21-22. The Jeffrey pine stand is equally unique as the largest contiguous stand of pure Jeffrey pine in the world. (1097)

TIMBER MANAGEMENT

RESPONSE: The word contiguous has been inserted in the FEIS summary to read: "The Inyo has the largest contiguous Jeffrey pine forest in the world."

The conifer growth projections for this Plan are based on lower site classes reflecting the east side ecosystems. Forest modifications prescribed in this plan should not be to the extent to modify weather patterns.

COMMENT: Measures should be taken in the Forest Plan to conserve the red fir in Management Area #8 and the Jeffrey pine in Management Area #7 as functional large scale ecosystems. The Preferred Alternative would not do so in that the old growth red fir forest referred to would be substantially cut in 3 decades and no old growth will remain in the Jeffrey pine stand in question after 3 decades (DEIS IV-123). (1097) (117, 1577, 1664)

RESPONSE: The red fir stratum will not be managed this decade for timber. An area equal to at least ten percent of the Jeffrey pine stratum in the suitable timber base will be managed for old growth.

COMMENT: There is an enormous recreational/visual value of natural old growth stands that is lacking in plantations. (1097)

RESPONSE: The intention is to maximize tree growth in plantations. The size and shape of plantations are designed to meet visual quality objectives.

COMMENT: General impression on timber management from the Plan is that the Jeffrey pine has been mismanaged in the past such that the rate of cut has been in excess of sustained yield; the remedy to that is to cut an ecologically very precious, but economically negative valued, red fir forest; and values related to timber entered into the linear programming computer analysis were generated to make this possible rather than being accurate values. If this is true, there is an obvious need to make a complete reevaluation of timber from an objective standpoint. (1097)

RESPONSE: The cut has not been in excess of sustained yield of the timber base. Red fir stratum will not be entered during this planning period, so no red fir data was incorporated in the final FORPLAN runs.

COMMENT: Restricting the flow of timber from the National Forests will have a negative effect on the social and economic stability of rural communities and the nation in general. (1791)

RESPONSE: The local economic effects of various timber flows from the Inyo are reflected in the economic analyses.

COMMENT: Inyo timber is in very high demand. All timber offered for sale in the last decade has sold, and recently, bid prices for timber have been three to four times greater than advertised rates. (1791)

RESPONSE: The EIS and Plan have been changed to reflect this.

COMMENT: Opposed to any timber sales subsidies. (2154)

RESPONSE: The Forest Service does not subsidize timber sales. Most of the Inyo timber sales are sold at prices much higher than the appraised rates.

COMMENT: Intensive management of timber production should not be a goal on the Inyo which is marginal in terms of timber production, both biologically and economically. According to the DEIS S-16, "...timber benefits...at most provide less than three percent of the total forest PNV". Due to the "...low relative value of timber on the Inyo National Forest...", the high costs associated with management of tree plantations, from suppression of competing vegetation to pest management to intensive fire suppression, cannot be justified even economically. It is not clear why the adoption of clearcutting, or other even-aged stand production measures is even being advocated. (1631)

RESPONSE: The Inyo sells timber averaging $1,000,000 per year at an annual cost to the Government of $800,000. The "relative value" is comparing FORPLAN recreation and timber values. Recreation values in FORPLAN are willingness-to-pay values; timber values are market values. The section has been rewritten for clarification.

The ASQ has been reduced because of high recreation values in specific areas. Timber management in the portion of the Forest still under high timber management will be managed under even-aged management due to the fact that this management regime is the most economical and produces maximum yields on the Inyo.

COMMENT: FORPLAN data on rate of regrowth relies on studies on Pacific Northwest Forests under dissimilar climatological circumstances. Natural regeneration on the Inyo is limited by the climate (DEIS IV-120) which is not amenable to management. Where has it been shown that the shift to even-aged stands will produce better results than the clearcut plot east of U.S. 395 on the west-facing slope overlooking Smokey Bear Flat? The growth rate is slow, the small Jeffrey pine trees seem to be in poor condition, and the whole area appears to be struggling biologically. About three miles due north of Big Springs is another clearcut area where the trees are even smaller. (1631)

RESPONSE: The yield tables used in FORPLAN were based on California stands with similar macro-climates. There are many examples of successful plantations on the Inyo.

COMMENT: Flying over the Sierra recently, one of us noticed many unsuccessfully regenerated patches of logged-over forest on the west side. We would also draw attention to the area east of Mono Craters, where logging from Mono Mills first occurred about 100 years ago. Natural regrowth has produced an understocked condition even after so long. Overestimating the

regenerative capacity of the Inyo could lead to a depleted forest for future generations. (1631)

RESPONSE: Most of the logged-over portion of Mono Mills is overstocked. These stands have not been managed and were not planted.

COMMENT: Past management procedures on the Inyo have produced numerous examples of monoculture "matchstick forests" where small seedlings were apparently "released" by the removal of larger overstory trees, leading to the production of overcrowded, unhealthy stands. Thinning of some of these in recent years through fuelwood harvesting has improved the situation somewhat. In an attempt to increase the density of the stands, past management has sacrificed diversity and quality. "An increased emphasis on regeneration harvest in suitable timber would result in timber plantations requiring intensive and well planned fire protection" (DEIS IV-70). This replacement of the natural functioning of ecosystems with artificial management is expensive and of questionable wisdom. The management of the forest should allow the natural ecosystem functions to operate as much as possible. To do otherwise is to court failure. The most important disease organism, annosus root disease, has in fact been encouraged by over-management of fire (excessive suppression) in Yosemite. (1631)

RESPONSE: The majority of the Inyo is composed of single species timber stands. Fomes annosus is taken into account in the Inyo yield tables.

COMMENT: Agree that any timber harvest on the Forest must meet the standard on non-declining yield, but are concerned that the actual cutting rate is exceeding that standard. Figure C-7 on Plan C-11 lists the rotation age for Jeffrey pine as being 75 years. Assuming that means a site is able to be harvested every 75 years, our personal experience indicates that the Jeffrey pine are being harvested much faster than that. We have 29 Pandora Moth study sites throughout the Jeffrey pine forest between Mammoth Lakes and June Lakes, both east and west of U.S. 395, mostly in Management Area #7. These sites were chosen in 1980 without regard to timber sale area boundaries or any other aspect of timber management. Between 1980 and 1986, inclusive, 7 of the 29 sites have been seriously altered by removal of the large trees (selective harvest). One site, which was a fuelwood gathering site in 1980 after commercial removal of the largest trees, was marked as a timber sale area again in 1986. This rate, 20-25% harvest within seven years, equates to a rotation rate of between 28-35 years. This will not produce a sustained yield. Even the selection of 75 years as a rotation age for Jeffrey pine is questionable. Where are the studies that indicate the regrowth potential on different soils/areas on the Inyo? Our own tree-ring analysis of trees thinned by Forest Service personnel and made available to the public for fuelwood harvest do not support that trees of 14-16" diameter will be produced in 75 years. In our study, the 9-12" diameter sections taken at 4 1/2 feet above ground show an approximate age of 75 years. (1631)

RESPONSE: Rotation age is the maximum age at which the tree is harvested. It is not the time between entries as suggested. Projected growth is for intensely managed stands. The rotation age for Jeffrey pine has been

extended to 140 years. Entries into stands are not made just to produce volume; they are done to salvage mortality, improve the health and vigor of the stands by removing diseased trees, release competition and for many other silvicultural reasons. Each sale is site specific. Depending on species composition, stands entered every 20 years produce healthier, more vigorous trees with increased growth.

COMMENT: If the Forest Service takes such care to tractor log in the winter on snow to avoid soil and archaeological disturbance, what about the thousands of acres of disturbance that will result from site preparation for planting? How will clearing for planting affect wildlife forage such as bitterbrush? What about the dramatic decline in visual quality and diminishment of recreational experience in these Forest plantations? Intensive timber management and recreational development are expected to co-exist in Upper Deadman and Dry Creek areas. The DEIS fails to adequately discuss the above concerns and impacts in the Affected Environment for timber (III 90-98) as well as in the Environmental Consequences Common to all Alternatives (Pest Management IV-66, Recreation IV-90, Timber IV-119, Visual Quality IV-135, Soils IV-144, Sensitive Plants IV-114, Wildlife IV-163, Cultural Resources IV-20, Mule Deer IV-168 and Irretrievable Commitments IV-179). (1577)

RESPONSE: Timber west of U.S. 395 has been removed from the high level timber management prescription to reduce impacts on recreation users in the area. Plantations will be located east of U.S. 395 where there is not heavy recreation use. All timber sales are evaluated in site specific project analyses by an interdisciplinary team composed of all relevant resource specialists. They consider sale layout, harvest methods, necessary mitigating measures, site preparation methods and regeneration requirements that will protect and/or enhance other resources including visual, wildlife, recreation, soil and water. Integrated pest management is also analyzed for each timber sale on a site-specific basis. The preferred treatment must meet the requirements set forth in the Forest-wide Standards and Guidelines and Management Prescriptions. Tractor site preparation can be prescribed to protect soils and reduce impacts on other resources.

COMMENT: There are serious questions concerning the Forest Service economic analysis of timber values on this Forest. I request a reevaluation of these figures in FORPLAN and the Benchmark analysis as well as the consequences of the DEIS on economics IV-4, with a complete itemization of the values chosen and how they were determined. For example, wildlife values were based almost entirely on deer hunting user days. Redo, assigning values to wildlife diversity and evaluating losses due to liquidation of old-growth. (1577)

RESPONSE: Economics is only one of the criteria used in deciding the Preferred Alternative. Price trends used were those most current and relevant to the Inyo; the 4% discount rate is the standard <u>real</u> rate which does not include inflation or risk which is something that industry must consider. All data is available for public review at the Supervisor's Office.

TIMBER MANAGEMENT

COMMENT: The statement "meet the long-term sustained yield requirements of wood products by the end of the planning horizon (50 years)" indicates that it will take at least 50 years to recover from "departure" from sustained yield requirements. The mandate is to meet sustained yield requirements in the present and to insure that standards are to be met in perpetuity. (NFMA 219.2, 219.16, NFMA Sec. 11, Sec. 6). The DEIS fails to identify this deficiency and the Plan must remedy it. (1577) (89)

RESPONSE: There has been no departure on the Inyo. The Inyo has been managed below the long-term sustained yield capacity of the Forest, which is 26.6 MMBF, with no deficiency. The statement is misleading and has been deleted. It was intended to mean an appropriate mix of wood products and did not relate to volume.

COMMENT: Timber areas where critical wildlife habitat exists need a modified harvest program. All of these areas need to be identified for future planning efforts. (DEIS II-130) (2190)

RESPONSE: DEIS II-130 describes the AMB alternative, not the Preferred Alternative.

COMMENT: Gene Liken's and F. Herbert Bormann's comparative studies of an intact versus clearcut coniferous watershed have demonstrated the large losses of nutrient from an ecosystem after clearcutting. This nutrient loss damages the capability of the ecosystem to support regrowth. The effect on water quality not only of visible sediment but of dissolved nutrients must be considered. Euthophication of downstream riparian areas and effects on downstream fisheries are not discussed in the DEIS which consistently maintains that sediment is the only water quality issue of the Forest (DEIS III-109, III-111). (1631)

RESPONSE: The interdisciplinary team evaluation of specific projects and Forest-wide Standards and Guidelines for riparian areas and water should adequately protect water quality.

COMMENT: The Jeffrey pine stand in Management Area #7 is equally unique. It is the largest contiguous stand of pure Jeffrey pine in the world (DEIS S-19). This Jeffrey stand should be discussed in the DEIS under "diversity" and "timber" (III-21 and III-90-98, respectively). (2170)

RESPONSE: This section discusses Issues, Concerns and Opportunities. Discussion of the stands does not belong here.

COMMENT: It is my hope that our National Forests provide multiple use and sustained yield far into the future with a stronger emphasis on non-timber uses. (180)

RESPONSE: The National Forests are managed under the Multiple Use-Sustained Yield Act of 1960 with regard for all resources. As each Forest is unique,

with different resources, users and demands placed on it, each has a different management plan that is designed to accommodate its users while protecting and utilizing its resources. There is more emphasis being placed on non-timber resources because of the public's concerns and comments during this planning process.

COMMENT: You state: "Since all the timber offered for sale on the Forest has been sold, it can be assumed that supply has not exceeded demand". You fail to mention the current glut on the timber market. (1634)

RESPONSE: Timber demand fluctuates and varies with location. Timber from the Inyo is currently in demand resulting in high prices received by the Government.

COMMENT: Recent studies by Dr. Michael Barbour in the Department of Botany at the University of California, Davis show that red fir forests were established in California under a moister regime than exists today. They can regenerate under their own shade but if you log them it is unlikely they will be able to reestablish. (71)

RESPONSE: Red fir appears to artificially regenerate better with small clearcuts or shelterwood cuts.

COMMENT: Sanitation removal by small loggers is the only way to harvest timber on the Inyo Forest. (1516)

RESPONSE: The Preferred Alternative has been modified to reduce production logging west of U.S. 395. It will be managed under the uneven-aged regime with openings less than 5 acres.

COMMENT: Regarding your statement "Regeneration successes have improved", how can you call 32% and 48% success rates on two plantations successful? If 680 red fir seedlings/acre equals 100% success, then, according to my simple calculations, a 32% success rate implies 217.6 trees/acre. The MMR for red fir (in order to consider an area regenerable within five years of harvest) is 200 trees/acre, or 29.4%. I would call these plantations marginally successful. Apparently, the Forest is now having problems with gophers in the red fir plantations. How will this affect success rates? (1634)

RESPONSE: The trees/acre necessary to declare a stand regenerated is site specific; it varies. Gophers can destroy a plantation if not controlled. Red fir will not be harvested or planted during this planning period.

COMMENT: Regeneration cutting in red fir should proceed at a slow rate until regeneration methods are proven successful on the Inyo. Regeneration of red fir is still in an experimental stage. Data from other Forests such as the Shasta-Trinity cannot be applied to the unique set of climatic conditions that exist in the Eastern Sierra. (1634)

RESPONSE: The red fir stratum will not be logged during this planning period, so artificial regeneration of this species will not be studied during this planning period. The studies used for comparison with Inyo National Forest resources are from other Forests with similar xeric conditions. Artificial regeneration on the Inyo Forest has been successful in the past.

COMMENT: If you harvest 25% of red fir per decade, then in 40 years there will be no more old growth red fir. How is this in keeping with the Forest-wide Standards and Guidelines for diversity? Will the 5.4 of older serial stages all come from existing wilderness? (1634) (59, 1522, 1532, 1630, 1649, 1650, 2179)

RESPONSE: The description of old growth on the Forest was misleading in the Draft. It has been rewritten. See Chapter IV, Wildlife, in the FEIS. Wildlife biologists estimated that 10% of the commercial timber base (lands capable of growing commercial quantities of timber) was needed to meet old growth habitat diversity requirements. This base is 173,207 acres. Of this, only 110,701 acres was actually going to be managed for timber production; the suitable timber base has been reduced to 75,233 acres in the Plan. The remainder would be in the unsuitable base for various reasons such as visual concerns or slopes. After evaluating the spatial location of these areas on the Forest, it was determined that approximately 4.6% would need to come from the unsuitable base and 5.4% from the suitable base. This approximately 18,000 acres would be managed on a rotation of 300 years. In addition to the remainder of the unsuitable base which would not be harvested, 62,506 acres of timber lands have been withdrawn because of wilderness and RNA designations. So, of the total timber base on the Forest, 46% or 80,000 acres would be old growth (Chapter III, FEIS). No red fir will be harvested during this planning period.

COMMENT: The red fir forest along the Mammoth earthquake road was selectively cut, yet a high percentage of logs were unuseable and left to rot. Sampling to determine the extent of heartwood fungus and other problems might have determined the potential for non-economic timber harvest from this area, and should be incorporated into any timber management. Had these trees been left standing, they would have reduced the present visual impact near the roadway. We are aware that the timber sale area was established before the road was built. (1631)

RESPONSE: The current policy is to leave obvious culls standing for wildlife. The utilization specifications allowed less cull when the above area was logged than is presently allowed.

COMMENT: We support the Preferred Alternative in the proposed management and harvest of red fir areas on the Inyo. These areas contain overmature and mistletoe infested timber and, in order to protect the biological base, planned entry should be made over the next decade into these stands. Reforestation in the red fir type has not been shown to be a problem on the Inyo in the past using even-aged techniques, but uneven-aged management in

red fir should also be practiced in areas such as those designated visual, developed recreation and potential and existing ski areas.
With limited successes in regeneration, it needs to be shown that timber harvest schedules are flexible enough to reduce the cut significantly if regeneration efforts do not assure compliance with diversity guidelines. (49) (181)

RESPONSE: The red fir strata will not be entered during this planning period due to the high recreation values in the Mammoth/June area. Mixed stands including some red fir on the west side of U.S. 395 will be managed under the uneven-aged management regime. The Plan will be amended if necessary to comply with diversity guidelines.

COMMENT: The Inyo's red fir ecosystems should be mentioned on DEIS S-19 and discussed on DEIS III-21,22. (2170)

RESPONSE: This ecosystem is not that unique in California.

COMMENT: Contrary to recent criticism, current demand and lumber markets make the economics of harvesting red fir more favorable than ever. (1790)

RESPONSE: The Present Net Value (PNV) of recreation is estimated to be higher than stumpage values.

COMMENT: Writers of the Forest Plan did not even realize that there are two subspecies of red fir on the Inyo; literature on regeneration is for Shasta ssp. in a much wetter climate far from this region. (1577)

RESPONSE: Silviculture of the two varieties of red fir do not differ. The silvicultural practices applied on the Inyo for all species take site specific microclimates into account.

COMMENT: I would like to see more areas of pinyon opened, areas where there are fallen trees. Most of the areas we've looked are so picked over and nonaccessible to those trees that are available, that it's becoming harder and harder to collect. (183)

RESPONSE: The resource cannot support the construction and maintenance of the roads that would be required.

COMMENT: Private cutting for fuelwood doesn't cause anywhere near as much damage and should continue to be allowed. (914)

RESPONSE: Personal use fuelwood cutting is provided for under the Preferred Alternative.

COMMENT: Need a Forest-wide Standard and Guideline for timber on what the Forest's emphasis is on personal fuelwood gathering. (1099)

RESPONSE: There is Management Area direction in the Final Plan regarding fuelwood gathering on the Forest. The 1977 Interagency Motor Vehicle Use Plan, which will be updated after completion of the Forest Plan, designates open and closed roads.

COMMENT: Instead of piling slash and burning it, hire people to process it into firewood lengths and sell it to the public. (348)

RESPONSE: The areas piled and burned are areas previously opened up to the public for cutting and gathering. It would not be cost-efficient to process such small material.

COMMENT: Your willingness to transfer wood production from sawtimber to firewood is disturbing. The two programs are distinct and separate except to the extent that fuelwood may develop from logging residual. As long as there is such a strongly developed demand for sawtimber that shows signs of increasing in the near future, any deliberate transfer of sawtimber into the firewood program is inappropriate. (1432) (2048)

RESPONSE: Sawlogs will not be sold as fuelwood in this planning period. There should be very little change in fuelwood availability for this period.

COMMENT: Mammoth and its rapid growth is rather alarming. I continue to fear that continued growth will continue to impact the local resources. The need for firewood endangers wildlife habitat. (1333)

RESPONSE: Fuelwood is an important resource to local economies. Fuelwood management direction is incorporated in the Plan and utilization of the resource must meet the MMRs (Minimum Management Requirements) for wildlife habitat diversity.

COMMENT: I trust your agency will not hesitate to reduce the number of wood permits you grant if the demand for wood becomes so heavy as to cause damage to the Forest. (1401)

RESPONSE: Firewood cutting must not damage other Forest resources. This may mean that the number of permits would need to be controlled.

COMMENT: Cutting of live trees for firewood or Christmas trees should be eliminated immediately. (1471)

RESPONSE: Trees are removed to thin stands that are too dense. This enhances the growth and vigor of residual trees. The removed trees are used for fuelwood or as Christmas trees so that they can be completely utilized.

COMMENT: I feel that public fuelwood gathering should be restricted to the same area as commercial timbering and that standing snags be left standing for the wildlife (hairy woodpecker and Williamson's sapsucker) that are dependent on their presence. I strongly urge that no new roads are built to open up new areas to fuelwood cutting. (1579)

RESPONSE: It is illegal to cut standing snags under present policy. No timber roads are scheduled to be constructed this planning period.

COMMENT: Wood gathering should be prohibited in the White-Inyo Range, which is already sparsely vegetated and because of slow regeneration of pinyon-juniper woodland. (1634)

RESPONSE: Wood gathering is restricted to dead and down **ONLY.**

COMMENT: Fuelwood cutting should receive priority where timber cutting is acceptable. (1974)

RESPONSE: The product that returns the most amount of money to the U.S. Treasury will be sold.

COMMENT: Limiting woodcutting to above 8,000 feet is rather naive in pinyon forests. Expecting these people to carry topo maps and be able to locate their position, or have an accurate altimeter to consult is a joke. (1642) (2196)

RESPONSE: Unique landmarks will be used for reference.

COMMENT: Timbering and firewood gathering are having an intense impact on forest wildlife habitat and soil nutrient cycling. The roads necessary for timber operations, any road access on the Forest for developed recreation, ski operations, geothermal projects and other developments accelerate and expand the range of fuelwood depredation. Forests reportedly are not taking adequate measures to curb this depredation of snags and down logs, vital cavity nesting habitat for birds and small animals. (2178) (2160)

RESPONSE: Access of any kind does provide opportunities for violations of fuelwood restrictions. Given the size of the Inyo and manpower limitations, enforcement of these violations is a problem.

COMMENT: Besides the impact on wildlife and forest nutrition cycles, fuelwood burning has a severe air quality impact. (2178)

RESPONSE: Regulations for air quality are controlled by the Great Basin Air Quality District. The large majority of nutrients are located in the smaller twigs and branches and needles not utilized for fuelwood.

TIMBER MANAGEMENT

COMMENT: Under what circumstances is taking snags and down wood legal? The draft Plan and DEIS indicate in some passages that snag cutting is illegal (DEIS IV-165). Other references give the opposite message: "Dead and down wood is legally available to woodcutters...". (DEIS III-43) (2178)

RESPONSE: Snags are not dead and down wood. They are standing dead trees. It is not legal to cut these. Wood must be both dead and on the ground (down) to be utilized by woodcutters.

COMMENT: Instead of allowing commercial and private parties to cut trees on their own, might arrangement be made by the Forest to cut trees under careful supervision and sell wood from a central yard? (2178)

RESPONSE: It is more efficient and practical to cut fuelwood under contracts and permits.

COMMENT: Arrangements for providing "Technical expertise and leadership in the establishment of woodlots on private land". Has the Inyo Forest or other Forests experimented with this practice? There are provisions in RPA for the Forest Service to act in a lead agency role in promoting suitable forest practices on private land. (2178)

RESPONSE: The Inyo Forest has provided technical expertise to woodlots in Bishop and Lone Pine.

COMMENT: I recommend a raise in fuelwood fees per cord to reflect environmental and other costs. (2178)

RESPONSE: Fees are reviewed annually.

COMMENT: Studies of impacts of fuelwood gathering in pinyon-juniper should be prerequisite to completion of the Forest Plan and EIS. Costs and progress of this study and its completion date. (2178)

RESPONSE: The impacts on other resources associated with fuelwood gathering are for the most part on soils and water quality. Because of the relatively gentle terrain on the Inyo where timber harvesting takes place, there are opportunities for off-road access to gather wood. The 1977 Interagency Motor Vehicle Use Plan which will be updated after completion of the Plan will evaluate these factors in determining which roads will be open on the Forest. Impacts are degradation of soils and water.

COMMENT: We feel that fuelwood is a necessary item for the residents of the area. They rely heavily on this resource for fuel. Any reduction in timber management such as timber harvesting or pre-commercial thinning would severely reduce the already short supply. Pinyon/juniper areas east of Mono Lake may be substituted, for example, for the loss of lodgepole areas. (2017) (49, 181)

RESPONSE: Pre-commercial thinning is a silvicultural treatment done to improve the health and vigor of stands. Fuelwood is a by-product. Commercial sales will be available depending upon the condition of specific stands. Lodgepole areas managed for timber production have not been reduced.

COMMENT: Use of uneven-aged management, as suggested earlier, would also help increase firewood availability. (181)

RESPONSE: Fuelwood availability is dependent upon amount of timber harvested, not on the harvest regime.

COMMENT: Coordination of planning with other forest landowners is essential to determine if firewood quantities might be available on BLM or other ownerships in order to keep from creating a serious adverse economic situation for the local communities. (181)

RESPONSE: Fuelwood availability from adjacent landowners has been insignificant in the past.

COMMENT: Cutting bristlecone pine, including fuelwood cutting, should be prohibited. (1664)

RESPONSE: Cutting bristlecone pine for any reason is prohibited.

COMMENT: Woodcutting of dead trees, down trees, for firewood gathering is okay. (2196)

RESPONSE: The Plan does not change the present policy of cutting dead and down trees. Standing dead trees cannot be cut as they are beneficial to wildlife.

COMMENT: Fuelwood gathering should be barred. (1900)

RESPONSE: Fuelwood gathering is a valid use of the timber resource; it reduces dead fuels. The Forest would have to pay for fuels reduction with the absence of fuelwood gathering.

COMMENT: Hardwoods, Plan IV-23. It should be added that harvest after a disaster or catastrophic event should only occur after sufficient time has passed for resprouting to be evident and only dead wood should be harvested. (1431)

RESPONSE: In a fire salvage situation, a judgment must be made on the chances of the tree dying of secondary causes as a result of stress. Most hardwoods in this area will stump sprout after harvest.

TIMBER MANAGEMENT

COMMENT: Hardwoods, Plan IV-23. Oaks play an important role for wildlife species. The only guideline for hardwoods is the protection from wood gatherers. There is a need to protect these pocket areas from detrimental grazing, incompatible recreational uses and development. Neither the Plan nor DEIS addresses hardwood management by alternative. What environmental considerations were given to hardwoods in each of the alternatives? (2190)

RESPONSE: There are no plans to harvest hardwoods. An environmental analysis by an interdisciplinary team would be necessary prior to any proposal which would impact the hardwood resource.

COMMENT: The minimum size requirement for old growth plots should be at least 100 acres. (1522)

RESPONSE: The size of the areas managed for old growth will be a site-specific determination. Factors such as terrain, adjacent vegetative cover, and wildlife habitat diversity needs will be taken into account in determining both the size and location of the areas.

COMMENT: All present spotted owl territories should be retained; old growth should be maximized. (91)

RESPONSE: There are no known spotted owl territories. If any are found, they will be protected as prescribed by Region 5 management direction.

COMMENT: In the Monache area, protection must be given to the Kingfisher Ridge old-growth forest. (1565)

RESPONSE: No timber cutting is scheduled in the Monache area.

COMMENT: Protect all remaining old-growth forests. At a minimum, analyze an alternative that includes such protection. (1649)

RESPONSE: The AMB Alternative emphasized wildlife and recreation which in turn de-emphasized timber management and thus maximized retention of old growth.

COMMENT: If you sell them off now by clearcutting, you have no guarantee that in this climate any tree will ever grow again to the size of the present old growth for future generations of tree lovers who have a right to ask that the National Forest spare these. (149)

RESPONSE: Rotation ages have been extended to 140 years for Jeffrey pine, 120 for lodgepole and 160 for red fir because of public concern that trees managed for sawtimber production would be too small to be visually desirable. Pure stands of red fir will not be harvested this planning period.

COMMENT: All remaining old growth timber should be saved, especially the ponderosa pine in the White Mountains. (277) (284)

RESPONSE: No timber cutting is planned in the White Mountains.

COMMENT: I would suggest that all areas designated Prescription #10 in Management Area #5 be changed to Prescription #9 - Modified Timber Management and that a minimum of three older, overstory trees be left per acre. (278)

RESPONSE: The portion of Management Area #5 west of U.S. 395 will be managed under uneven-aged management. Forest-wide Standards and Guidelines for wildlife require that snags and leave areas be left for wildlife in timber harvests (Plan, Chapter IV).

COMMENT: I strongly recommend that old growth forest in the Inyo be preserved in a forest reserve. (978)

RESPONSE: This would not be in accordance with multiple use. Areas managed for timber would result in reduced growth by retaining all old growth.

COMMENT: Logging should be limited to removal of less than 5% of old growth in any one year. (996)

RESPONSE: The Plan calls for allocation of a component of the suitable timber to manage for old growth. The remainder of the suitable timber base is managed to maintain or enhance the health and vigor of the forest while providing a continuing supply of wood products.

COMMENT: Wildlife diversity constraints applied to provide old growth seral stages will limit timber management of 6,587 acres of capable, available, and suitable timberlands. The additional restriction seems unwarranted, since 62,506 acres of capable and suitable lands, much of it in older seral stages, have already been preserved in wilderness and RNA areas. (2179) (1432)

RESPONSE: This will provide for better spatial distribution of old growth on the Forest.

COMMENT: Recommendations are that timber management should focus on maintaining and generating sufficient growth for genetically viable populations of species dependent on it via: A) no logging of red fir, including the south end of the Forest where the red fir is the Shasta subspecies; B) no logging in Roadless Areas 5053, 5054, 5047, and west of U.S. 395 (because of its large recreational value); C) maintaining or restoring old growth in remaining Jeffrey pine areas such that overall at least 30% of it is present as recognized in the AMN Alterative as the minimum needed to conserve non-commodity values; and D) no logging by management in Prescription #10. (1097) (1577, 2170)

TIMBER MANAGEMENT

RESPONSE: Logging in the Monache and roadless areas is not planned. Retention of a viable genetic base will be realized from the large area supporting timber outside the suitable land base and the policy of collecting seed from many trees. Uneven-aged management will be employed west of U.S. 395. Allocation of a component managed for old growth in the suitable base will be done with regard for spatial distribution to balance the needs of other resources. The acreage managed under Prescription #10 has been reduced.

COMMENT: The potential problems of intensive timber management on the massive scale proposed in red fir and Jeffrey pine are nowhere discussed in the DEIS including seedling losses due to the poor moisture holding capacity of the soils; seedling losses due to lethal soil temperatures; increases in insect infestations and predation by mammals; soil erosion and nutrient loss; competition with grasses and shrubs; adverse effects of widespread use of strychnine bait on wildlife; hazards of herbicide spray; and damage to the long-term fertility of soils from disturbance and compaction by tractor site preparation. (1577)

RESPONSE: The silviculturist making prescriptions on a stand of timber must analyze all components of both micro-sites and macro-sites prior to prescribing any treatment. Past experience shows that successful reforestation is obtained on the Inyo with very little soil and nutrient loss or damage. Pest management will be in accordance with integrated pest management whereby all alternatives available will be analyzed.

COMMENT: Even-aged single species silviculture is a long-term disaster if carried for more than a very few cycles. My reason for this belief has to do with increasing acidification of the forest soils and water. (428)

RESPONSE: Conifer species harvested are regenerated with the same species. No non-native species are planted.

COMMENT: Need a timber Forest-wide Standard and Guideline on emphasis use of uneven-aged management in nontimber prescriptions which permit timber harvest to benefit dominant resource use. (1099)

RESPONSE: Prescriptions for other than timber resource management set guidelines to manage timber to benefit dominant resource uses. Management Prescription #9 has been changed to uneven-aged management.

COMMENT: Appendix J unsuccessfully tries to justify the use of even-aged management instead of uneven-aged. However, it is biased in its presentation in favor of the benefits of even-aged and against the benefits of uneven-aged. It leaves out important scientific information. It is inadequate to justify the reliance on even-aged management. (126) (232, 328, 467, 1160, 1424, 1521, 1571, 1598, 1616, 1634, 1649, 1774, 1800, 1862, 1865, 1933, 1975, 2061, 2136, 2170,)

RESPONSE: Uneven-aged management will be implemented west of U.S. 395 because it is appropriate given the the high recreation values of that area. Even-aged management increases regeneration survival rates and is more cost-effective for intensively-managed stands.

COMMENT: We encourage the use of regulated uneven-aged management in areas reserved for visual quality, recreation areas, the Monache area, and streamside zones in order to manage these areas and provide protection and maintenance of the biological base. (181)

RESPONSE: These areas will not be managed for regulated timber management due to the higher values of the other resources. See each Management Area for specific timber management direction.

COMMENT: The even-aged forest concept presented in the Plan never addresses any of the actual impacts to the environment and should. (Plan, Chapter IV, Management Area #7 - Upper Owens River) (430)

RESPONSE: The FEIS addresses the overall impacts to the environment. Individual project environmental analyses will analyze the site specific environmental impacts.

COMMENT: This display indicates that there would be more clearcutting in the Preferred Alternative than in the CEE Alternative. Why? Selection cutting "may be applied as appropriate, but is not part of programmed harvest". Why isn't it part of the programmed harvest as it is on most Forests? It is still cut and utilized for the same purpose as clearcut timber and should be counted as well. Surely, after 80 years of timber management using selection harvest methods, the Forest Service can find ways to program yields from such lands! It appears very doubtful to me that there is any need for clearcutting on Inyo National Forest. The benefits of clearcutting are miniscule in comparison to the other values of the Forest. (5) (1295)

RESPONSE: The acres clearcut under the CEE Alternative have more volume of timber per acre than that of the Preferred Alternative. The areas that were scheduled for selection cutting were primarily managed for resources other than timber management; trees were not cut for silvicultural reasons. Clearcutting results in increased yields and is more cost-effective.

COMMENT: Against clearcutting and use of herbicides. Inadequate consideration has been given to the effects of clearcutting and herbicides upon riparian habitats and upon endangered species. Of particular concern is the use of aerial application of herbicides. The proposed alternative's plan for clearcutting does not give consideration for the long-term health of the Inyo. Clearcutting is the most economical way of harvesting timber in the short run; it is not economical in the long run. Inadequate consideration has been given to the effects of logging on the Forests' unstable mountainous soils. (74) (8, 9, 10, 11, 12, 13, 16, 21, 22, 44, 281, 933, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1445,1446, 1447, 1448,

1449,1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1843, 1865, 2170))

RESPONSE: Riparian areas, endangered species and soils are adequately protected under the Forest-wide Standards and Guidelines.

COMMENT: Clearcutting west of U.S. 395, as proposed, would be particularly damaging to scenery. The views from Mammoth Mountain, Minaret Vista, San Joaquin Ridge, and June Mountain down onto the Forest are magnificent. Patches of clearcut in the Forest are destroying those views. (1650) (281, 1248)

RESPONSE: Openings created by timber management west of U.S. 395 will not exceed five acres.

COMMENT: The reliance on herbicides should also be replaced by natural regeneration methods. (126)

RESPONSE: The Plan does not rely on herbicides for artificial regeneration. The Inyo has used very little herbicides for timber management in the past. Natural regeneration has not proven to be a reliable method of ensuring new growth on the Inyo.

COMMENT: Concerned with the long-term effects of regeneration or clearcut logging on species diversity, soil fertility and erosion and water quality. Over time, soil loss and lack of nutrient input could seriously decrease the growth supporting ability of forest soils. Clearcutting forests in the arid east side is not supported by adequate data presented in the DEIS or Plan. Although tests with red fir forests are alluded to, as well as the ability of Jeffrey pine and lodgepole pine to regenerate in open areas, this seems hardly adequate. Clearcutting has proven effective in the productive forests of the Northwest, but little information is available for the east side. For this reason, we oppose clearcutting on the Inyo National Forest until adequate information concerning the ability of east side forests to regenerate is demonstrated on the same types of soils as will be affected by harvest. (1108) (71, 1430)

RESPONSE: Regeneration of all species of timber has proven successful on the Inyo. The red fir stratum will not be managed for timber this planning period. Logged areas are regenerated with the same species. Site-specific resource concerns are addressed on the project level through the environmental analysis process.

COMMENT: Concerned about clearcut harvesting on steep and arid slopes, and those with low productivity soils. Marginal areas do not reforest easily, and the resource damage and expensive, long-term recovery period may not be justified especially when comparing the costs of harvest, site preparation, and successful reforestation with timber receipts. Request these areas be withdrawn from regeneration cut management. (1108)

RESPONSE: The ability to regenerate, effects on other resources, costs and benefits are all taken into account prior to making a decision to clearcut any area. Timber receipts must be adjusted to cover the costs of reforesting logged areas.

COMMENT: Most concerned about the fate of native herbaceous forest species that require cool, shaded forests, undisturbed soil, and decaying forest humus. Many herbaceous forest species probably cannot tolerate a continuous disturbance cycle with open canopies, competition from characteristics of clearcut forests. Loss of these forest species is a significant concern because it reduces forest diversity and possibly creates rare species from those which are presently common. The same may also be true for certain shrub species. What is the fate of these forest species? Will they someday become rare enough to warrant classification as sensitive? (1108)

RESPONSE: The timbered areas on the Inyo are denser now than they were prior to Forest Service management due to the exclusion of fire. Areas scheduled to be clearcut annually are a small portion of the total forested area on the Inyo.

COMMENT: The term "clearcutting" needs to be defined or somehow put in proper overall context with the term "even-aged management". Clearcutting of mature overstory while leaving the seed/sap component may actually resemble an overstory removal. It will result in an even-aged effect. Visually, however, it is distinctly different from so-called "bare ground clearcutting." (1432)

RESPONSE: Overstory removal is visually different from "bare ground clearcutting", but it is a form of even-aged management in that it results in a stand composed of trees of generally the same age. In many cases stands are two-storied; the overstory being the culls left from harvests at the turn of the century. These mature trees need to be removed now to promote the growth of the younger component of the stand. Clearcutting is just one form of even-aged management which is defined in the glossary.

COMMENT: Any clearcutting that "has" to occur should be done in relatively narrow bands. (1749)

RESPONSE: The size and shape of clearcuts is dependent upon the VQOs, species, slope, aspect, soils, wildlife needs, etc.

COMMENT: No clearcutting should be allowed in areas greater than 2 acres. Careful attention should be paid absolutely to avoid cutting near streams or on steep slopes which would create siltation and irreparable erosion. (1434) (952)

RESPONSE: Clearcutting in larger areas is done to ensure better regeneration and to reduce harvesting costs. Riparian area Standards and Guidelines are designed to ensure that stream banks and courses are protected. Harvesting

on slopes greater than 30% will only be done if economic conditions change to make it cost-effective. If this happens, mitigating measures will ensure that no irreparable erosion takes place.

COMMENT: The Plan does not adequately consider the many other values of the Forest. These other multiple uses are treated as constraints upon further timber production. (2160)

RESPONSE: Constraints are placed on timber by other resources because of the fact that the Plan recognizes that other resource values exist and must be weighed against timber values. Red fir will not be harvested during this planning period because of high recreation and visual values in the Mammoth/June area.

COMMENT: The Plan needs a detailed analysis of the environmental and recreational consequences of even-aged management. (1548)

RESPONSE: Site specific detailed analyses are required prior to each timber sale.

COMMENT: Even-aged management, I've come to suspect, is a euphemism for tree farming. An even-aged forest will support about as much biotic diversity as a field of corn - next to nothing. Moreover, like monocultural agriculture, it will be susceptible to insects and disease, and require periodic doses of pesticides and fertilizers. (1548)

RESPONSE: Trees have a long rotation period to create diversity. Over time the vegetative composition of the understory changes and in some cases the overstory changes as well. The Inyo uses neither pesticides nor fertilizers. Fertilizing forests has not proven to be effective. It is not cost-effective since it does not increase growth for more than the short-term.

COMMENT: The public concern about diversity is incompatible with clearcutting 20-40 acre parcels. (1631)

RESPONSE: Clearcuts on the Inyo average between 10 and 20 acres. Planting increases seral stage diversity by providing new young growth. These early seral stages in conifer forests provide habitat for annual plants. Approximately 13,000 acres will be managed under the uneven-aged system which limits openings to 5 acres.

COMMENT: Support use of the full range of silvicultural tools that best suit on-site conditions. On-site judgment should be used by the foresters; strict use of planned practices is not proper. (1869) (1864, 2142)

RESPONSE: The on-the-ground silviculturist making prescriptions will have a full range of silvicultural tools with the exception of the general

limitations dictated by this Plan. The project environmental analysis will be site specific.

COMMENT: These soils, prolonged summer drought, and intense summer insolation make regeneration of stands much more likely when individual tree selection is used to create small openings in the forest. (1798)

RESPONSE: When vegetation management is needed, individual tree selection is impractical. On most sites, regeneration is unsuccessful without adequate vegetation management.

COMMENT: We are looking at the probable loss of a very large tree growing area as replanting appears to be ignored totally. (2113)

RESPONSE: Standards and Guidelines require artificial regeneration to be accomplished within three years of clearcutting to assure that adequate restocking is attained within five years.

COMMENT: Small tracts of less than 20 acres on level or near level terrain may be appropriate for clearcutting. (2136)

RESPONSE: This coincides with the Plan.

COMMENT: Even-aged management is expensive in the long run. (1664)

RESPONSE: Even-aged management is less expensive in the long run than uneven-aged management. It requires fewer entries into stands; regeneration and growth is higher for intolerant species; logging costs are reduced.

COMMENT: NFMA, Section 6 (G)(3)(F) states that even-aged methods may be used only where such cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation and esthetic resources and the regeneration of timber resource. Thus, the NFMA places an explicit burden of proof on the Forest Service regarding the use of even-aged systems and reserves its strictest test for clearcutting. The Inyo has not established how its excessive reliance on clearcutting is consistent with the legal requirements discussed above.

According to land management planning direction for the Pacific Southwest Region (the Rainbow Book), the Draft Plan is to assume a stumpage price of $114.66 per thousand board feet. Based on the analysis of cut and sold reports mentioned above, an average of $69.73 per MBF was actually received. Average timber prices actually received on the Forest are thus 39% less than the prices assumed by the Inyo National Forest. We urge the Forest Service to drop intensive timber management on the Inyo National Forest altogether. Its arid climate, soil productivity levels, wildlife, visual quality, and biological diversity would all benefit from abandoning the idea that the Inyo is an appropriate forest for intensive timber management. (2169) (160, 2054)

RESPONSE: The Standards and Guidelines and Prescriptions assure the protection of other resources. Timber management is one of the multiple uses on the Inyo. It has been reduced to benefit other uses. The Inyo sells timber averaging $1,000,000 per year at an annual cost to the government of $800,000. In addition, it provides jobs and economic benefits to local communities.

COMMENT: If the management strategy of clearcutting were actually put into effect, the environmental consequences for watershed, wildlife habitat, soils, dispersed recreation and visual quality would be unacceptable. These impacts, however, are not discussed in the Environmental Consequences section for timber in the DEIS. Instead, this section merely describes the management strategy. (2170)

RESPONSE: The consequences are in each individual resource section under Environmental Consequences.

COMMENT: We were concerned over the use of even-aged management using 20 acre clearcuts in the Jeffrey pine type. Some of these pine areas such as the Glass Mountain management unit are located in arid regions with a very coarse and undeveloped pumice soil. Large openings could result in micro-climate changes which would require large expenditures of funds to reforest. The Jeffrey area has historically been logged using a selection type of management, and it may be advisable to continue use of uneven-aged techniques in the more arid portions of the Inyo. (49) (112, 1177, 1632, 1820, 1995)

RESPONSE: The actual opening size and cutting prescription are dependent upon site-specific conditions. This Plan only prescribes the sideboards. Silvicultural field review with an interdisciplinary team will recommend the appropriate harvest methods. Although Prescription #10 is high level timber management, that does not mean that Jeffrey pine will be harvested using 20 acre clearcuts. It does mean that clearcutting is one silvicultural option that can be used if it is the best silvicultural technique for a site.

VEGETATION

COMMENT: The CNDDB currently recognizes approximately 375 terrestrial communities for the State. The Inyo National Forest should determine which of these communities are present in the Forest and develop a list of areas that could potentially fill RNA needs for Region 5. I would suggest more intensive inventories than the Cal Veg surveys. (1108, 1030) (134)

RESPONSE: A combination of wildlife habitat relationships (WHR) types, California vegetation types and timber types were used for identifying vegetation communities on the Forest. These classification methods consider overstory cover percent, successional stages, and dominant overstory species. For Forest level planning, this is considered adequate. Project level activities are intensively surveyed and plant associations are

documented in the environmental analysis. The database dictionary provides a crosswalk between the different methods used to classify vegetation. The Inyo has already provided a list of candidate RNAs based at least partially on the vegetation communities present.

COMMENT: Concerned with the practice of introducing nonnatives for erosion control. (1108) (134, 382, 1532, 1608)

RESPONSE: Limiting the introduction of nonnatives for erosion control may result in a decreasing water quality. For projects such as ski area runs, non-natives have provided the most effective restoration results. On projects such as reseeding native vegetation or restoring wildfires, native species can probably be used.

COMMENT: Eliminate existing tamarix species on the Forest and prevent further invasion. Monitoring for salsola and eliminating it is not addressed. (1522, 381)

RESPONSE: The Inyo is currently preparing an environmental analysis to determine the impacts of removing tamarix in spring areas where the species has invaded. The Forest is planning on eradicating stands of tamarix that have encroached into spring habitats. Salsola is widespread both on and off Forest administered lands. No attempt will be made to monitor this species on a large scale.

COMMENT: Management Area Direction #19, Plan IV-136, third paragraph. The statement regarding foxtail pine is in error. It is found northward from the Kern Plateau at least to Onion Valley. (1431)

RESPONSE: This will be included in the Final Plan and EIS.

COMMENT: Why are foxtail and bristlecone pine not included? (1431)

RESPONSE: Both foxtail pine and bristlecone pine were lumped into the type titled subalpine forest. Included also in this category are whitebark and limber pine. Essentially no management activities are planned in habitats dominated by these species, so lumping them allowed a reduction in the complexity of identifying vegetation communities.

COMMENT: Plan A-4. Is this an activity in which the California Native Plant Society could lend assistance? Inventory, transect establishment, photos? This also applies to oak woodlands, Plan A-6. (1431)

RESPONSE: In the course of developing inventory methods, several agencies will be contacted. These will include the CNPS, the California Department of Fish and Game, Forest Service botanists and other interested parties.

VISUALS

COMMENT: Nowhere in the Plan or DEIS is there a description of vegetation types and seral stages found on the Forest. (1431)

RESPONSE: Refer to the wildlife Forest-wide Standards and Guidelines for diversity and habitat types.

COMMENT: Forested habitats, Plan IV-43. What are "WHR" types"? (1431)

RESPONSE: WHR types are wildlife habitat relationship vegetation types. They use dominant overstory, canopy cover and successional stage to identify various vegetation communities. They are used to classify habitats for wildlife species, and were used to identify habitats of management indicator species.

VISUAL RESOURCES

COMMENT: Any new ski development should be as unobtrusive on scenic values as possible. Therefore, no ski area should be visible from U.S. 395. (214)

RESPONSE: It would be highly desirable to have ski areas not visible from U.S. 395; however, due to the nature of ski area design that calls for wide ski run clearings on steep slopes through dense stands of timber, it is virtually impossible to have them not visible. If a decision is made to develop a ski area, the VQO of partial retention will be required which means that the runs may be visible but totally subordinate to the natural landscape character. Hopefully, through proper design, many of the runs would not be discernible at all. Since the distance from U.S. 395 is 3-6 miles, the base areas and lift structures should not be visible at all. The main concern with visibility is color contrast of soil with dark forested areas. Revegetation of cleared areas will be necessary to reduce the visibility of any cleared runs.

COMMENT: Management Area #8 - Mammoth Escarpment. In the visual resources direction, the following are missing: acknowledgement of the fact that this area dominates the view to the west of the Mono Basin Scenic Area and thus should not be scarred with roads, clearcuts, mining developments and ski areas; and a statement to the effect that no logging will take place until the issue of development is settled via the completion of a cumulative study of the impacts of all proposed developments on Inyo Forest resources and specific proposals involving the area to be logged have received final approval. (2170)

RESPONSE: The Mammoth Escarpment Area #8 is located 20 to 30 miles south of the Mono Basin Scenic area and most of it is not visible from the Mono Basin as it is shielded from view by June Mountain Ridge. The direction for the Mammoth Escarpment generally emphasizes retention of recreational and visual values. Future ski areas will only be developed after preparation of a feasibility study, cumulative impact study, and an environmental analysis has been prepared, and the decision that a ski area can be developed without

significant adverse impact, with proper mitigation, on all other resources in the area. Logging in the heavy red fir area at the base of San Joaquin Ridge will not take place during this planning period which will allow for the study of the future ski potential and the area's other resource values in relation to the existing timber stands.

COMMENT: Management Area #4 - June Lake Loop. Please add to the first visual resource directive: "Coordinate viewshed policies with those of the June Lake General Plan." In the fourth visual resource directive, please insert "...scenic resource and design element guideline." (1638)

RESPONSE: We have added wording similar to your suggestions.

COMMENT: Management Area #2 - Lee Vining. Please add the following to the first visual resource directive: "Develop a similar viewshed analysis for U.S. 395 within this Management Area." (1638)

RESPONSE: U.S. 395 only crosses a small portion of Management Area #2 and that is not on public land but through the town of Lee Vining. The need for a corridor viewshed analysis will be identified in both Management Area #3 direction and the Mono Basin National Forest Scenic Area Plan.

COMMENT: One of the main attributes of the Inyo National Forest, besides scenic splendors, is the current availability of unspoiled and undeveloped open space. Please don't sacrifice such values for other values which in comparison are of negligible benefit to the American public. (5) (79, 481)

RESPONSE: Prescriptions have been applied to 1.38 million acres or 71.7% of the Forest that do not allow significant development or land modifications in the Plan. These include Prescriptions #1, #2, #3, #4, #5, #7, #8 and #17. Open space is one of the primary values for all lands where these prescriptions are applied. Prescriptions #6, #9, #10, #11, #16, and #18 allow for some degree of development and land modification but, for the most part, would preserve open space. These prescriptions total another 476,000 acres or 24.6% of the Forest. Of the remaining prescriptions, #12 and #14 both have high levels of open space which would remain unless an area was developed as a ski area. Only Prescriptions #13 and #15 could be considered to not have open space that is unimpacted by development. These two prescriptions total 8400 acres or 0.4% of the Forest. Open space is interpreted to mean non-developed general use zones, both roaded and unroaded. In the Preferred Alternative this would apply to over 99% of the Forest.

COMMENT: Plant screening vegetation to reduce the visual impact of the Convict sewer plant facility. (1099)

RESPONSE: Wording has been added to the visual resource direction for Management Area #11 specifically addressing your concern.

VISUALS

COMMENT: Can't something be done in the long-term to reduce the visual impacts of the Mammoth-June Lake airport and the existing waste treatment plant? They are major developments, but the Forest Service allowed them to go in where they did, and, therefore, has a responsibility along with the permittees of reducing the excessive impacts. (5)

RESPONSE: The Forest Service is in the process of exchanging the airport to Mono County who will then be the owner. Our Forest Plan will not apply to nonpublic land, thus any input would be through the County planning process. The Forest Service input would be limited to concerns of the development affecting public land.

COMMENT: Because of adverse visual impact, no wind farms should be located near main highways or near any roads leading into the main canyons on the east side of the Sierra Nevada. Unless hidden by intervening ridges or trees, there should be no wind generators within two or three miles of highways. (382)

RESPONSE: Current direction in the Forest-wide Standards and Guidelines would not allow a wind farm to be visible from major highways because they would not meet the VQO of retention. This would apply to U.S. 395 and all other major recreation roads serving the intensively used drainages on the Forest as well as many other key roads, trails, streamside zones, and recreation sites.

COMMENT: Management Prescription #16 - Nordic Ski Area, Visual Resources. We would probably opt to use the VQO classification of partial retention as opposed to retention. (1013)

RESPONSE: The retention VQO is required only for marked trails, not the entire area. Prescription #16 has been retitled "Dispersed Recreation."

COMMENT: I don't see how wind energy will maintain VQOs! (1634)

RESPONSE: Depending on the size and scope of a wind energy development, it may not be possible to meet VQOs. Desirable locations are on ridgelines which, on this Forest, are highly visible for long distances. The contrast and movement involved in a wind farm development will make it difficult to mesh with the local landscape even when seen from long distances. Any wind farm proposal would be analyzed on a site specific basis.

COMMENT: Either manage the Mammoth Scenic Loop Road for visual resources or change the name. The Scenic Loop should be included in the list in Paragraph 2 on Page IV-36. (1099) (1617, 1983)

RESPONSE: The name was selected by the community of Mammoth Lakes. The road is classified as a sensitivity level 1 road with a VQO of retention applied in foreground. This is a very restrictive classification. Designation as a potential scenic highway is made by the State of California; the actual

proposal must be made by the county before designation is made. The County has their own system of what they consider scenic highways. The Forest Service does not designate scenic highways and only included those highways that were so selected by the state in Paragraph 2. The visual resource management system does recognize those roads and highways from which the view is important and the scenic resource should be maintained and/or enhanced. The Scenic Loop Road is one of those roads.

COMMENT: Only 3.6 acres out of every 100 acres on the Forest are proposed for timber management, yet you also propose to limit the size of openings to protect visual quality. It seems to us that artificial limits on the size of clearcuts can have a negative effect on visual quality Forest-wide. We think the concern over the visual aspects of clearcut size alone is misdirected. (1432)

RESPONSE: The limit on the size of a clearcut provides the upper limit of an acceptable size. Limitations on clearcuts cannot be related to the Forest as a whole but only to the area actually seen from a key view point. Since the harvesting of timber can result in a large percentage of acres in a relatively small area to be heavily modified, the limitation is important to preserve the very valuable visual and recreation attraction that is found in the Eastern Sierra.

COMMENT: Consider the conflict between high level timber management and other values such as scenic corridors and concentrated recreation areas. (1638)

RESPONSE: High level timber management is not allowed in the foreground zones of key scenic corridors. The VQOs of retention and partial retention constrain the harvest of timber to levels that are visually acceptable. The VQO of retention must be met within all concentrated recreation zones and often in the middleground and background zones outside of the concentrated recreation zones. Management direction in Prescription #12 precludes any high level timber management within concentrated recreation zones and maintains the timber resource for its recreational and visual values.

COMMENT: The aesthetics of overgrazing must be addressed. The degradation of the landscape from grazing mismanagement is highly visible. The more dramatic examples are the prevalent barren moonscapes that are sheep bedding areas (often adjacent to streams or wetlands or in meadows), or the clouds of dust that denote where a thousand head of sheep trample the vegetation and soils, or the lack of streamside vegetation where livestock go to water and collapse the streambanks. The resulting landscape is in direct conflict with the visual quality and recreational goals for basin Forest lands. (1617)

RESPONSE: The consequences section of the EIS does not identify any significant impact on the visual resource because of grazing. Visual impacts are those that are readily apparent to the casual observer and the general public. Most of the key viewpoints are from roads, highways and recreation

sites. From roads, grazing activities appear to be an acceptable part of the pastoral or rural landscape. In fact, grazing animals are often seen by the general public as a positive element in the view. Grazing is almost always eliminated from heavily used recreation areas thus eliminating any conflicts with recreation developments. From a moving vehicle it is unlikely for anyone but the trained range conservationist or botanist to discern any changes in vegetation. In fact most users would not be aware of the changes if located along a trail.

Bedding grounds generally are not of the scale to be perceived as visual modifications, even in foreground, and they would easily meet a retention VQO. Likewise, dust from moving sheep bands does not constitute a visual impact especially since it has no lasting effect and is borne away by the air currents. Range oriented facilities are usually of minor visual impact and consist of fences and watering devices. These are also usually accepted by the general public as part of the local landscape and they do not look out of place.

None of the above constitute a visual impact that needs to be handled through mitigation in the Forest Plan. The one area where grazing does have a visual impact on the visual resource would be in sensitive riparian zones that are used by recreationists. Impacts are usually on a localized basis and mitigated through the requirements to meet water and riparian minimum standards.

COMMENT: Please include the Mono Basin National Forest Scenic Area in your analysis of visual resources based upon previous discussions of the relationships between management of Scenic Area lands and other Forest lands. (DEIS IV-134) (1617) (278, 1617, 2170)

RESPONSE: The Forest Land Management Plan was started long before the Scenic Area was established. It would have delayed the Forest Plan beyond an acceptable length of time to combine both efforts. The management direction for visual resources found in the Forest Plan will also apply to lands in the Scenic Area but stated separately in the Scenic Area Plan. The direction in the Scenic Area Plan will be more detailed and site specific than that in the Forest Plan.

COMMENT: Preserve the natural scenic visual quality everywhere in the Inyo National Forest. (13) (8, 9, 10, 11, 12, 16, 21, 22, 44, 1434, 1435, 1436, 1437, 1438, 1439, 1440, 1441, 1442, 1443, 1444, 1445, 1446, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455, 1456, 1457, 1458, 1459, 1460, 1461, 1462, 1463, 1632, 1981)

RESPONSE: Through the application of visual quality objectives on every acre of public land, the visual quality of the Inyo National Forest is recognized and protected. Reductions in quality can only be made when identified and approved in public documents through the environmental analysis process. A primary value of the Inyo National Forest is its visual resources. Much of the economy of the area is related, in part, to the outstanding scenic resources available.

COMMENT: The potential visual impacts of ski towers along the San Joaquin ridge should be considered. These could be seen for miles on either side from the Ansel Adams Wilderness to the west as well as from the wildlands all the way to U.S. 395 and beyond. (1183)

RESPONSE: The planning documents do not get to the level of detail required to relate to location of ski towers. Direction will not be found on how to develop a potential ski area; the decision on whether or not to build the area has not been made yet. A full range of preliminary analyses, a feasibility study, and a EIS would be completed before ski towers on San Joaquin Ridge could be dealt with. The visual resource impacts of a ski area development would be analyzed throughout all of these study efforts with appropriate mitigation identified and implemented.

COMMENT: The seen area from U.S. 395 and State Highway 203 should be kept as visually attractive as possible; do not build any condo complexes or high-rise buildings of any nature. The area is for recreational scenic use with the primary purpose of being away from large urbanized areas and into unspoiled scenic wilderness areas. (1260) (1421, 1540, 1570, 1631, 1645, 1983)

RESPONSE: The direction in the Forest Plan identifies the importance of the seen area as viewed from U.S. 395 and State Highway 203. The visual quality objectives for foreground zones is retention which would preclude any development that would be noticeable by the casual observer. Development in middleground views would have to meet either retention or partial retention VQOs. This restrictive direction would apply only to public lands. Any development on private land would be controlled visually by the county and the appropriate zoning and regulations. Generally the Forest Plan would not have anything to do with high-rise condos and buildings. The Forest Service is willing to work with local agencies to develop guidelines and mitigation as part of a local planning effort.

COMMENT: June Lake Loop - Visual Resources. How are the visual impacts of the electrical power transmission facilities to be minimized? How are the impacts of the private land developments to be mitigated? Seems to be a general interest in minimizing the visual impacts of the 115 kv transmission lines. Where might they be located which would minimize their visual intrusions without adversely affecting a different viewshed? (1608)

RESPONSE: Private land developments will not be mitigated through direction in the Forest Plan. Visual impacts of private development will have to be mitigated through county and community zoning and regulations; however, the Forest Service will work with local agencies to develop guidelines and mitigation. The 115 kv transmission lines currently impact much of the heavy use zone in the June Lake Loop both visually and physically. Direction for Management Area #4 calls for a corridor viewshed analysis that would identify the degree of adverse impact of all powerlines, including the 115 kv, and would propose specific mitigation to correct these impacts. Included would be possible relocation routes. These are not known at this time, but they would have to be in a less heavily developed area to meet visual quality

objectives and reduce conflicts with the many users and residents of the Loop. In areas heavily oriented towards recreation, a further level of planning called recreation composite plans will also deal with conflicts with utility lines both visually and physically in relation to recreation use and development.

COMMENT: The Forest Service will encourage visually damaging projects such as ski development and geothermal development. (1632) (1530)

RESPONSE: Both ski and geothermal development will entail some loss of visual quality due to the scope and nature of the development. Direction is adequate in the planning documents to protect the visual resource in relation to ski area development and to establish the guidance for future planning and environmental documents. Direction is found in Prescriptions #13 and #14 and in direction for Management Area #8. Direction providing guidance for geothermal development is not identified specifically relating to visual resources except that which is under visual resources in the Standards and Guidelines. Geothermal development and its impacts on the visual resource has been handled under a separate analysis process that looked at and evaluated leasing and development potential. These processes are administered by the BLM, Department of the Interior. Neither ski area nor geothermal developments are encouraged by the Forest Service but rather they are analyzed when proposed by private industry. The Forest Service then analyzes these areas in relation to all Forest goals and objectives and environmental concerns.

COMMENT: We oppose large clearcuts of timber within the viewshed area of Mammoth Lakes. The visual integrity of the area surrounding Mammoth Lakes is an important part of your economic base. Large clearcuts which are visible from higher elevations are a visual blight, and the Plan should not allow this practice. (1884)

RESPONSE: The management and harvest of timber west of U.S. 395 has been changed to Prescription #9 - Uneven-Aged Timber Management. Large clearcuts will not be utilized under this prescription. Small group selection could create openings not to exceed 3 to 5 acres. This change in direction is in response to public concerns relating to the heavy dispersed recreation orientation of forested lands adjacent and north of Mammoth.

COMMENT: The most unsettling of all impacts on Forest users from the cities is the continued erosion of our high-country viewshed. Lift towers, logged ski runs, roads and buildings that are already existing in Mammoth and June Ski Resort are far too visible when viewed from adjacent National Park and wilderness lands. (2191)

RESPONSE: The direction for Management Area #8 which includes most of the existing and potential ski areas states under visual resources "construct all ski area development in Prescription #13 and #14 to meet the VQO of retention as seen from trails and use areas in Management Area #10 which is primarily

wilderness. So, as explained above, no new ski area improvements will be visible to the casual observer as seen from wilderness.

COMMENT: This section defies understanding. It seems you have come up with a complicated formula to evaluate the visual resource. The Inyo Forest's greatest asset is its natural scenic beauty. I'm sure that the Plan is designed to protect and preserve this valuable resource; however, it is difficult to understand how this is to be accomplished based on the Plan. I would suggest a more simplified version that is more easily understood. In terms of visual landscape qualities, a group of people and computers are deciding for the public's eyes what is pleasing for the eye to look at and what is not. I find that aspect kind of sad because everyone views natural surroundings a lot differently. (33, 2199)

RESPONSE: The visual resource management system is not an easy one to understand without working with it. It is a system that defines and provides direction for visual resource management in the Forest Service. Visual resources, to be recognized and protected, must come from a common base that captures and describes basic landscape values and how they are seen. The system will not satisfy everyone nor was it intended to. Terminology used in the Plan is consistent with the system and the direction given for the land management planning process through all Forest Plans.

COMMENT: Visual Resources. Can anything be done about the conspicuous scar of the DWP aqueduct across Williams Butte? (278)

RESPONSE: The visual direction for Management Area #3 states that a corridor viewshed analysis and plan will be developed for the U.S. 395 corridor. This would include mitigating as much as possible the scar created by the aqueduct on Williams Butte as part of this analysis. Since another level of planning is identified to handle site specific visual resource impacts in this area, no specific direction concerning the aqueduct would be included in the the Forest Plan.

COMMENT: Visual resources. Do not allow new power lines to cut through the area to serve potential geothermal plants. Also, do not allow any new road construction in the management area west of U.S. 395 for logging or geothermal development. (278)

RESPONSE: Powerlines serving geothermal development will be located to minimize the visual impacts and will be thoroughly reviewed during the planning and application phases. New lines will generally follow approved corridors that minimize impacts on all in-place values. The road system west of U.S. 395 is in place. Any new roads would be those needed for access to either recreation developments or geothermal developments. The roads generated for geothermal development would generally be for administrative use only and not for public access. All new roads would be short.

VISUALS

COMMENT: Your second directive for visuals in Management Area #4 sounds good, but how can you minimize the visual impacts of those monstrous power plants? (1643)

RESPONSE: Geothermal power plants and their attendant well sites and pipelines are major impacts on the visual resource. These impacts are addressed through the environmental analysis process at the time that a specific development is proposed. Mitigation could include proper location, siting of facilities, proper coloration, design modifications, use of topographic and vegetative screening, and site rehabilitative measures. Avoidance of roads, trails, and areas of heavy recreation use will also help to reduce the impacts.

COMMENT: The area east and west of U.S. 395 should be designated "limited development" to retain the visual and scenic quality, prevent damage to Hot Creek, and protect the migration corridor and staging area for the Sherwin mule deer herd. There should be no airport expansion and no hotels, golf courses, or convention centers built. (140)

RESPONSE: Visual resource direction for Management Areas #9 and #11 call for a corridor viewshed analysis and plan to analyze all visual impacts along U.S. 395 and State Highway 203. Since this plan will be tiered to the Forest Plan, specific direction aimed towards on-the-ground impacts should not be added here. The corridor viewshed analysis will be oriented towards impacts on public lands, however, private land impacts will be identified with suitable mitigation recommended to the appropriate agencies.

COMMENT: All of these five proposed areas have a higher scenic value than development value. A need for expansion of ski capacity in the Inyo must be irrevocably proven. (1775)

RESPONSE: All potential ski areas identified in the Plan have outstanding visual quality and each area occupies an important segment of the landscape as seen from many key viewpoints from Mammoth to June Lake and north. The value of the visual resource will have to be weighed and meshed with the demand for downhill skiing as well as many other resources. The analysis that will identify the many resource values and determine the best mix of uses for these areas will be completed independent of the Forest Plan.

COMMENT: Change the existing text to: "Timber management must meet or exceed the visual quality objectives of retention in potential concentrated and dispersed recreation areas; timber management openings should be limited to 5 acres or less." People do not travel hundreds of miles to the Inyo to view timber management openings but to enjoy the Forest! (2170)

RESPONSE: Management direction in Prescription #12 - Concentrated Recreation Area for timber states "apply selection, stand maintenance and other silvicultural methods to maintain or enhance the recreation benefits and attractions created by a healthy and vigorous multi-aged stand." This direction would not allow clearcuts. Visual resource direction for the same

prescription states "meet the VQO of retention with implementation of all other resource activities". This direction applies to all proposed concentrated recreation areas, both developed and undeveloped.

COMMENT: Regarding the Affected Environment section for visual resources, the value of red fir to wildlife, soil and visual quality is far greater than its value as a harvest species. See the separate section on timber issues for a discussion of red fir's "uneconomic" market status. (2170)

RESPONSE: The direction in the Final Plan will remove the red fir from the available timber base for this planning period. The red fir will be managed for its values for recreation, wildlife, watershed, and visuals.

COMMENT: View corridors consisting of mature forest should be left along the major roads. Much of the public perception of the Forest is the view from U.S. 395. (1631)

RESPONSE: The direction for the foreground zone along U.S. 395 is to meet a retention VQO which means a multi-aged stand should be visible to the casual observer. This includes mature stands of trees that should be maintained in this corridor. This concern is addressed in the Forest-wide Standards and Guidelines.

COMMENT: Saving a strip along the highways for visual impact is a sad commentary on management. Walking beyond the border and finding gravel pits, trash, loss of the forest and prime qualities. (1900)

RESPONSE: Visual resource management is dependent upon the use allocated for a particular piece of land. Management direction protects and enhances the visual resource in high recreation use areas.

COMMENT: What can be done to raise the VQO degraded by the structures atop Mammoth Mountain? I would like to see this issue addressed in the Plan or the EIS. (2185) (1924)

RESPONSE: The management direction for existing ski areas allows development to meet a VQO of partial retention which means that facilities will be visible but subordinate to the surrounding landscape. Any facilities that do not meet that direction will be mitigated, usually through the summer operating and development plan. The two structures that currently may not meet the partial retention VQO are the lift tower on top of Lincoln Mountain and the top terminal of Chair 23. Priorities for establishing visual rehabilitation projects are found in the Forest-wide Standards and Guidelines.

COMMENT: The Plan needs to specifically address ski areas. What will be done to bring the current ski areas up to the VQO of partial retention? Since a request for partial retention is not likely to be met by future ski

areas, a more stringent objective of retention needs to be applied to these areas. Partial retention cannot be expected to satisfy the public's visual expectation, especially visitors in the non-snow season. National Forests are visual resources as much as they are resources for other commodities and values. (2185)

RESPONSE: Existing ski areas submit a summer operating plan for development of runs, lifts, and base area modifications. Included are projects that will correct visual impacts that do not meet the partial retention VQO. These projects are analyzed through the environmental analysis process which will identify the specific actions and mitigation required to rehabilitate the impact. This site specific direction should not be placed in the Forest Plan which is a long range planning document, not a year to year program of work. New ski area development would not be possible if a VQO of retention was the applicable VQO. The major concern relating to the visual impacts of ski area development is with the summer visitor. If a major development such as a ski area meets partial retention, it will not create an unacceptable visual impact for the average summer visitor. Direction is located in the Plan for new ski area development to meet a retention VQO as seen from wilderness. This is more restrictive than the existing direction in the Mammoth-Mono Unit Plan.

COMMENT: The boundary line of Madera-Mono County Prescription #14 in the Preferred Alternative should be adjusted to meet the visual quality objective of preservation from the wilderness area. (1845)

RESPONSE: All wilderness will automatically receive a VQO of preservation right up to the designated wilderness boundary. In this case the wilderness boundary is located 300 feet west of the San Joaquin ridgeline and the Mono-Madera County line from Two Teats Peak south towards Minaret Summit. Anything east of the legal boundary will be assigned a retention VQO. If a ski area is ever developed along this ridge, it will have to meet a retention VQO as viewed from the wilderness to the west and a partial retention VQO as viewed from U.S 395 to the east. Preservation VQOs are only used for classified areas such as wilderness and RNAs where development of any kind is prohibited.

COMMENT: The visual quality objective of preservation should be applied to all views from the wilderness areas as well as views within wilderness areas. (1891) (225)

RESPONSE: All lands not covered by a special classification are subject to the multiple use concept which may include development or land modifications depending upon the mix of uses on that particular piece of land. The preservation VQO only applies to land where development is not allowed such as wilderness or RNAs. To apply the preservation VQO outside of wilderness would mean applying wilderness management policy to lands not so designated. Management is sensitive to how impacts outside of wilderness are viewed from users inside wilderness, and every effort is made to reduce visual impacts as much as possible. However, wilderness boundaries often are located

immediately adjacent to developed and occupied zones which make it impossible to eliminate all modifications from view.

COMMENT: The Forest Plan management emphasis should note that there is an opportunity to coordinate with local planning efforts to maintain and enhance the visual quality of the area. (1638)

RESPONSE: Visual resource management direction for Management Area #4 - June Lake Loop and Management Area #8 - Mammoth Escarpment calls for coordination with the local communities and Mono County to develop scenic resource elements and guidelines for both public and private lands. In many other management areas, specific direction is found that calls for coordination with numerous other agencies.

COMMENT: There was no VQO map! It was not possible to determine the visual effects on the Forest without one. This must be an oversight as all other Forests provided a VQO map. Since visual quality is one of the main assets of the Inyo Forest, it is surprising that there wasn't a map. (5)

RESPONSE: A VQO map has been included in the map packet for the final documents.

COMMENT: Please add to the first visual resources directive: "Work with local jurisdictions to develop design standards for development at or adjacent to the airport." (1638)

RESPONSE: The Forest Plan and visual resource system does not apply to private land. However, the corridor viewshed plan identified for Management Area #9 which includes the airport would identify all developments within the corridor that visually detract from the scenic resource. Direction and mitigation in that corridor viewshed study would call for working with local agencies to resolve visual problems. The Forest Service would also respond through any solicited response in the review of any proposed projects.

WATER

COMMENT: Management Area #9 - Mammoth. For watershed, add: "Satisfy municipal water needs after natural resource needs have been met." For Management Area #7 - Upper Owens River, add this element for watershed: "Give cumulative natural resource needs priority over municipal needs. (2170, 2179)

RESPONSE: Language similar to your suggestion has been added to direction for Management Areas #8 and #9.

WATER

COMMENT: The Draft Plan states that the Forest Service should "Initiate negotiations with the city of Los Angeles Department of Water and Power to manage Grant Lake Reservoir for the enhancement of recreation, visual, and other natural resource values." We are open to discuss such matters; however, since Grant Lake is an aqueduct storage and operational "reservoir", water levels will fluctuate greatly at different times of the year, and from year to year. The reservoir is currently managed, to the extent possible, to benefit recreational activities (with about 94,200 visitor days per year), but the very reason for the dam and the reservoir is to allow the Department to effectively manage the flow of water to the City. We are concerned that this issue (and other water related issues) are being elevated to the level of a policy which very likely could have an effect on the City's water rights. (1093)

RESPONSE: The goals of negotiations with LADWP are to manage Grant Lake to maintain lake elevations during the recreation season (May 25- Oct 31) within a specific range, and to manage the lake level during spring to minimize inundation of spring spawning fish redds (nests). The term "negotiate" is intended to mean that the agencies can agree on a management scheme. No intent exists to impact the City's water rights or impair the latitude to exercise long established rights. If alteration of present management would not impair the City's operations and benefit the public's enjoyment of the area, then all parties benefit.

COMMENT: We must preserve our most prized resource, water. Allowing development of the Glass Creek ecosystem, around our mountain lakes, or by continuing to fill in our marsh lands such as between Gull Lake and June Lake, or around any lake in the Sierra is a crime of irreversible magnitude. (420)

RESPONSE: Application of Forest-wide Standards and Guidelines for water, riparian zones and soils will avoid irretrievable and irreversible losses to wetland ecosystems on the Forest.

COMMENT: In subsequent years, it should be made a part of the monitoring plan to document the magnitude of stream recovery, the effectiveness of the corrective action, and determine the need for further work. (2190)

RESPONSE: The monitoring plan reflects a program that the Forest can implement.

COMMENT: The Plan and DEIS indicate that new mineral extraction, geothermal energy and hydroelectric power plant development activities may occur. We wish to review and consider issuing waste discharge requirements for any new mining, mineral extraction, geothermal energy or hydroelectric powerplant development activity within our region. (1939)

RESPONSE: Activities which could occur under the Forest Plan are subject to the same regulations as are activities which occur under the current Plan. The need to evaluate the waste discharge potential of proposed projects is

included in these regulations. Normally, communication with the Lahontan Board is the responsibility of the project proponent.

COMMENT: Management Area #14 - Rock Creek/Pine Creek. Under watershed, add: "Monitor the tungsten mine tailings and make sure that they are either removed or stabilized so they will not degrade the water quality or streambanks of Pine Creek."

RESPONSE: The tungsten mine is operated under a special use permit. Before any closure, the permit requires submittal of a shut-down and closure plan for Forest Service approval. The tailing ponds and the issue of water quality would be addressed in such a plan.

COMMENT: Management Area #19. Stress rewatering Cottonwood Creek to improve wildlife habitat. (1616)

RESPONSE: A statement similar to your suggestion was included in the Draft Plan. It has been reworded and is also included in the Final Plan.

COMMENT: Management Area #4 - June Lake Loop, watershed element (Plan IV-96). Current adherence to the June Mountain EPP still allows for "A shutdown of water treatment systems for 30 days or more each year." This is inexcusable and a violation of 36 CFR 219.27(E). The EPP guidelines must be strengthened. (1634)

RESPONSE: The sentence quoted from the municipal watersheds stops short of the projected resolution statement in the following sentence. This section was written in 1984 and since that time the streamflow in Twin Springs has met or exceeded water quality standards. There has not been a violation since 1984.

COMMENT: The Forest Service should exercise its authority to restore the many Eastern Sierra streams that have been altered, diverted and dried up by water development interests. The Forest Service should work together with the California Department of Water Resources to ensure that our streams continue to flow for the enjoyment of all Forest users. (1579) (65, 89, 139, 225, 294, 298, 1160, 1608, 1617, 1629, 1634, 2178)

RESPONSE: Certain aspects of the restoration question will be addressed in the public trust case centered around Mono Lake. The additional streams impacted by past diversions are either legislated by Congress, predate the Forest and the California Division of Water Rights, or have been federally adjudicated. These are beyond the control of the Forest Service and will be dealt with on a case-by-case basis as an opportunity may arise for negotiation with all parties concerned.

WATER

COMMENT: We feel the Inyo should implement the watershed improvement needs at an average rate of 350 acres per year as proposed in the Preferred Alternative. (2179)

RESPONSE: The Forest Service does not have the manpower or funds to obtain this goal. It is a desirable goal but unrealistic. The Preferred Alternative reflects a realistic goal considering manpower, funding and other resource needs.

COMMENT: Plan III-13 proposes to use Best Management Practices in order to meet water quality objectives. According to the Federal Water Quality Control Act, federal agencies must comply with state water standards which require showing more than just BMPs. (2183) (2213)

RESPONSE: Application of BMPs is used to assure the Forest Service complies with state water standards when addressing nonpoint sources of pollution. BMP application does not override state standards.

COMMENT: We strongly urge that the Forest Plan contain a provision for monitoring water quality throughout the Forest with the goal of returning to 100% pure water. (2183)

RESPONSE: Monitoring water quality Forest-wide is not necessarily desirable for the best use of public funds. Forest personnel know where most of the problems are and concentrate on these areas. Returning the water to 100% pure is unrealistic.

COMMENT: A combined analysis of the total project (city, county, state and federal lands) should include identification and quantification of water and other possible resource limitations such as conflicts with wildlife habitat (e.g., deer migration routes), water quality and quantity, and wilderness quality roadless area management. No new ski development should be approved until the Inyo's Final Plan is adopted. (2170) (181, 487, 1617, 1638,)

RESPONSE: Growth inducement and associated impacts identified under each alternative are projections based on the best information available at the time of the analysis. The impacts are assumed and may not actually occur. On a broad scale, the Plan identifies appropriate uses of National Forest lands. However, the decision to allocate resources and lands does not stop at the finalization of the Plan, but will be made on a case-by-case basis. The approval of growth-inducing activities and the associated changes would be based on the site specific and cumulative impact analysis of the project as identified in an environmental document. The fact that current projections suggest such a change, emphasizes the need for detailed analysis at the time of specific project evaluations.

COMMENT: The supply and demand section does not reflect the extensive discussion throughout the DEIS concerning the tremendous impacts suffered by

the water resource and water-dependent resources from water diversions. The consumption of water by other parties outside the Forest's primary zone of influence is in conflict with Forest management activities and mandates (see CFR 219.27(E)). Mention the accompanying desiccation of streams, the destruction of riparian vegetation, the lowering of water tables, major erosion of streambanks, and pervasive stream channel instability caused by these diversions. The public should be informed of the consequences of over-diversion. (2170)

RESPONSE: The affected environment section describes the impacts of past water diversions on the water, riparian and fisheries resources on and off the Forest. The intent to describe non-forest lands was to give a picture of the cumulative impacts that have resulted from past management decisions and emphasize the importance of remaining resources. The Forest does not control nor have authority on the non-federal lands. The Forest and other land management agencies recognize ramifications of management decisions on adjacent lands, and attempts to coordinate management activities to recognize and alleviate off-forest impacts.

COMMENT: Water Quantity. The DEIS, Consequences of the Preferred Alternative, states that the demand for ground and surface waters is projected to be double existing supplies. This is a red-flag situation that needs to be addressed. (1650) (49, 225, 319, 320, 1333, 1432, 1547, 1556, 1576, 1631, 1634, 1795, 1891, 1924, 1981)

RESPONSE: The Forest coordinates with the communities expecting to incur growth as a result of Forest Service activities. It is the intent of the communities and the Forest to have the water supply proven prior to obtaining the go-ahead on development.

COMMENT: The anticipated 5% rise of consumptive water needs over the next 50 years (III-37) seems unrealistically small in light of the anticipated rise of developed recreational use during the same period (III-26). Any discussion in the Plan or DEIS referring to potential increase in water yield on the Forest (e.g. Plan III-36, DEIS III-116), should be qualified by the statement that the RPA goals for water production for 2030 have already been exceeded by more than 100% (Plan IV-13, DEIS III-109). (118, 1631)

RESPONSE: The 5% increase in water use is projected for the Forest Service facilities. Most of the increase in water use is associated with developed recreation increases, particularly ski area development. The local communities, not the Forest Service, will be responsible for supplying the increased demand for domestic needs. The RPA was an estimate made in the late 1970's and was inaccurate at the time of conception. There is little or no opportunity for increase of water yields on this Forest. This is explained in the FEIS.

COMMENT: We suggest altering the statement in the Plan on Page III-36 to read, "There is little, if any, opportunity for additional reservoir capacity

or for increasing water outputs by vegetation management, and no necessity to do so. Fifty year RPA goals for water output are already far exceeded. Further attempts to increase water yield would cause unacceptable levels of environmental damage." (1631)

RESPONSE: The RPA was an estimate made in the late 1970's and was inaccurate at the time of conception. There is little to no opportunity for increase of water yield on this Forest. This is explained in the FEIS. We feel the statement in the Plan is accurate.

COMMENT: Is estimated demand for water to supply ski areas "1200 acre-feet over the next 25 years" as stated in the Plan, or 1200 acre-feet per year over the next 25 years? (1548)

RESPONSE: The correct figure is 1200 acre-feet per year. The FEIS and Final Plan will be corrected.

COMMENT: Additional growth in recreation activities must recognize impacts on the services provided in the Town of Mammoth Lakes. The water provided by the Mammoth County Water District presently comes from just two sources, the surface diversion in Lake Mary and one ground water supply well. During less than 100% normal precipitation years, the District cannot utilize its full constraints and the requirements of various water management agreements. The District has drilled a large number of wells at 10 separate locations around the community, but only one well is producing water of a quantity that can be supplied as a potable domestic supply. We must be permitted to adequately explore the potential ground water resources located under Forest Service lands. The additional development of any recreational activities in the vicinity of Mammoth Lakes is dependent upon that acquisition of additional, economically viable sources of domestic water supply. (1259) (1638)

RESPONSE: The Mammoth County Water District is actively pursuing the exploration of groundwater resources. The Forest Service supports this effort and is cooperating with the MCWD.

COMMENT: The demand for water in June Lake will also likely grow quickly as additional ski area development occurs, and it may be necessary for the Forest to transfer certain water rights to local communities to provide for the local growth generated from Forest activities such as ski area expansion. (1638)

RESPONSE: The Forest Service has worked closely with the June Lake Public Utilities District and assists them in obtaining sufficient water for their present and future needs. The Forest has transferred the right to use water to the JLPUD but will not transfer water rights if Forest Service facilities are being served by this water.

COMMENT: "Satisfy municipal water supply needs after the natural resources needs are met" should be retained in the Final Plan. (2190)

RESPONSE: Language similar to this has been added under Management Areas #8 and #9.

COMMENT: The operating agreement between the Forest Service and the Mammoth County Water District indirectly specifies a total yearly flow of 8991 acre feet, as measured at the flume by old Highway 395. Even though the total yearly flow for the 1984-85 water year was 12,107 acre feet or 72.2% of the 55 year mean, the minimum flows as set forth in the operating agreement were violated several times during the summer of 1985. This would suggest that the summer flows will be below the required minimum when the total yearly flow is less than 72% of the long term mean. The historical record shows that the total yearly flow has been less than 72% of the 55 year mean 22 times (40% of the years) since 1932-33. If the MCWD is successful in developing the ground water in Mammoth Meadow, they could divert water from the creek and thereby decrease the flow at the old 395 flume. This could put the Mono in violation of the operating agreement more frequently than in the past. It is important to maintain the flows in Mammoth Creek during the summer to attract tourists and fishermen to the area. (1547)

RESPONSE: MCWD is cooperating with other government entities on water management in the Mammoth Creek Basin. They are actively seeking additional water supplies by exploring ground water and other surface water resources.

COMMENT: Ground water and surface water resources. Solid waste disposal practices should be discussed and the potential for impacts assessed, including those from any permitted municipal or county sanitary landfills with the National Forest. The statement does not address waste water, sewage, or solid waste disposal. The FEIS should discuss the types and operational efficiency of waste water and sewage disposal facilities in the Forest and assess the potential for impacts from such facilities on the human environment, particularly on ground water and surface water resources. (1576, 487) (181, 1638)

RESPONSE: There are no sanitary landfills on the Forest. The private land base adjacent to the Forest can supply this service. Waste water and sewage is regulated by the State Water Quality Control Board according to the Lahontan Basin Water Quality Plan. Specific environmental impacts associated with sewage and waste water are addressed on a site-specific analysis versus the broad land allocations in the Forest Plan.

COMMENT: Water Quality. The statement in the EIS that bacterial problems are "small and localized" ignores the problem of giardia. While lack of testing precludes designating which waters are not contaminated, it is generally accepted that most Sierra waters are contaminated with giardia and people are well advised to treat all water that does not come out of a faucet. Page IV-147, Paragraph 3 should include the fact that cattle are known to harbor giardia, a waterborne disease which infects humans. (167, 1650) (91, 1248, 1617, 1634, 2170)

RESPONSE: Cattle, horses, dogs, coyote, beaver and humans are all hosts for giardia. All water is recommended for treatment prior to human consumption.

COMMENT: Oppose further water quality degradation in the Mammoth and Hot Creek drainages. Erosion associated with winter sports development is increasing; the sediment load into Mammoth Creek and additional degradation can be expected as more slopes are cleared for development. Erosion control efforts need to be increased if outstanding fisheries resources of the area are to be preserved and standards set by the State Regional Water Quality Control Board are to be met. Cumulative watershed impacts must be evaluated before a new project is permitted. (1248) (91, 139, 167, 278, 281, 1010, 1269, 1650, 1776, 1932, 1939, 2183)

RESPONSE: This comment is incorrect. The water quality off both Mammoth and June Mountains has been improving in the last 5 years and has met waste discharge requirement levels for the last two years. It is the intent of the Forest Service and the ski industry to meet or exceed standards. Refer to the facilities direction for Management Areas #4 and #8 regarding a cumulative effects study for future development.

COMMENT: We are concerned about potential water quality impacts of other types of chemicals which could be used in Forest activities, including fire retardants and fertilizers. (1939)

RESPONSE: Chemicals used by the Forest are subject to OSHA regulations and other federal and state laws regulating their use and application. The Forest will comply with all existing laws and regulations. An environmental analysis will be performed to assess the risk of using the chemicals versus other measures of achieving the goal. The analysis will also document the measures needed to protect water quality and comply with regulations.

COMMENT: Definitions of "consistent" resource damage or abuse and "unacceptable" changes in water quality. These terms should be specifically defined so the Forest Service workers can objectively determine when criteria are not being met. (2170)

RESPONSE: Water quality standards are quantified in the Lahontan Basin Water Quality Control Plan. Forest-wide Standards and Guidelines spell out the standards for management and define the unacceptable resource damage level.

COMMENT: A more detailed evaluation of specific contamination problems is in order. Increased grazing on sensitive stream reaches and meadows, continued illegal ORV use and/or new timber harvest in the Monache area could have significant impacts on water quality. The potential impact of the continued or expanded use of off-road vehicles (ORV) on water quality should be adequately addressed. The use of ORVs in or near surface waters may result in increased erosion and/or sedimentation. (1632, 2178, 1939)

RESPONSE: The Forest Plan is a land allocation document that sets priorities for the Forest in its management. A site specific evaluation is performed on all projects. Timber management and increased grazing in Monache are not proposed in the Plan. Prescription #17 limits motorized vehicle use to existing roads resulting in no new road construction. The Forest has assigned a patrolman in the Monache area to police and manage the OHV use, thereby reducing adverse impacts to water quality.

COMMENT: Analysis of the PRF and CEE Alternatives say nothing about the impacts of grazing on water quality (Page IV-150-151). 9% and 12% increases in grazing will have impacts on water quality which should be discussed. (167)

RESPONSE: The Final Plan maintains grazing at existing levels.

COMMENT: The statement on Page IV-147, Paragraph 3 that "continued grazing will not generally increase sedimentation" is unfounded. Sedimentation will increase with continued grazing, although the sedimentation rate may remain constant. Forest Service should analyze how the sedimentation rate will change under the various alternatives. The statement implies that the sedimentation rate will remain constant under the Preferred Alterative, which is not true, since the Preferred Alternative calls for a 9% increase in grazing. (167)

RESPONSE: The Final Plan maintains grazing at existing levels overall. Any proposed increases in grazing are projected on transitory range and upland vegetation. Implementation of the Preferred Alternative will result in a net decrease in accelerated erosion associated with grazing. Watershed and fish improvement projects will create a net decrease in sediment due to headcut and gully restoration, and overall net movement in riparian resources. These are the key areas for maintenance and improvement of water quality.

COMMENT: Your Plan should be specific for each stream as to how you plan to protect the water quality and the riparian areas from human impacts. (607)

RESPONSE: The Plan was not designed to do this. Individual assessments will be made on each restoration project to determine the best method for protection.

COMMENT: Watershed, Plan III-36. Strengthen this section by stating, "The Forest Service will pursue through negotiation or legal mechanisms the enforcement of water rights for non-consumptive (instream) uses such as fish, wildlife and riparian habitat and visual quality.". It is incorrect to say that "Changes would have to occur legislatively at the state level in order to provide water rights for instream values.". The Forest Service has and should exert its pre-existing riparian and littoral rights. (1617)

RESPONSE: Language with this intent can be found in the watershed elements of most Management Area direction.

WATER

COMMENT: The Scenic Area is tied directly to the upland management areas by way of shared watersheds. Activities at the headwaters - potentials for water diversions, mining, ORV and lumbering - will affect water quality and riparian habitat and environmental relationships dependent upon it downstream. (1608)

RESPONSE: The watersheds as a whole will be analyzed in the water portion of the Mono Basin Scenic Area Plan.

COMMENT: Stress recovering lost resources by returned water to Mill, Parker, Lee Vining and Wilson Creeks. (1616) (88,, 129, 134, 140, 491, 934, 986, 1412, 1608, 1617, 1629, 1632, 1638, 1723, 1952, 2060, 2170)

RESPONSE: This will be addressed in the Mono Basin Scenic Area Plan.

COMMENT: Return the Mono Lake to 1940's average depth. (303)

RESPONSE: This will be addressed in the Mono Basin Scenic Area Plan.

COMMENT: Regarding the Affected Environment discussion on III-52, Mono Basin National Forest Scenic Area, water resources in the Eastern Sierra are precious, finite and already severely impacted by water exports and hydroelectric diversions. Competing uses for the remaining water have stretched available supplies to a dangerous degree. Any proposed new developments, whether industrial (e.g. geothermal) or recreational (e.g. ski development), must be carefully considered in light of the limited supply of water. Increased consumption of water south of the Mono Basin - water that would have gone into the LA aqueduct - could mean increased exports from Mono Basin streams. The Forest Service must thoroughly analyze such projects to ensure that unacceptable consumption of water does not occur. Modify "The Scenic Area is not likely to conflict seriously with activities on adjoining Forest Lands." In fact, it is obvious that the Scenic Area and adjacent Inyo lands are closely interrelated; proximity ensures that adverse impacts on one directly affect the other. (2170)

RESPONSE: This will be addressed in the Mono Basin Scenic Area Plan.

COMMENT: Lee Vining - winter flow depletion should be disallowed. A minimum flow should be established (and enforced) to protect fisheries and riparian areas. (1988)

RESPONSE: This will be addressed in the Mono Basin Scenic Area Plan.

COMMENT: The Forest Service should enforce a policy ensuring a viable lake level, a healthy ecosystem, and natural flow conditions for Mono Basin streams. As it did in the past, the Forest Service should play an active role in making sure of a healthy lake level. In 1979, there was Forest Service participation on the Mono Lake Task Force which helped develop the

recommended plan which would have returned the Lake to the 1970 level of 6388 feet. (2170)

RESPONSE: This will be addressed in the Mono Basin Scenic Area Plan.

COMMENT: DEIS, Affected Environment (S-18). The description of the Mono Lake region should include a brief discussion of water diversions, their past, current and potential impacts to the area's scenic, wildlife, recreational and air quality values. (1617)

RESPONSE: This will be included in the Mono Basin Scenic Area Plan.

COMMENT: Plan IV-119 refers to "rewatering" portions of the Owens River Gorge. The City owns riparian lands along both sides of the Owens River Gorge, as well as the water rights. The Forest Service's concern about "lost resources" has already been addressed by the Hot Creek Agreement, executed more than 4 years ago. The Hot Creek Agreement, entered into between the State and the City of Los Angeles, provides mitigation measures for the dewatering of the Owens River Gorge for power generation purposes. As a natural part of the water diversion projects and the Owens Gorge power project, the City constructed Long Valley Dam, which created Crowley Lake Reservoir. This facility, in addition to the benefits bestowed by the Hot Creek Agreement, more than replaces the fishery in the Owens Gorge. The Plan should also address the question of replacing the energy generating capacity lost to the City should water be returned to the Owens Gorge. (1093)

RESPONSE: The Plan states that it is desirable to rewater the Gorge. If the opportunity arises, the Forest Service is interested in discussing alternatives on this issue.

COMMENT: Plan IV-133 discusses rewatering sections of Big Pine and Division Creeks. The City is legally entitled to divert water from both Big Pine and Division Creeks. The City has a pre-1914 water right to divert from Division Creek for municipal power use, as well as a State Water Resources Control Board licensed application to divert water from Scotty's Spring, a tributary of Division Creek. Big Pine Creek is normally wet below the Department's intake. This creek has not been completely dewatered. The City's hydroelectric facility at Division Creek has the capacity and the right to divert a maximum of 8 cfs, but on a yearly average, only 6 cfs is diverted. (1093)

RESPONSE: Removal of greater than 99% of the water during the 9 month low flow season does constitute nearly dewatering the stream, but we do recognize that Big Pine Creek is wet. The Plan states to negotiate with a goal of recovering lost resources. This implies that there will be discussion with attempts to develop a workable solution. The Forest Service recognizes the City's valid claim to the water.

WILD AND SCENIC RIVERS

COMMENT: We support Fish and Game's proposal that the Forest implement the GAWS methodology for the measurement of stream and channel degradation from grazing or other potential stream disturbances. We encourage the Forest Service to work in cooperation with Fish and Game in the determination of the best monitoring, management and restoration strategy including correction or elimination of the causes of degradation. (1617) (79, 281, 1433, 1608, 1638, 2170)

RESPONSE: We have added a Forest-wide Standard and Guideline under Threatened and Endangered Fish that states the Forest Service will be using a quantitative methodology survey such as GAWS, COWFISH, etc.

COMMENT: Hydrologic analysis should be conducted to determine the most effective means of desirability of streambank stabilization and/or instream structures based upon the hydrologic nature of the stream. We would appreciate an opportunity to participate with Forest personnel in devising a 5-year action plan which will define priority waters to be worked on. (2190)

RESPONSE: Hydrologic analysis is always performed prior to implementation of a watershed or fishery project. The Forest Service has an open door policy on recommendations for restoration activities. We would appreciate any suggestions. The Forest has an existing plan for watershed and fisheries restoration.

COMMENT: It would be helpful to refer to stream habitat by miles instead of or in addition to acres (Page II-57). (2190)

RESPONSE: Both methods are useful and acceptable but we will continue using acres which are derived from stream miles. We are following Regional direction in using acres to provide consistency with other Forest Plans.

COMMENT: The Plan states in several areas that "lost (water) resources" are to be "recovered". This statement implies that the Mono Basin water resources utilized by the City of Los Angeles have not been efficiently utilized, but instead were "lost" to streams in the Mono Basin. The people of Los Angeles depend on the water from the Mono Basin and have efficiently and effectively utilized it since the diversions began in 1941. Consequently, one cannot consider this resource as being "lost". (1093)

RESPONSE: The reference to lost resources refers to the natural resources such as vegetation, wildlife, and fish, not just water.

WILD AND SCENIC RIVERS

COMMENT: Management Area #20 - South Sierra. For Wild and Scenic Rivers, add: "Commitment to protect the riverbank of all classes for 1/4 mile on each side of the rivers." (2170)

RESPONSE: President Reagan signed legislation in November, 1987 that designated 72.5 miles of the South Fork of the Kern River as a Wild and Scenic River. The portion through Monache outside of wilderness is designated as scenic; the portions within wilderness are wild. This legislation requires that a management plan be prepared within three years. That management plan will include direction which will maintain the integrity of the river.

COMMENT: I strongly support the Draft Plan's proposal to recommend wild and scenic river status for the North and South Forks of the Kern River and the Middle Fork of the San Joaquin River. I'm sure that reserving this designation for these waterways will be of great public benefit for generations to come. (1489) (27, 78, 91, 126, 129, 139, 140, 151, 152, 164, 166, 177, 182, 276, 277, 279, 284, 286, 319, 345, 349, 377, 438, 441, 934, 945, 953, 979, 1010, 1029, 1032, 1107, 1108, 1160, 1175, 1177, 1218, 1229, 1230, 1231, 1248, 1253, 1269, 1274, 1280, 1283, 1295, 1317, 1318, 1332, 1346, 1348, 1376, 1398, 1407, 1412, 1414, 1485, 1513, 1519, 1536, 1541, 1549, 1559, 1585, 1586, 1606, 1608, 1616, 1629, 1632, 1656, 1662, 1730, 1738, 1774, 1776, 1784, 1798, 1800, 1804, 1814, 1837, 1843, 1851, 1863, 1868, 1893, 1898, 1901, 1904, 1924, 1926, 1938, 1980, 1982, 1983, 2007, 2030, 2036, 2049, 2053, 2054, 2058, 2103, 2113, 2119, 2142, 2160, 2179, 2183, 2185)

RESPONSE: Actual designation is reserved for Congress. In the case of the North and South Forks of the Kern River, President Reagan signed legislation in November, 1987 that designated portions of these two rivers as Wild and Scenic.

COMMENT: We support management of the South Fork of the Kern River and San Joaquin River without any special designation. (1432) (49, 469, 1258, 1347, 1869, 2017, 2197)

RESPONSE: The Forest Plan protects those portions of the Middle Fork of the San Joaquin River that have been inventoried as a candidate river for potential designation. The South Fork of the Kern River has been designated by President Reagan in November, 1987 as a Wild and Scenic River. The Sierra National Forest is the lead Forest for the San Joaquin River segment. The fact that the Middle Fork of the San Joaquin river is being recommended for Wild and Scenic River status does not necessarily mean that it will be designated. Wild and Scenic River recommendations in the Forest Plan are preliminary administrative recommendations that will receive further review and possible modification by the Chief of the Forest Service, Secretary of Agriculture, and the President of the United States. Final decisions are made by the Congress.

COMMENT: I am opposed to the Wild and Scenic River designation for the South Fork Kern River in Monache. It would be of no benefit and could place restrictions on the Forest Service or Fish and Game. There may come a time that the Forest Service would want to improve the meadow and stream banks by irrigation from the river. If designated as a Wild and Scenic River, turnout

structures could not be built and the irrigation option would not be possible. (1887) (1807)

RESPONSE: The South Fork Kern River through Monache has been designated by President Reagan as a Wild and Scenic River in November, 1987. The portion through Monache is classified as a scenic segment. The management plan for the river and its segments would address the activities that are appropriate. Some activities that may be appropriate for a scenic segment would not be appropriate for a wild segment within wilderness. The following existing Forest Service policy direction on management of Wild and Scenic Rivers would apply to your concerns.

Under range, permit livestock grazing within the designated river area provided it does not substantially interfere with public use or detract from the values which caused the river to be included in the National Wild and Scenic River system. Permit facilities and improvements within a wild river area if they are necessary to support the range activities, provided the area retains a natural appearance and the structures harmonize with the environment.

Under wildlife and fish, the construction of minor structures for such purposes as improvement of fish and game habitat are acceptable in wild river areas provided they do not affect the free-flowing characteristics of the river and harmonize with the surrounding environment.

Under water, undertake watershed improvements where deteriorated soil or hydrologic conditions create a threat to the values for which the river is managed...or where such conditions could cause serious depreciation of important environmental quality outside the river area.

Permit the construction of water bars, drainage ditches, flow measurement devices, and other minor structures or management practices when necessary for protection, conservation, rehabilitation, or enhancement of the river area resources. They must be compatible with the classification of the river area and harmonize with the surrounding environment. They must not pose a direct and adverse impact on the river values.

Address the need for retaining and maintaining existing water diversions, ditches, and water management devices. If retention is part of a valid existing right or in the interest of good river management, prescribe maintenance standards in the management plan.

COMMENT: We recommend that full disclosure of the economic and cultural consequences of addition of these rivers to the Wild and Scenic River systems be made public before approval of the Final Plan. (181)

RESPONSE: See previous comments relating to the South and North Forks of the Kern River. The South and North Forks of the Kern River were designated by Congress. The economic and cultural information for the Middle Fork San Joaquin River are given in EIS Appendix E for both the Inyo and Sierra National Forests. Congress has the responsibility for designation of wild and scenic rivers, and should Congress decide to pursue the recommendations

of the Middle Fork San Joaquin River EIS, there will be formal hearings on the proposal. At that time there will be a chance for additional public input.

In the case of the Middle Fork of the San Joaquin River, the Sierra National Forest has the lead role in assessing the River and recommending its future management in their Forest Plan. The cultural and economic effects of the proposal will be documented in that Forest Plan. The Inyo National Forest will follow the Sierra's lead in making Forest Plan recommendations for future management of that river.

COMMENT: We are concerned that in those segments of the South Fork Kern River within the Inyo National Forest, the DEIS indicates that the maintenance of the current grazing levels could have adverse effects on stream qualities. However, there is no proposal to eliminate this grazing impact if the river is designated. We recommend exploring this alternative. The same would apply to Segment 3 with respect to continued ORV use, particularly stream crossings. Again, the DEIS should discuss possible elimination of this impact. (487)

RESPONSE: The South Fork of the Kern River has been designated a Wild and Scenic River. Grazing and ORV use will be addressed in the Wild and Scenic River Management Plan which must be developed within three years.

COMMENT: With respect to the Middle Fork of the San Joaquin River, the portion of the river that flows through Devil's Postpile National Monument should be considered concurrently with the Forest portion for designation. We recommend that the Forest have the lead in any necessary study or draft legislation to effect this designation; the Sequoia and Kings Canyon National Parks staff will be happy to assist at your request. Based on a preliminary review of the river segment contained in the Monument, the classification would be as follows: North Monument boundary to a point about 100 yards below the Visitor Center should be scenic; and from 100 yards below the Visitor Center to the South Monument boundary should be wild. (487)

RESPONSE: The Sierra National Forest has the lead responsibility for recommending this river for Wild and Scenic status in their Forest Plan. They have coordinated their proposal with the Inyo National Forest and Sequoia and Kings Canyon National Parks which administer Devil's Postpile National Monument. The recommendation in the Sierra's Forest Plan would designate the portion of the river flowing through Devil's Postpile National Monument as scenic. The scenic portion would be 2.5 miles long and stretch between the Soda Springs footbridge downstream to Rainbow Falls.

COMMENT: On behalf of the Board of Supervisors, we would like to go on record as being opposed to any designation of the North or South Forks of the Kern River under the Wild and Scenic River Act. (137)

RESPONSE: President Reagan signed the law in November 1987 that designates portions of both rivers as part of the Wild and Scenic River system.

WILDERNESS

COMMENT: Designation of any portions of the North Fork Kern outside of wilderness areas will prohibit future major water improvement projects from being constructed on the river. Although construction of the Elephant Knob Reservoir has been determined to be infeasible at this time, it is inappropriate to preclude construction of this and other such water projects in the future. (137)

RESPONSE: President Reagan signed a law designating a portion of the North Fork of the Kern River as a Wild and Scenic River which would preclude major water improvement projects.

COMMENT: We respectfully request segments under the Wild and Scenic River Act be subject to the public hearing process, in order that you may know the voice of the people you represent on this sensitive issue. (137)

RESPONSE: If Congress decides to pursue Wild and Scenic River status for any of the proposed rivers, there would be formal public hearings to accept input from the public.

COMMENT: Geothermal development and road construction and logging along the South Fork of the Kern River at Monache Meadows should be prohibited; golden trout should be restored to this river. (944)

RESPONSE: Geothermal development was considered and rejected in an environmental analysis for the Monache area. The Forest Plan does not propose logging in this area. Any attempt to restore golden trout to this area would need to be initiated by the California Department of Fish and Game.

WILDERNESS

COMMENT: The major goal of the Inyo Plan should be to preserve wilderness. I am of the firm belief that the value of the land saved from development of any kind will be worth far more in the future in a multitude of unpriceable ways than the monetary gains of todays development can ever bring. It is folly to destroy that which we consider most prized, most desirable, and most spiritually uplifting, only to learn several years down the road that we sold our most treasured heritage for a lot of push and shove from self interests. I go on record for maintaining and preserving the natural integrity of the Inyo Forest lands, and for the reversal of any existing developments in this region other than those for the sole purpose of strict land maintenance. All wildlife, botanical, fisheries, watersheds, lakes and rivers should be protected to the maximum degree possible and the wilderness areas should be used only for purposes of research, observation and low impact pedestrian appreciation. (324, 1532) (65, 89, 106, 170, 225, 322, 328, 331, 337, 1771, 2053, 2129, 2143, 2162)

RESPONSE: The Plan is recommending approximately 60,000 additional acres in the White Mountains for wilderness designation. Each wilderness is managed

according to its own wilderness management plan under the overall direction of the Wilderness Act of 1964 and the California Wilderness Act of 1984.

COMMENT: My most serious concerns are that more land should have been proposed for wilderness designation and there should be less emphasis on ORV use of the Forest. (5)

RESPONSE: The Final Plan recommends approximately 60,000 additional acres for wilderness, primarily in the White Mountains. The Forest Plan does not emphasize ORV use of the Forest, but rather reaffirms the Forest's commitment to the existing 1977 Interagency Motor Vehicle Use Plan. Direction in the Standards and Guidelines is consistent with present policy.

COMMENT: The Preferred Alternative doesn't recommend as much land for wilderness designation as the CEE Alternative. That indicates that you sacrificed public net value in the Preferred Alternative to maintain more management flexibility. Wilderness designation is obviously economically efficient on 339.8 additional acres of Inyo NF. The amenity values of wilderness far surpass any economic values. This provides a good argument to add significantly to the lands proposed for wilderness designation in PRF. I am hopeful that you will come up with a plan that increases proposed wilderness by about 250,000 acres over PRF and that you will eliminate or drastically reduce acreages of open ORV lands. (5) (69, 315, 483, 923, 995, 1006, 1014, 1021, 1274, 1490, 1524, 1632)

RESPONSE: The Final Plan recommends 172,600 acres for wilderness designation which is approximately a 60,000 acre increase over the Draft Preferred Alternative. This increase is primarily in the White Mountains. Prescription #18 which has been retitled Multiple Resource Area states that no additional acreage is recommended for the "open" category, which is defined on the 1977 Motor Vehicle Use Map as an area where no restrictions apply to OHVs. The Final Plan recommends the Poleta Canyon area as the only open OHV area.

COMMENT: I support the maintenance of the integrity of the Sierra Crest from the Minaret Summit to the San Joaquin Mountain-Carson Peak area including the maintenance of the small isolated fir forest area at the Hartley Springs, Deadman and Glass Creek areas. (2211)

RESPONSE: See the Management Area #4 discussion in Chapter IV. Stands of red fir west of U.S. 395 will not be harvested.

COMMENT: There is no conflict between wilderness and RNA status as the Appendix C discussion suggests. (2152)

RESPONSE: The statement is "Wilderness management could conflict with the management objectives of such research natural areas." The Wilderness Act states that wilderness is set aside for such things as recreation and scientific use. Recreation use in RNAs is discouraged although not

necessarily prohibited. Activities such as camping may be prohibited; the main thrust of RNAs is not for recreational use, but for scientific studies. Where two conflicting objectives occur in an area managed under two designations such as wilderness and research natural area status, the more stringent guidelines prevail.

COMMENT: For Management Prescription #1 - Designated Wilderness, I would like to modify the seventh recreation directive to allow for wood to be carried in or packed in to areas that are closed to wood fires. Wood fires should be allowed in areas short of wood if the wood is hauled in. Areas above 10,000 feet should not have to be banned from no fires. All new informational handouts should include proper instructions for fire building. Don't use rocks in a circle for your campfire. Don't blacken rocks by fire for any reason or use. The old Boy Scout techniques for fire building need to be discouraged. (1005, 1645, 185) (156, 172, 173, 178, 179, 1645, 2170)

RESPONSE: The Forest is addressing this request outside of the Forest planning process. A test area has been designated in a location where campfires are prohibited. The results of the test will determine if this concept can be continued and/or applied to other areas of fuelwood shortage. It would be premature to establish direction in the Forest Plan at this time.

Recreation direction for Prescription #1 states "emphasize minimum impact camping techniques when interacting with wilderness users or developing informational handouts." Minimum impact techniques include proper location of fire rings, size of fire, restoration of site, and use of existing fire rings as opposed to building new ones.

COMMENT: Prohibit all campfires in wilderness areas. The use of snags and deadfalls near timberline has been disastrous ecologically speaking. (1781)

RESPONSE: For many people, campfires are an important part of their wilderness experience. Forest orders are presently in effect prohibiting campfires in areas with sparse vegetation and within 300 feet of lakes. New orders will be put in effect where resource problems develop.

COMMENT: Coordinate with the National Park Service to develop a consistent no campfire policy above 9-10,000 feet for all wilderness areas within the Sierra Nevada. I recommend that we develop a Forest-wide plan to restrict/prohibit campfires on an elevation basis as the Sequoia-Kings Canyon Parks have. The Eastern Sierra does not provide sufficient fuel to continue allowing campfires without risking serious resource damage. I oppose any proposal which would allow commercial packers to build campfires in closed areas, not even if firewood were packed in and firepans were used. (1099, 1252)

RESPONSE: The Forest has carefully considered the course of action to pursue in relation to campfire prohibitions in areas of scarce firewood. There are many areas above the 9-10,000 foot elevation that have plentiful supplies of firewood. The scarce areas generally relate to heavily used trail corridors

and popular camping areas. An elevational closure does not recognize these differences, and, while protecting some areas, leaves the Forest Service in an awkward position when trying to defend campfire restrictions in areas of plentiful firewood. In some areas that are heavily used, the Forest has prohibited campfires.

The Forest meets annually with both adjacent National Parks and Forests in an effort to coordinate our management direction of wilderness. To date we have not been able to standardize our management of areas with scarce fuelwood with the Parks, but the Forests generally subscribe to specific area restrictions.

COMMENT: Write natural fire management plans for all wilderness areas. Assess the need for helicopter entry to suppress lightning caused fires in wilderness. (1099) (2170)

RESPONSE: Management Prescription #1 - Designated Wilderness lists direction for fire management under protection. The decision on use of a helicopter in fire suppression in wilderness considers many factors. Such things as fuel type, slope, aspect, predicted fire weather, existing fire activity, and availability of personnel are all factors which have a bearing on whether or not to use a helicopter. The decision is made on a case-by-case basis. If suppression of a fire can be accomplished by primitive means, that would be the course of action the Forest would follow.

The approved wilderness management plans are incorporated into the Forest Plan with amendments as necessary. Direction is present in the existing plans to develop natural fire management plans which would allow lightning fires to burn. Direction under Standards and Guidelines in the Forest Plan would allow use of the confinement or containment strategies in relation to lightning fires within certain guidelines.

COMMENT: It is stated that without timber harvesting in the Monache area, recreational use of the South Sierra and Golden Trout Wilderness areas will increase at a much slower rate, but since it is predicted that these areas will be used to capacity by the fifth decade, why should increased recreational use be encouraged? (2160)

RESPONSE: Increased recreational use would only be encouraged to the limit of the area to accommodate use. When the Golden Trout and South Sierra areas are considered to be fully utilized, they will be managed through quota systems, if necessary, to maintain an acceptable level of use as determined by resource capability.

COMMENT: Why not consider signs similar to those used in the Yosemite wilderness? If a sign blends into the environment, it can't be seen, so why put it up? (1645)

WILDERNESS

RESPONSE: We have reworded one of the Standards and Guidelines for facilities in Prescription #1 - Designated Wilderness in response to your concern.

COMMENT: It is not true that wilderness designation "irretrievably removes affected lands from most kinds of commodity production and from management activities that would alter natural ecological processes." The land remains intact, and the designation can be changed by an act of Congress. The statement here is wrong and should be removed from this section. (2160)

RESPONSE: The word "irretrievable commitments" is defined in the glossary. The definition states "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 committed to another use such as skiing or wilderness. The production lost is irretrievable, but the action is not irreversible." The commodity production lost while the land is classified wilderness is irretrievable, but the designation of wilderness is not irreversible.

COMMENT: Add a fourth Standard and Guideline for wilderness that limits commercial use of wilderness areas to 5% of total use as stated in the Minarets Wilderness Plan. (225)

RESPONSE: A management plan is prepared or revised for each wilderness which gives specific direction for that wilderness. Some wildernesses may be able to withstand higher levels of commercial use than others. The wilderness management plan will set this level.

COMMENT: Fences should not be a part of the wilderness scene. (1376)

RESPONSE: New fences are generally not permitted within wilderness areas. Existing fences may be left within a newly designated wilderness as a result of legislative wording allowing existing uses including grazing. New fences are occasionally permitted.

COMMENT: Management Area #20 - South Sierra. In the second paragraph under recreation, replace "reconstruction....." with "no reconstruction of 4WD and bike trails if such trails have been used as hiking trails." In the fourth paragraph, replace "construction...." with "no new construction of 4WD and bike trails except for very short distances to connect dead-ends at wilderness boundaries." Add: "Vehicle damage in existing wilderness will be repaired." (2170)

RESPONSE: The environmental assessment dealing with OHV use in Monache is the governing document that will spell out what activities would take place in relation to OHV route reconstruction and construction. No hiking trails are scheduled for any reconstruction activity in the Monache area under the Green Sticker grant program. Because some hikers use existing OHV routes such as 4WD routes or bike trails does not mean they are hiking trails.

Hiking trails are trails where motorized vehicles are prohibited. New construction of 4WD or bike trails may take place to connect dead-end routes. The environmental analysis will specify where these would be. The process of determining this is outside the scope of the Forest planning process. Management direction for areas inside wilderness is covered under Prescription #1. Direction for management of wilderness is contained in the wilderness management plan for each wilderness. These become part of the Forest Plan. Any damage resulting from unauthorized vehicle trespass in wilderness would be repaired according to direction in respective wilderness management plans.

COMMENT: At the Sierra roadheads, like Whitney Portal, South Lake, and North Lake, I would recommend moving them down the road five to ten miles to reduce impact on the wilderness. (384)

RESPONSE: The impact on wilderness is measured directly in terms of crowding, resource impacts, and visual and auditory impacts. Management Prescription #1 - Designated Wilderness outlines direction to reduce or eliminate impacts to wilderness. This direction includes the possibility of implementing entry limits, establishing restricted use seasons when these entry limits would apply, redirecting or restricting use as necessary to restore impaired wilderness resources, limiting party size, or limiting the number of stock in a party.

Most of the trailheads on the Inyo National Forest also have developed campgrounds and picnic areas associated with them. It would not be desirable to move existing trailhead parking down the road away from these sites since most drainages do not have room to develop new parking areas. Most wilderness users are shuttled to the trailhead when crowded parking conditions force use of alternative sites.

COMMENT: I am opposed to new and/or improved trailheads at wilderness boundaries. Keep them primitive. Overnight camping at all wilderness trailheads must be restricted to short stays. (381)

RESPONSE: Any reconstruction or construction of trailhead facilities would be analyzed according the National Environmental Policy Act (NEPA). The analysis would take into consideration the scale of development, how it fits in with the surrounding environment and any adjacent developed facilities, and the type of facilities to meet the needs of the public. Trailheads are not campgrounds although overnight stays are usually permitted if not in conflict with other facilities. Where campgrounds are available, overnight stays are normally restricted to the campground which usually has a maximum length of stay of seven days. Some campgrounds at trailheads have a one night stay limit.

COMMENT: The Plan should state explicitly that wildlife needs are to take precedence over livestock needs. In the Golden Trout Wilderness, cattle grazing should be severely limited to protect wildlife. (1843, 1489) (65, 2170)

WILDERNESS

RESPONSE: Grazing of livestock in wilderness is governed by Forest Service Manual (FSM) 2323.2. The objective is to "manage wilderness range in a manner that utilizes the forage resource in accordance with established wilderness objectives (36 CFR 293.7). Section 4(D)(4)(2) of the Wilderness Act states: "The grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture."

FSM 2323.22 further states: "Apply Congressional guidelines and policies regarding grazing in National Forest wilderness areas (Sec. 108, P.L. 96-560, H.R. Report 96-617 dated 11/14/79), in a practical, reasonable, and uniform manner in all National Forest wildernesses". The Congressional guidelines state in part: "The legislative history of this language is very clear in its intent that livestock grazing and activities and the necessary facilities to support a livestock grazing program will be permitted to continue in National Forest wilderness areas, when such grazing was established prior to classification of an area as wilderness.... To clarify any lingering doubts, the committee wishes to stress that this language means that there shall be no curtailment of grazing permits or privileges in an area simply because it is designated as wilderness."

The committee guidelines continue in part saying "It is anticipated that the numbers of livestock permitted to graze in wilderness would remain at the approximate levels existing at the time an area enters the wilderness system. If land management plans reveal conclusively that increased livestock numbers or animal unit months (AUMs) could be made available with no adverse impact to wilderness values such as plant communities, primitive recreation, and wildlife populations or habitat, some increases in AUMs may be permissible. This is not to imply, however, that wilderness lends itself to AUM or livestock increases and construction of substantial new facilities that might be appropriate for intensive grazing management in non-wilderness areas."

Grazing must be managed under these guidelines, and even though the guidelines do not say that wildlife needs will be superior to livestock needs, neither do they say that they will be subordinate to the same. Wilderness values will predominate.

COMMENT: The following should be banned in wilderness areas: cows, sheep, horses, mules, llamas, burros, dogs, other pets, wood fires, the suppression of naturally ignited fire, drift fences, and any other improvements. Wood fires should be prohibited in all wilderness in the high Sierra due to heavy human utilization of wood and the ecological imbalance that has resulted. (1634, 492) (140, 151, 266, 934, 1602)

RESPONSE: Section 4(D)(4)(2) of the Wilderness Act states: "The grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture. Also refer to the above response.

Section 4(D)(6) states: "Commercial services may be performed within the wilderness areas designated by this Act to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas." Horses, mules, llamas, and burros are used by commercial outfitters and private parties in recreational use of the wilderness and are not denied access by the Wilderness Act. In some areas, stock is prohibited due to unsafe conditions or for resource protection.

The Wilderness Act also states in part "...except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act,...there shall be...no structure or installation within any such area." Drift fences and other improvements which are necessary for administration of the area such as proper grazing of livestock or pack stock would be permitted under this Act if they are the minimum facilities necessary.

No place in the Act or subsequent acts is it mentioned that dogs or pets are to be excluded. In certain areas, such as the California mountain sheep zoological area which is partly in wilderness, there may be additional restrictions pertaining to dogs or pets. These are covered by specific Forest orders authorized by the Forest Supervisor.

Wood fires are not prohibited by the Wilderness Act, but specific area restrictions on campfires are in effect under Forest Supervisor authority. Recreation direction in Prescription #1 - Designated Wilderness states "Prohibit wood fires in areas that are environmentally sensitive or short of wood." Under the protection element for Prescription #1, direction is outlined for suppression strategies for lightning-caused fires. If the fire meets the predetermined criteria, it may be allowed to burn under the confinement or containment strategies. Man-caused fires will be suppressed.

COMMENT: Fire suppression in the wilderness should be avoided although there may well have to be some adjustments to this policy to make up for past misguided fire suppression policies. (1631)

RESPONSE: Prescription #1 - Designated Wilderness. Under protection, we state "Use the fire suppression strategies of confinement, containment, or control..." Confinement or containment would let naturally occurring fires continue to burn if they meet the fire prescription directions. This would help return fire to its natural role in wilderness. Any man-caused fires would be suppressed.

COMMENT: Aerial stocking should not be allowed in wilderness. (1634)

RESPONSE: The Wilderness Act of 1964 states that "within wilderness areas designated by this Act, the use of aircraft or motorboats, where these uses have already become established, may be permitted to continue...". Forest Service Manual 2323.34 states that "Stocking shall normally be done by primitive means; however, Regional Foresters may permit dropping of fish from aircraft for those waters where this practice was established before the area

was designated a wilderness. Conduct aerial stocking pre- or post-visitor seasons."

COMMENT: I'd like to stress the importance of your wilderness ranger program. Undoubtedly your proposal for increased education of backcountry users will help in reducing the human impacts there, but I feel that a very cost-effective method of mitigating and controlling impacts would be the addition of more backcountry wilderness rangers. On our Sierra Club clean-up trip last year at Thousand Island Lake, we noticed a definite need for the presence of more rangers, primarily for education, but also for enforcement. (1107) (1539, 1843)

RESPONSE: We have added the following direction to Prescription #1 - Designated Wilderness: "Emphasize the number of wilderness rangers on-the-ground during the restricted season in heavily used, popular areas to maximize the face-to-face contact with the wilderness user."

COMMENT: Charging fees for wilderness permits or reservations is a bad idea. You could solve the overuse problem by constructing trails to some of the seldom used areas. A better system needs to be developed for obtaining permits to hike and camp in wilderness areas. I don't want to be prohibited from going, and I don't want to pay more than $5 to go on a hike. (2124, 1539) (2178)

RESPONSE: There is no authority at the present time to charge for wilderness permits. We do have the authority to charge a fee to recover costs of a reservation system. During times of reduced budgets, it is necessary to recover costs of managing a reservation system or it would not be possible to provide this service. Response from the public indicates that this service is desirable, and the user is willing to pay for it.

The present system of obtaining wilderness permits has been developed over a number of years and has been accepted by almost all the users. Personal pickup of reserved permits is necessary to allow for those people who do not show up. To do otherwise would be to systematically undersubscribe the wilderness capacity. Some permits are always available on a first come basis for those people who cannot plan their trip in advance. However, when quotas for a trailhead are full, the line must be drawn so that those people who do have permits are reasonably sure to have the opportunity for solitude and a wilderness experience.

COMMENT: The management of airfields should be more specifically or concretely described, especially the plans for the fields in Tunnel Meadows. (382)

RESPONSE: We have revised the Final Plan to reflect that the Inyo National Forest does not have any airfields/airstrips under special use permit. The special use permit for the airstrip at Tunnel Meadows expired and the airstrip has been closed and restored to a natural condition.

COMMENT: Although the issue of snow survey cabins in designated wilderness is discussed, there is nothing about automatic snow surveying instruments (snow pillows), the associated solar panels for power, and the data transmission antennas. Also there is the similar problem or potential problem of automatic seismographs in the wilderness. Need to establish and publish a position about the use and presence of such instruments in the wilderness. (382)

RESPONSE: We have added a facilities directive for Prescription #1 - *Designated Wilderness that addresses your concern.*

COMMENT: The high Sierra trails can support at least five times as many backpackers as are currently being admitted. The only significant impact caused by larger numbers would be the disappearance of firewood, so prohibit wood fires in scarce areas. Fishing limits could also be imposed. Currently about 25 backpackers a day are admitted to major basins which could easily accommodate 125 without crowding (the word crowding in such large areas is laughable). (1)

Another respondent commented: "I feel that quotas are too high for the wilderness areas." (1602)

RESPONSE: Management direction for Prescription #1 - Designated Wilderness directs the Forest to manage use to capacity using trailhead quotas. The number of people in an "area" does not equal the quota for the trail since the average length of stay is longer than one night and people accumulate in the "area" from other areas. Large numbers of people reduce the opportunities for solitude, create more encounters on the trail, etc. Even though the areas are large, people tend to congregate around the more desirable campsites near water. The Forest attempts to disperse the users, but short of applying internal controls, the people will disperse themselves according to their personal preferences. Certain areas where firewood is scarce are closed to fires.

The State Department of Fish and Game is responsible for setting limits on the number of fish. That authority is outside the Forest Plan.

COMMENT: Question whether or not wilderness management plans are necessary when considering the management direction that is given in Prescription #1. Operation plans and maintenance plans would be more appropriate. (29)

RESPONSE: Direction in the Forest Plan under Standards and Guidelines and Management Prescriptions is broad and applies to all wildernesses. Direction in individual wilderness management plans is specific to that wilderness. The plans are similar to operation and/or maintenance plans. Even though some direction may be standard for all wildernesses, most will be specific to a particular wilderness.

WILDERNESS

COMMENT: The trails in this area over the passes, especially Sawmill, Shepherd, Taboose, and Baxter should be brought up to standard. This area is used by equestrians, but it is extremely difficult to explore any new areas of Sequoia-Kings Canyon due to poor or non-existent trail maintenance. I do not feel that it is fair to deny access to this area to equestrian users due to poor trail maintenance. Proper signs are also important for the area. (1260) (156, 169, 185, 296, 1261, 1929, 2193)

RESPONSE: Many trails on the Forest are in need of reconstruction. These trails are prioritized, but our ability to accomplish the work is dependent on funding. The process for selecting these trails is outside the scope of the Forest Plan. Sawmill Pass Trail is presently accessible to stock; Shepherd Pass Trail is on the Forest's list for reconstruction. Baxter Pass Trail is not classified for stock use in the Park. It would not be prudent for the Forest to bring the east side of the trail up to a standard accessible to stock when the west side of the pass is not. The same holds true for Taboose Pass. If the Park decides to maintain these trails for stock use, then the Forest would put these trails back into the process of prioritization for reconstruction. Signing in wilderness is covered in approved management plans and calls for only that which is necessary for progressive travel. It does not include signing of place names or the placing of mileage on signs within wilderness.

COMMENT: Include mileage on signs. (1261)

RESPONSE: Direction for Management Prescription #1 - Designated Wilderness, under facilities, directs the Forest to sign only as needed for progressive travel. The Forest Plan also incorporates direction in the approved wilderness management plans which calls for directional signing only. Signs at trailheads which are outside wilderness may have mileages. The absence of mileages on signs within wilderness is to enable wilderness travelers to rely more on map skills.

COMMENT: In wilderness areas, recreational use of horses that graze should have priority over cattle. The Plan needs to make sure that recreational horse users have rights to grazing. (1261)

RESPONSE: We have added direction to the range element for Prescription #1 - Designated Wilderness that addresses your concern.

COMMENT: There is no need for new trails in wilderness. Heavy trail use has been especially damaging to meadows. (1634)

RESPONSE: Management direction under Prescription #1 - Designated Wilderness under facilities is to "Manage the trail system as determined in the management plan for each wilderness. Maintain trails to assigned maintenance levels." One of the assumptions in the approved John Muir Wilderness Management Plan, for example, is that the present trail system is generally adequate in length. That means that new trails are not needed. However, old trails need periodic reconstruction, and that would include rerouting around

COMMENT: I think you should add more wilderness than you currently plan. You are compressing true wilderness value into an artificial definition by humans that wilderness be necessarily spectacular or encompass a given amount of a defined ecological system. Wilderness value for the wilderness and not just humans can encompass pure bulk of dubious terrain in addition to unique and spectacular terrain. Wildlife doesn't judge by scenery, neither do ecological systems. (65)

RESPONSE: The Final Plan recommends approximately 172,600 acres for wilderness designation which is about a 60,000 acre increase over the Draft Plan. Many wilderness values exist without benefit of formal designation.

COMMENT: We would urge that all 962,697 acres of roadless lands within the Inyo National Forest be granted wilderness status; this includes "released" lands as well as further planning areas and would bring the total wilderness acreage to 1,527,329 acres. In preserving this most significant amount of acreage, priority should be given to the White-Inyo Wilderness complex where 535,401 acres are Inyo National Forest land which adjoins BLM wilderness study areas. Priority should also be given to our proposed 130,000 acre Glass Mountain Wilderness/Wilderness Recovery Area and to the 21,214 acre San Joaquin Roadless Area. In addition there are some 250,000 acres within the Inyo which should be designated as wilderness recovery areas. Roads into these areas should be closed and all practices that conflict with future wilderness designation should be terminated. (2101) (66, 123, 140, 166, 171, 214, 279, 298, 311, 320, 331, 438, 450, 978, 1009, 1218, 1358, 1759, 1781, 1865, 1928, 2015, 2019, 2091, 2152, 2188)

RESPONSE: Congress has mandated that National Forest System lands be managed for multiple uses. The Final Plan recommends approximately 172,600 for addition to the wilderness system. Refer to Appendix C for evaluation of the Further Planning Areas for possible wilderness designation. The released roadless areas have not been considered for wilderness designation during this planning period. Refer to the Management Area containing specific roadless areas to determine the Management Prescription under which they will be managed.

COMMENT: I feel we have more than enough wilderness and object to any further land being designated as such. The area west of the Sentinel Meadow Research Natural Area could be excluded. We hope that the Forest Service will continue to provide for multiple use of the Forest rather than placing any further areas in the "wilderness" designation where only the very select few have the opportunity to enjoy them. (983, 1640) (31, 183, 257, 330, 335, 347, 357, 469, 988, 998, 1151, 1254, 1347, 1349, 1386, 1429, 1432, 1590, 1869, 1959, 2017, 2179)

RESPONSE: The Forest Service is mandated to provide for a wide range of uses on National Forests. These include recreation, range, timber, wildlife, water and wilderness. Energy and minerals are other important resources of the Forest. The Plan recommends that 172,600 acres on the Forest be designated as wilderness. This recommendation is based on the environmental analysis of the

areas and information received from the public. The determination was that wilderness is the most appropriate use on these areas.

Approximately 576,500 acres in Further Planning Areas were evaluated in this planning process. The remaining 403,400 acres will be managed for multiple use.

COMMENT: I would urge the Forest Service to compromise and find additional parcels of up to 5,000 acres to classify as wilderness, or as Special Interest Areas, particularly in the larger further planning areas in the White and Inyo Mountains. In the White Mountains, it should be possible to find several Special Interest Areas in addition to McAfee Meadow. (952) (76)

RESPONSE: The Inyo Forest has provided Research Natural Areas such as McAfee Meadows as part of a nation-wide system of botanical targets. The California Region is developing a target system for geologic and aquatic Special Interest Areas. When the system is completed, it is anticipated that the Inyo National Forest will be selected to provide a significant number of Special Interest Areas. Approximately 60,000 additional acres are proposed for wilderness designation in the Final Plan, primarily in the White Mountains.

COMMENT: We question the determination of "quality" of wilderness areas. The ratings of roadless areas were part of the RARE II lawsuit which led to the finding against the Forest Service. Judge Karlton noted that "the Wilderness Act does not speak in terms of comparative ratings, but in terms of intrinsic wilderness values. As noted, all RARE II areas meet minimum criteria of the Widlerness Act." Judge Karlton also noted that under the Forest Service wilderness quality ratings, "one can hypothesize how the Grand Canyon might be rated: canyon with river, little vegetation." (2160)

RESPONSE: We believe the term "quality" is not used in the same vernacular as objected to by Judge Karlton. Wilderness quality ratings were not used in the decision making process.

COMMENT: Management Prescription #2 - Proposed Wilderness. Replace the lands component to place a high priority on acquisition of private lands through Land and Water Conservation Fund appropriations. (2169)

RESPONSE: Acquisition of lands within wilderness and proposed wilderness areas is given a high priority whether it is by exchange, donation or purchase. Public acquisition is controlled by the landowner's willingness to exchange or sell.

COMMENT: The designation of areas as Mule Deer or Bighorn Sheep Management Prescriptions should not invalidate the areas as wilderness if they are in a relatively undisturbed condition. (140)

RESPONSE: In the hierarchy of the planning process, wilderness designation would invalidate the application of the Mule Deer Prescription or the Mountain

Sheep Prescription. The area would be managed under Prescription #1 - Designated Wilderness.

COMMENT: A statement is made on Plan III-62 that limits placed on wilderness use have not resulted in more demand for non-motorized primitive recreation in non-wilderness areas in the Inyo National Forest. Since wilderness permits are not required for visitors to these roadless areas, what evidence exists to support this claim? (2160)

RESPONSE: Personal observations by Forest managers and on-the-ground contact with Forest users support this statement.

COMMENT: The AMN Alternative is eliminated from detailed study without adequate reason. This is the only alternative which would recommend all further planning roadless areas for wilderness designation. It is stated that this alternative would not respond to the management concern that all recommended wilderness meet basic criteria for suitability and manageability under wilderness designation. Congress is the place where this assessment is properly made. Also, concerns about the cost of keeping areas wild are minimal as compared with development costs. It is admitted that current outputs could be maintained over the first five decades under this scenario; we trust that Congress would make the final determination on these roadless areas in the next half-century, allowing the Forest Service to modify their Plan for needs of non-wilderness uses. (2160)

RESPONSE: Please refer to Appendix C (Further Planning Area Description and Evaluation) and to Appendix D (Roadless Area Allocations) in the EIS Appendix. These appendices describe how these areas will be managed during the planning period.

COMMENT: Management Area #8 - Mammoth Escarpment. Designate all potential alpine ski areas as wilderness. This includes the Sherwin Bowl, White Wing, Minaret, Knolls and San Joaquin Ridge. Also designate Crystal Crag, Mammoth Rock, and the Sherwin and Laurel Creek drainage (all proposed for management under Prescription #17 in the Preferred Alternative), and the area east of Sherwin Creek (Prescription #4 in the Preferred Alternative) as wilderness. The San Joaquin Roadless Area should be added to the Ansel Adams Wilderness. Proposed wilderness south of the Town of Mammoth Lakes should be added to the John Muir Wilderness. (140) (1904)

RESPONSE: Refer to Management Area #8 in the Final Plan for a map and management direction for this area.

COMMENT: We propose that the Reversed Peak area be designated a Wilderness Recovery Area. Close all access roads but allow existing trails to remain. Build no new trails. (140)

WILDERNESS

RESPONSE: This area will be managed under Prescription #9 - Uneven Aged Timber Management in the Final Plan. It was proposed for management under Prescription #10 - High Level Timber Management in the Draft Plan.

COMMENT: The Robinson Lake area near Onion Valley should be studied for wilderness in your next revision of the Forest Plan. (1539)

RESPONSE: There are no management activities planned during this planning period that would change the wilderness attributes of the area. Therefore, it would be eligible for consideration for wilderness when the Plan is revised.

COMMENT: Further Planning Areas. Your first paragraph on DEIS S-24 that discusses wilderness or non-wilderness is misleading. "Released areas" can continue to be managed in the planning period to retain their roadless character and must be reconsidered for possible wilderness recommendation at the end of the first planning cycle. (1634)

RESPONSE: The Plan sets the direction for management for the next 10 - 15 years. The Forest is mandated to review and revise the Plan at the end of this period. For this planning period, all roadless areas have been analyzed and will be managed under a variety of prescriptions. Refer to the Management Area maps for specific Management Prescriptions applied to each roadless area. Also refer to Appendix D - Roadless Area Allocations in the EIS Appendix.

COMMENT: All areas presently called "Further Planning Areas" should be recommended for wilderness. At the very least any Further Planning Areas not officially becoming wilderness during the current planning phase should be managed so that they will still be eligible in the next planning phase. This is absolutely essential for the large White/Inyo Mountain complex of Further Planning Areas. (328, 1218) (96, 146, 164, 231, 958, 968, 1911, 1216)

RESPONSE: Refer to Appendix C in the EIS Appendix for a discussion of each Further Planning Area.

COMMENT: Support the proposed wilderness addition at Tioga Lake. In addition, you should proposed the Yost Creek-Glass Meadow-Upper Deadman Creek area for wilderness status. (152) (345, 398, 954, 1579, 1616)

RESPONSE: Tioga Lake (#5050): Prescription #2 will be applied to the portion of the area excluding the "valley floor" adjacent to State Route 120 and the heavy day-use fishing areas on the shoreline of Tioga Lake. Yost Creek and Glass Meadow will be managed under Prescription #17.

COMMENT: Hall Natural Area, just north of Tioga Pass, should be restored to wilderness status and a consideration should be given to enlarging the Hall Natural Area to complete the protection of the Lake Basin of which Shell and Fantail Lakes are part. This whole little high country basin just under the back side of White Mountain is a gem and should have highest priority for

protection. Keep it wilderness and don't enlarge Junction Campground. **It is fragile!** (1545) (129, 278, 487, 1548, 1568)

RESPONSE: Hall Natural Area (#5051): Most of the area (75%) is currently withdrawn from mineral entry and is a designated Research Natural Area. As an RNA, the management direction is more restrictive than wilderness. The southern portion is mineralized with active claims. Designation as wilderness could produce conflicts with existing management which has successfully maintained the amenity values. The Research Natural Area designation and Prescription #17 will preserve these values.

COMMENT: There should be wilderness designation at Table Mountain, Tioga Lake, Paiute Mountain and the upper elevations of the White and Inyo Mountains, totalling 112,000 acres. (319) (272, 944, 1716, 1983, 2202)

RESPONSE: These areas were recommended for wilderness in the Draft Plan. There has been no change in the Final. However, the Final Plan recommends approximately 60,000 additional acres for wilderness designation, primarily in the White Mountains.

COMMENT: Management Area #14 - Rock Creek-Pine Creek. We propose that the Wheeler Ridge Further Planning Area and the area around the eastern Brook Lakes be designated as wilderness. ORV use and vegetation manipulation are totally inappropriate in this area! (140)

RESPONSE: Vegetative manipulation is not proposed by the Plan and OHV use is restricted to existing routes. Refer to Management Area #14 in the Plan regarding the management of this area.

COMMENT: There should be lots of restricted access areas and a lot more wilderness. Each of the following Further Planning Areas should be considered, or reconsidered, in light of this: Coyote Southeast (#5033), Table Mountain (#5035), Buttermilk (#5038), Wheeler Ridge (#5040), Laurel-McGee (#5045), Horse Meadow (#5049), Tioga Lake (#5050), Hall Natural Area (#5051) and Log Cabin - Saddlebag (#5052). Some of these areas such as #5035, #5050, and #5051, should be proposed wilderness areas in their entirety. The others should be carefully reviewed and those portions of them with desirable wilderness qualities should be set aside as wilderness areas. As stated many times in these documents, the wilderness use in this Forest is very heavy and the maximum possible area suitable for this use should be provided. (76) (121)

RESPONSE: The Forest has reconsidered the Further Planning Areas and made some changes. Existing wilderness use is heavy and demand exceeds supply during certain times of the year. However, there are certain attributes that the user seeks that are not available in most of the remaining roadless areas. Refer to Appendix C in the EIS Appendix for a discussion of each area.

COMMENT: Mono County supports the direction of the Forest Plan that designates six of the eight Further Planning Areas for non-wilderness uses. The County

also supports the small portion of proposed wilderness at Tioga Lake. The modified boundary of the proposed wilderness in the White Mountains that excludes most of the areas possessing mineral and other development potential is also supported, conditioned on the availability of additional information that clearly documents the area's wilderness value and verifies the lack of mineral potential for the area. (1638)

RESPONSE: The wilderness proposal in the White Mountains is based upon mineral information supplied by studies conducted by the U.S. Geological Survey and U.S. Bureau of Mines.

COMMENT: Regarding the Log Cabin-Saddlebag Area, I feel it is quintessential Sierran wilderness. In addition to spectacular scenery, streams, and opportunities for solitude, this area is contiguous with existing wilderness areas, affords awesome vistas and is critical habitat for the newly introduced bighorn sheep. I not only urge wilderness designation, but want the Warren Fork watershed above State Route 120 included as well except for a jeep road that extends about 0.5 mile up the Warren Fork. This area is roadless and should have been and be considered for wilderness status.

Another respondent wrote: "In order to maintain the high quality of wilderness, I suggest that the Hoover Wilderness boundary be moved southward to include the north shore of Saddlebag Lake." (1548, 2015) (1617, 2015, 2170)

RESPONSE: The Log Cabin-Saddlebag Area contains OHV routes, mining claims, private mineral development, and recently introduced mountain sheep. Nearly 30 percent of the area is included within the recently designated Mono Basin National Forest Scenic Area. The higher elevations have been used for heliskiing. These existing and potential uses as well as the viewshed were considered when Congress established the Scenic Area Boundary. Prescriptions #3 and #17 can allow for the existing uses and yet protect existing amenity values.

COMMENT: The Inyo is acting as the lead agency in the study of the 4,052 acre Benton Range Wilderness Study Area. Section 603 (A) of FLPMA provides clear direction as to how such lands are to be studied and states: "...the review required by this subsection shall be conducted in accordance with the procedure specified in Section 3 (D) of the Wilderness Act." Section 3 (D)(1)(B) of the Wilderness Act of 1964 (PL 88-577) requires the following: "the Secretary of Agriculture and the Secretary of the Interior shall, prior to submitting any recommendations for preservation as wilderness....hold a public hearing or hearings at a location or locations convenient to the area affected." The Inyo has clearly not met this requirement in their study of the Benton Range. The study of the Benton Range is inadequate. The overall attributes of the BLM portion of the study unit and their relation to the Forest Service portions of it have all but disappeared in the discussions of the area in Appendix C. The Wilderness Society objects to this treatment of the Benton Range WSA, and maintains that it has failed to meet the requirements of the Federal Land Policy Management Act, the Wilderness Act, and the National Environmental Policy Act. (2169)

RESPONSE: The BLM portion of the Benton Range Further Planning Area is less than 5,000 acres; it has been studied pursuant to Section 202 of FLPMA. The entire area has been given the same consideration as other further planning areas.

COMMENT: Throughout the descriptions and evaluations of further planning areas, the Forest Service refers to the "unmanageable" boundaries of roadless areas. Other agencies, including the National Park Service have difficult wilderness boundaries, but they are able to manage the areas. If the Forest Service is unable to manage its lands, perhaps the land should be transferred to an agency better able to protect public lands. (2160)

RESPONSE: The term "unmanageable boundary" refers to an "inventory" boundary which includes existing land occupancies that are not allowed within designated wilderness. In many cases these uses could be allowed to continue with an adjustment of the boundary.

COMMENT: The people of Esmeralda County and their duly elected officials, the Esmeralda Board of County Commissioners, are on record as being opposed to wilderness designation in the State of Nevada. (486)

RESPONSE: Excelsior (#5989): This relatively isolated area is the remnant of larger roadless areas in California which were released by the California Wilderness Act. The area is not currently being proposed as wilderness by legislation being considered for the State of Nevada. Prescriptions #4 and #17 are appropriate for the area. Sugarloaf (#5296): This area is heavily impacted by the presence of man's activity related to mining and contains significant mineral values. The area is appropriately managed under the Prescription #18. There has been no change from the Draft Plan.

COMMENT: The Excelsior Roadless Area (Further Planning Area #5989) should be considered for wilderness status. At the least, management of this roadless area as a "wilderness-quality" roadless area under Prescription #17 should be considered. (1608) (211)

RESPONSE: The area will managed under Prescriptions #4 and #17.

COMMENT: Why are the Queen's Valley Area (#5296) and the Birch Creek Area (#5060) given Prescription #18 status? I really oppose the idea of destroying any natural area solely for recreational purposes for the few. Indiscriminate ORV driving is not a responsible use of public land. (278) (293, 1464)

RESPONSE: Prescription #18 has been substantially rewritten and renamed "Multiple Resource Area". It does not allow for indiscriminate OHV use. Please refer to Appendix C in the EIS Appendix regarding management of all further planning areas.

WILDERNESS

COMMENT: I wish to make special comments about Area #5045. This area contains Sherwin and Laurel Creeks, and Sherwin Lakes, and forms a very attractive and still very natural area very close to the Town of Mammoth Lakes. I feel that these areas should be preserved in their present state, and protected from any development and excessive use that would certainly result from motorized access. The fact the motorized use already occurs nearby and that the proposed Sherwin Bowl Ski Area is also quite close, only more strongly emphasizes the need for strong protection for these two special places. Therefore, I very strongly urge wilderness protection for at least this portion of Area #5045. (76)

Input was received encouraging wilderness designation for the entire Laurel-McGee Roadless Area. (129)

Another respondent felt that if some wilderness is absolutely required in Area #5045 that the southern half of the Laurel Creek drainage which lies above the first set of swithbacks up the Laurel Lake Road should be used. This respondent felt that there should be no more wilderness designated in the McGee Mountain area. (1870)

RESPONSE: Laurel-McGee Area #5045: Because of the dispersed recreation use patterns, mineral values, range activities, sewer ponds, OHV routes, we do not feel this area should be recommended for wilderness. Refer to Appendix C of the EIS Appendix regarding Prescriptions applied to these areas.

COMMENT: Management Area #16 - Coyote Wilderness. We propose that all of the Coyote SE FPA be recommended for wilderness. The Coyote Flat Road should be closed to vehicular traffic and obliterated immediately. No hydroelectric facilities should be constructed on Baker Creek. Private inholdings in the Ford Flat and Sugarloaf areas should be purchased immediately. (140)

Another respondent wrote: "Another high priority area that definitely should be proposed wilderness, not Prescription #17, is Coyote Ridge and Flat and the area from Sugarloaf south to Logging Flat. This area contains plant assemblages that area unusual in the Sierra, and the best known population of the sensitive plant, Lupinus padre-crowley, occurs above Logging Flat." (1589)

Other input was that Coyote Flats/Baker Creek does not meet wilderness criteria as set forth by the 1964 Wilderness Act as mandated by Congress as it is eroded area and contains a military strip. (201)

Public comment was also received recommending that Coyote Ridge, which contains Green and Rocky Bottom Lakes, be added to the existing John Muir Wilderness. (1108) (129, 134, 139, 281, 944, 1928, 2183)

RESPONSE: Coyote SE Area (#5033). The area contains numerous OHV routes, road corridors, a military air strip, range improvement and semi-primitive motorized recreation opportunities. Allocation to Prescription #17 and efforts to solidify existing OHV routes through the update of the 1977 Interagency Motor Vehicle Use Plan will preserve the amenity values now present.

COMMENT: Please recommend Further Planning Area #5038 as an addition to the John Muir Wilderness. (278) (129)

RESPONSE: Buttermilk (#5038). This area is immediately adjacent to private land with existing OHV routes; the area provides critical deer winter range. Its amenity and habitat values are appropriately managed under the Mule Deer Habitat Prescription #4.

COMMENT: It's distressing to see the beautiful Wheeler Ridge Area of 16,229 acres not included in your recommendations for wilderness. With a 22/28 wilderness rating and tremendous wildlife (I have seen both mountain lion and bighorn sheep in this area), I cannot imagine the Wheeler Ridge not receiving full wilderness designation.

Wheeler Crest is a dramatic sight from U.S. 395 and an enticing, if unconventional, destination especially for the winter mountaineer. Part of the Crest is within the John Muir Wilderness already. We would like to see most of the rest of the roadless area added to the John Muir. (1253, 1928) (129, 1616)

RESPONSE: The Wheeler Ridge Area is bisected with a 4X4 vehicle route serving existing mining claims and is used for semi-primitive motorized recreation opportunities. The geologic structure of the area restricts activity to these existing routes. Prescriptions #3 and #17 will protect the amenity and wildlife values currently present in the area.

COMMENT: Management Area #3 - Walker/Parker. Because of the degradation caused by grazing and motorized vehicle use, I'd like to see Upper Horse Meadow included in Further Planning Area #5049. All of Area #5049 should be given wilderness status because, even under Prescription #17, I fear the existing dirt tracks in the area will become more prominent. Although, in a sense, Area #5049 is already "roaded", the wilderness qualities and opportunities for solitude, particularly in winter, make it a prime area for wilderness designation. (278) (140, 1548)

RESPONSE: The Horse Meadows Further Planning Area is laced with existing two- and four-wheel drive vehicle routes. Existing facilities are located on private inholdings and range facilities are scattered throughout the area. The area will be allocated to Prescription #17 and a reduction of vehicle routes may occur when the 1977 Motor Vehicle Use Plan is updated.

COMMENT: The treatment of the released roadless area resource in the DEIS and Plan is deficient under the provisions of the National Environmental Policy Act (42 USC Sec. 432 1 et. seq.). On 03/06/86, the Wilderness Society, Sierra Club, Sierra Club Legal Defense Fund, and the California Wilderness Coalition wrote to the Regional Forester concerning roadless areas in the planning process. In part, that letter stated that we respectfully request that you promptly instruct your staff to include in each Forest Plan EIS: 1) a map on the same scale as the Forest Plan maps that displays the boundaries and name of each roadless area (released areas as well as further planning areas); and 2) a

description and evaluation of how the proposed management plan and alternatives would affect each roadless area. In response, Inyo officials sent a map of the RARE II roadless areas in compliance with the first request but failed to respond to the second request. Without the analysis, the map is essentially useless. Such treatment of one of the most important issues in the planning process violates NEPA requirements that there be a full and fair treatment of important environmental issues in the EIS. (2169) (2178)

RESPONSE: At the time of the request, all the information did not exist and was not finalized until the Draft Plan was published. Copies of the Draft Plan were mailed to those identified. The information was contained in Appendix C, Appendix H and the maps accompanying the DEIS.

COMMENT: Roadless areas "released" by the California Wilderness Act of 1984 can be considered for wilderness designation in this Forest Plan. While the California Wilderness Act of 1984 made 21 roadless areas available for non-wilderness uses in this planning period, the Congress did not prohibit the Forest Service from considering any of these areas for wilderness. The California Wilderness Act of 1984 states "...The Department of Agriculture shall not be required to review the wilderness option prior to the revision of the plans...". The Forest Service has the option of considering a wilderness alternative for "released" roadless areas. The issue of the management of these "released" areas remains and should be part of the Forest Plan. (2160) (140, 1634, 2169, 2178)

RESPONSE: Management Prescriptions assigned to the specific roadless areas can be found in the Management Area in which they occur. The roadless areas are managed under a variety of Management Prescriptions. Refer to Appendix D (Roadless Area Allocations) in the EIS Appendix.

COMMENT: The Plan should provide that all roadless areas of wilderness be recommended for wilderness designation or be managed so that they can be designated as wilderness areas in the next planning cycle. (1218) (66, 978, 1009, 1358, 1759, 1865, 1928, 2019, 2091, 2131, 2152, 2188)

RESPONSE: Refer to above response.

COMMENT: The tip of released Roadless Area #5388 lies within Management Area #5. Since it has no management prescription number on the map, I assume it must be the 1,608 acres of Prescription #18 referred to on Page IV-98 of the Plan. If this is the case, I vehemently oppose this land use designation. The southern part of the Mono Craters is a unique geologic resource, not a site for an ORV playground. The area is also intensively used by deer, judging by the tracks and droppings I see on my walks. This area should be designated Prescription #17, with the interior of each crater limited to ROS primitive non-motorized use only. (278)

RESPONSE: This area is in Prescription #17.

COMMENT: Dexter Canyon (#5053) and Watterson (#5055). These areas possess outstanding biological as well as scenic values that warrant wilderness designation. (1548) (1617, 1988, 2170)

RESPONSE: The RARE II process identified over one million acres of land administered by the Inyo National Forest that met the definition of roadless. Congress passed legislation which released, or made available for non-wilderness uses, approximately 38 percent of this total. The Department of Agriculture has chosen, as permitted by this legislation, not review the wilderness option for lands during this planning period. Information for each of the released areas is discussed in Appendix D of the EIS Appendix.

COMMENT: Management Area #12 - Benton-Casa Diablo. The portions of released roadless areas #5054 and #5055 that fall in Management Area #12 should be reclassified from ROS Class Semi-primitive Motorized to ROS Class Semi-primitive Non-motorized. The southern portion of #5054 should be protected from motorized vehicle use as it is part of the large Glass Mountain Roadless Area which has wilderness potential worth preserving. (278)

RESPONSE: ROS classification as mapped is determined by existing conditions and is not subject to change unless the existing conditions change such as the construction or obliteration of a road. The southern portion of the Glass Mountain area will be managed under Prescriptions #11 and #17. Vehicles are restricted to existing routes and new routes are not currently proposed.

COMMENT: Regarding roadless "released" areas #5053 and #5054, these areas should not be opened to logging and motorized traffic. #5053 should be designated ROS Semi-primitive Non-motorized rather than Semi-primitive Motorized to help preserve its roadless character. I am glad to see ROS Primitive and Semi-primitive Mon-motorized designation for a good portion of #5054, but I think all of this area should have that kind of status. (278)

RESPONSE: All released areas were evaluated individually to determine what prescription allocations were appropriate. ROS classifications are made based on the existing character and facilities of each area.

COMMENT: Management Area #12. Recommend wilderness designation for the Benton Ridge Roadless Area to protect cultural resources from further vandalism. (1616) (129)

RESPONSE: Wilderness designation is not required to protect cultural resources resources. Forest-wide Standards and Guidelines and federal laws for cultural resources provide specific and adequate protection.

COMMENT: Of the 435,459 net Forest Service acres in the White Mountains, only 93,183 acres (approximately 21%) will be available for general motorized access. The remaining 79% will be subject to restrictions ranging from limited access, through horse and foot access, to no access except by special permit.

That essentially puts access in a large part of the White Mtns beyond the reach of better than 99% of the population and may eventually limit usage to those few who have the time and resources to either backpack or horsepack into the area and the research community. (1588)

RESPONSE: Prescription allocations were made based on both the unique natural resource characteristics of an area and the uses that would be appropriate in the area based on past use, expressed demand or management concerns. See the description and prescription allocations for Management Area #13, White Mountains in Chapter IV of the Plan.

COMMENT: Total wilderness designation for the White Mountains is not a preferred management plan as no provision for mining in this highly mineralized area has been made nor grazing allotments considered, plus many roaded areas which exist do not meet wilderness criteria. Blanket wilderness is not the answer. (201)

RESPONSE: The Plan does not recommend wilderness designation for all of the White Mountains. See the description and prescription allocations of Management Area #13, White Mountains in Chapter IV of the Plan.

COMMENT: Classify the released roadless areas as semi-primitive non-motorized recreation areas and manage them under Prescription #17 - Limited Access. Revise Prescription #17 as discussed by the Friends of the Inyo, and apply that revised version of limited access to the other 12 released areas. (2169)

RESPONSE: Semi-Primitive Non-motorized Recreation is an ROS term that is designated by a mapping process based upon several criteria. Prescription #17 has been modified to clarify its original intent. Prescription #17 has been applied to much of the inventoried roadless lands where the major management emphasis was to retain the semi-primitive non-motorized and motorized recreation opportunities.

COMMENT: The public and the Forest would be better served if the "non-wilderness roadless lands" category was divided into two categories: "wilderness quality roadless lands" and "non-wilderness quality roadless lands". This division would make it easier to prescribe appropriate management practices for the Inyo's inventoried wilderness quality areas. Any roadless areas which do not meet wilderness quality standards (see RARE II) could then be managed to develop resource potentials to an extent not appropriate for wilderness quality roadless areas. All the Inyo's inventoried wilderness quality areas not recommended for wilderness in this planning cycle could then be placed in Prescription #17. A few modifications of this category would allow management practices...to be aimed at keeping open future options of wilderness designation for wilderness quality areas. (2170) (1107, 1532)

RESPONSE: The use of the terms "quality" as used in the RARE II to make comparative ratings led to a finding against the Forest Service that invalidated its RARE II process. Refer to Appendix D - Roadless Area

Allocations in the EIS Appendix for the Management Prescriptions applied to the various roadless areas for this planning period.

COMMENT: The Coyote North, Deep Wells, Excelsior, Horton Creek, Independence Creek, Mono Craters, Mt. Olsen, Nessie, Nevahbe, North Lake, Rock Creek West, Soldier Canyon, South Sierra, Tinemaha, Watterson, and Whiskey Creek Roadless Areas should be designated semi-primitive non-motorized areas. (2160)

RESPONSE: Most of the "roadless areas" of the Inyo Forest exist because of their inherent topographic characteristics and lack of economically feasible opportunities for recreation or commodity production. We do not invision any significant change during this planning period.

COMMENT: Of primary importance is the White-Inyo wilderness complex, totaling approximately 750,000 acres. 535,401 acres of this complex are Inyo National Forest lands; the remaining acreage is composed of contiguous Bureau of Land Management Wilderness Study Areas. The Final Plan should discuss the potential for a joint effort between the Forest Service and the BLM to manage this complex as a single wilderness. (166) (126, 140)

RESPONSE: The recommended Boundary Peak Wilderness in the Whites includes some BLM lands. The recommended wilderness boundary in the Inyo Mountains has been coordinated with BLM.

COMMENT: The White/Inyo Mountain complex is the highest priority for wilderness designation as it is one of the prime examples of Great Basin ecosystem. It is a unique area that deserves the protection of wilderness designation. If minor boundary adjustments are necessary such as by cherry stemming roads to eliminate major points of conflict, they should be used. (1332) (138, 328, 444, 1099, 1539, 1616, 1757, 1802, 1806, 1923, 2169)

RESPONSE: An additional 60,000 acres has been added to the wilderness recommendation in the Final Plan for a total of about 172,600 acres. The majority of this 60,000 acres is in the White Mountains.

COMMENT: We interpret the reduction of mining opportunities on the Inyo Forest as shown in the Preferred Alternative when compared to the RPA Alternative to be due to withdrawals of over 112,000 acres of land into the wilderness category. There are five separate wilderness areas being proposed in the Preferred Alternative and, while three of these located on the west of Owens Valley are supportable as wilderness, the other two are located in the White and Inyo Mountains will lock up acres which have a proven geological potential for mineral exploration. We recommend no additional wilderness in these two areas during the first decade until a careful analysis is done of the mineral potential of these two ranges. Since the area is currently maintained as a defacto wilderness, there is no urgency to officially designate the area. Research into the economic potential of developing minerals which may be vital to the United States economy and security should be done in the two proven

geological areas before an opportunity to utilize valuable resources is lost by proposing wilderness designations. (49) (352, 1807)

RESPONSE: Recent mineral information provided by the U.S. Geological Survey and U.S. Bureau of Mines have been considered in delineation of proposed wilderness boundaries. Areas identified as having significant mineral values have been excluded from proposed wilderness designation.

COMMENT: I believe that if the White and Inyo Mountains were to become wilderness, there should be no developed trails. Let it remain in a primitive state a true wild area. It shouldn't be "dolled" up to attract people to it. People who enjoy solitude, openess and challenges would easily be attracted to undeveloped wilderness. In the Wilderness Act it is stated as being an area "untrampled by man." Untrampled to me means undeveloped! (2177) (2199)

RESPONSE: Refer to the recreation direction for Management Area #13 in the Final Plan which suggests minimizing trail construction. The decision to build or not to build trails and their locations will be determined by a wilderness management plan which is prepared after wilderness designation and with further public involvement.

COMMENT: In designating the White and Inyo Mountain complex as wilderness, clearly state that recreational development will not conflict with wildlife needs and interests: 1) do not place a new trail system in areas where the fish, wildlife, or riparian habitats will be harmed; 2) If you must put a new trail system running north to south along the ranges, be sure to place it well below the crest so that prime bighorn habitat would not be disturbed. (1522)

RESPONSE: Refer to above response.

COMMENT: The Forest Service has not documented any significant need for wilderness designation in the Whites. The Plan specifically states that those characteristics which foster high quality and frequent wilderness usage are missing in the Whites. The Plan further suggests that irregardless of designation, the high unroaded areas in the Whites will not change significantly. In my opinion, and that of Wehausen (White Mountain Bighorn Sheep, 1982), wilderness designation may well be the death knell of the real wilderness that does exist north of White Mountain Peak. Let's leave it alone and not destroy it with the wilderness designation. Prescription #17 - Limited Access would provide all the mechanisms for protecting this area and not advertise it for the human abuse which will come with wilderness designation. (2171) (1363, 1420, 1588, 1919, 2048, 2171)

RESPONSE: Because of the isolation of a large part of the higher elevations in the White Mountains, it is not anticipated that there will be extensive use resulting from wilderness designation. Trails will be minimized in the area.

COMMENT: The bighorn sheep, native trout, cows and I like the Whites just the way they are. Don't shut us out to serve the limited special interests of a

"small but vocal group of local citizens, as well as state and national wilderness advocacy organizations. (989) (1393, 1502, 1588, 1918, 2201)

RESPONSE: See response above.

COMMENT: I support a wilderness recommendation for the entire 222,000 acre White Mountain Study Area rather than the 53,200 acres that you recommend. (388) (80, 91, 100, 111, 112, 152, 158, 167, 182, 303, 306, 384, 386, 390, 391, 392, 397, 400, 419, 430, 441, 491, 494, 932, 986, 998, 999, 1031, 1159, 1161, 1170, 1188, 1263, 1322, 1350, 1424, 1469, 1489, 1516, 1529, 1549, 1579, 1588, 1598, 1602, 1605, 1607, 1616, 1622, 1628, 1642, 1649, 1655, 1672, 1675, 1678, 1679, 1682, 1687, 1706, 1721, 1757, 1802, 1805, 1814, 1819, 1836, 1877, 1909, 1933, 1937, 1969, 1980, 2023, 2032, 2045, 2170)

RESPONSE: We have increased the wilderness recommendation in the Final Plan by an additional 60,000 acres, primarily in the White Mountains.

COMMENT: The proposed White Mountain Wilderness should be expanded to incorporate watersheds of trout streams along the east slope, including Leidy, Perry Aiken, Mcafee, and Cottonwood Creeks. The Preferred Alternative, revised boundary alternative, places the western boundary too high (about 8400 feet). None of the White Mountain roadless area should be designated open-roaded. The proposed White Mountain wilderness area should be enlarged by extending the eastern boundary north of White Mountain Peak as follows: it should coincide with the eastern boundary of the White Mountain roadless area but excluding the mining area south of Indian Creek (the Argentite Maid, Mollini, Green Monster and Evergreen Mines and the Silver Consolidated prospects). (1549, 1650, 1776) (71, 79, 139, 140, 151, 157, 166, 171, 263, 266, 279, 281, 288, 289, 298, 311, 315, 438, 934, 944, 970, 1018, 1108, 1177, 1223, 1653, 2023)

RESPONSE: See above response.

COMMENT: Strongly recommend wilderness designation for complete White Mountain, Birch Creek, Black Canyon, and Blanco Mountain Roadless Areas in Management Area #13. (129) (278, 293, 1464)

RESPONSE: Please refer to Appendices C and D in the EIS Appendix regarding the management of further planning areas and roadless areas. Also refer to the Forest map showing Prescription and Management Area boundaries in the map packet.

COMMENT: Black Canyon FPA has geologic beauty as well as some Bristlecone Forest and Dedeckera eurekensis deserving protection. The Black Canyon route should be closed and, when economically feasible, reclaimed. The roadless areas of the northern Inyo Mountains, the Paiute and Andrew Mountain Further Planning Areas form the logical northern extension to the proposed BLM Inyo Mountain Wilderness. As in the Whites, the lower slopes should be included as wilderness. (1664)

RESPONSE: Andrews Mountain (#5063): A number of existing vehicle routes into the area provide access to mining claims located within the interior portion of the area. Prescription #18 is appropriate for the area.

COMMENT: I strongly oppose wilderness designation for the White Mountains as this area is one of the few places where local people can enjoy a primitive environment without having to hike many miles. If they are recommended for wilderness, we suggest that the area between Badger Flat and Papoose Flat, including the areas around Squaw and Side Hill Springs, be excluded. These areas contain numerous roads and are utilized for cattle grazing, hunting, and other recreational activities. The road, between Badger Flat and Papoose Flat provides a loop road connecting the communities of Big Pine and Independence. It is a locally popular one-day excursion without having to retrace one's route. (174, 135) (294, 325, 1258, 1588, 1807, 2201)

RESPONSE: The proposed wilderness boundaries of the White Mountains and Inyo Mountains were defined to protect sensitive natural areas and at the same time to provide for existing activities. The road between Badger Flat and Papoose Flat is excluded from the proposed wilderness boundary but the Sidehill Springs area is within the boundary. The Forest Service acknowledges that this area is popular for other uses, but it is felt that the protection of its natural resource values outweighs other considerations.

COMMENT: Object to making the area including Montenegro Springs in the White Mountains Prescription #18. I would change it to Prescription #17. (134)

RESPONSE: This area will be managed under Prescriptions #12 and #17.

COMMENT: The White Mountains, including Gunter Canyon, should be managed following Prescription #17 rather than #18. The reason for this is that one of the few Dedeckera eurekensis populations occurs in Gunter Canyon. In addition, the area in the northernmost portion of the White Mountains, a block designated as Prescription #18 in the Preferred Alternative, should be divided into Prescriptions #17 and #18 as described in the AMN Alternative. (1108) (134, 1617, 1649, 1857)

RESPONSE: Due to the known and potential mineral values and the roaded condition of Gunter Canyon, it has remained in Prescription #18. Sensitive plant species are afforded adequate protection by Forest-wide Standards and Guidelines regardless of the assigned Management Prescription. Whereas the northern end of the White Mountains in Nevada is already heavily impacted by the works of man and significant mineral values may exist, we have left the area in Prescription #18.

COMMENT: Amend the boundaries for the east flank of Management Area #13 - White Mountains, shown in the Preferred Alternative, to match those boundaries contained in the CUR Alternative for this area. Sunshine Mining Company can see no valid reason for departing from the current management prescription in the CUR Alternative for the Chatovich Creek, Davis Creek, Indian Creek and

Mable Creek drainages. The documented high mineral potential of these drainages would be rendered inaccessible for mining by a Limited Access Management Prescription. While existing road access may be preserved under permit for the life span of need, the limited access requirement that visual resources must meet or exceed the VQO of retention will serve to effectively eliminate mining operations. (1023)

RESPONSE: The mineral potential of the subject area is not rendered in accessible and the VQO of retention as seen from the Fish Lake Valley Highway will not significantly effect mineral exploration and development.

COMMENT: The proposed wilderness area along the crest of the Inyo Mountains should be given the highest priority and should be expanded to include the adjacent parts of Further Planning Areas #5064 and #5063. At the least, the large area in the Inyos designated as Prescription #18 should be changed to #17. This area is worthy of strong protection. It is a beautiful desert mountain area and several rare plants and plant assemblages occur there, including but not limited to the Bristlecones. (1589) (91, 134, 140, 152, 167, 306, 377, 419, 971, 1108, 1263, 1549, 1582, 1586, 1593, 1598, 1634, 1649, 1655, 1679, 1942, 2152, 2170)

RESPONSE: The proposed wilderness boundary was determined to provide for the protection of sensitive resources and the provision for other uses. The boundaries were designated after careful consideration of all resources and uses on the Forest. Identified sensitive plant species will continue to be protected. See Chapter II of the EIS for a more complete discussion of the sensitive plants of the Forest.

COMMENT: I am strongly against your proposed wilderness in the Inyo Mtns. Wilderness should be necessary provided there is proper management of the land. It is wrong to lock most of the people out just to satisfy a few special interest groups. One of the best things about these mountains is the few to no people you run across. I have seen very little change since the first time I drove up there. Due to the rugged terrain and lack of water, this area is unlikely for backpacking. One thing that really disturbs me is the lack of communications between the Forest Service and the BLM. None of the Forest Service personnel at the Lone Pine Workshop knew whether the southern half of the Inyos are proposed as wilderness in Cranston's Bill. I think it is. If both wilderness proposals succeed, it will lock up practically all of this unique area. If you must have wilderness, I suggest you move your north boundary south of the existing roads, perhaps to about Tamarack Canyon. This would avoid conflict with the present users and provide some very good land for wilderness. This area is natural wilderness due to its rugged terrain. (103)

RESPONSE: Paiute Area (#5064). The ecologically sensitive area around Sidehill Spring will be included in the recommended wilderness boundary.

COMMENT: I encourage you to include restrictions in your Plan against new roads and mineral exploration and expansion of grazing in the Inyo Mountains. (306)

RESPONSE: National Forest lands not specifically withdrawn for mineral entry remain open for mineral activity. The Plan does not project any increase of grazing in the Inyo Mountains.

WILDLIFE MANAGEMENT

COMMENT: Beginning with Section 14 on Forested Habitats, it might be more clear to place the remainder of Standards and Guidelines for wildlife under a new heading, perhaps Habitat Types. These sections are now listed under Emphasis Species. (2190)

RESPONSE: We have incorporated your suggestion.

COMMENT: Wildlife deserves priority in roadless areas. (467)

RESPONSE: Prescription #17 was developed in part to protect the integrity of wildlife habitat.

COMMENT: I advocate the removal of introduced species such as tule elk, wild horses and burros. (298)

RESPONSE: Current direction and interagency agreements mandate Forest Service responsibility to manage these species. Management plans are being (or have been) developed to provide direction on habitat management and acceptable population levels.

COMMENT: Many plant and wildlife species may require a more natural distribution and abundance of habitat to maintain genetically viable populations, rather than small or isolated islands of habitat. Natural corridors for migration must also be considered. The guidelines as drafted will not meet the NFMA standards (See CFR 219.27 (A) (5)). (1617)

RESPONSE: Old growth allocation guidelines will be used to implement Forest Plan direction for those forested areas that are being planned for timber harvest. The goal is to display areas by timber compartment that will be managed for old growth at 10, 50 and 50+ years following Plan implementation. Stands of old growth will be allocated and documented. This management strategy should allow maintaining contiguous stands of old growth, and reduce fragmentation of these stands over time. There is no evidence to suggest that implementation of the Preferred Alternative will result in reducing levels of any species below genetic viability.

COMMENT: According to our figures, only about 29,000 acres of brush would be treated for wildlife under the AMB Alternative over 50 years based on treatment rates disclosed on Page II-131. Figure II-38 reveals a figure of 102,000 acres of treated shrub. It would appear that the figures on shrub treatment in this alternative are overstated. (2190)

RESPONSE: Shrub treatment totals include all vegetative treatments including those specifically designed for wildlife.

COMMENT: Limited Access Prescription #17. "Improve riparian areas where necessary to enhance fawning or other fish and wildlife habitat." (2190)

RESPONSE: We chose not to add the wording "or other fish and wildlife" to the wildlife element in Prescription #17. We assume that "wildlife" includes fish.

COMMENT: Start a program for the reintroduction of pronghorns to their original range in these areas, and implement the plans. (1532)

RESPONSE: In 1982, a reintroduction plan was developed by the Forest Service in conjunction with eight other agencies and organizations. One goal of this document was to identify areas suitable for pronghorn relocation to expand their range into historic habitats in and adjacent to the Inyo Forest. Since this plan was completed, there have been three introduction efforts where pronghorn were transplanted from northern California to BLM lands adjacent to the Inyo Forest.

COMMENT: Management Area #5 - Glass Mountain. Pronghorn antelope, reintroduced to Adobe Valley in 1982, range the northeastern boundary of this Management Area. Pronghorn antelope also have developed a consistent pattern of spring, summer, and fall season habitat use in Long Valley, which includes fawn drop along the western side of the Glass Mountain range from Watterson Canyon north to Laughlin Creek. Also, pronghorn have recently extended their habitat west of the Owens River and are found from the Little Sand Flat, north of the Indiana Summit Natural Area south to the meadows near the Hot Creek Fish Hatchery and then east to the Owens River. These pronghorn migrate through Watterson Canyon area to Banner Ridge near Moran Spring and then continue east through Chidago Flat and across the volcanic tablelands to the winter range along the west side of the White Mountains on BLM lands. (1433)

RESPONSE: This is good information that documents results of the 1982, 1984 and 1985 transplants.

COMMENT: Management Area #6 - Pizona. Pronghorn antelope that summer on BLM lands in Adobe Valley have established fawning areas within the Pizona Hills east of Adobe Valley. Under Management Area direction, I recommend a wildlife element that states: "Maintain the value of the Pizona Hills area to pronghorn antelope as a fawning/summer range area." (1433)

RESPONSE: A few animals use this Management Area as spring/summer/fall habitat. This area is currently being evaluated in the development of the Montgomery Pass Wild Horse Plan. Management goals for pronghorn will be addressed in this plan. The current priority for this area is managing for viable wild horse populations.

WILDLIFE

COMMENT: Management Area #12 - Benton-Casa Diablo. Pronghorn antelope use this area as a migration corridor to and from their summer range in the Long Valley area to their winter range in Hammil Valley. (1433)

RESPONSE: The area between Watterson Canyon and Moran Springs is a funnel for the approximately 20 animals that summer in the Crowley Lake area and winter in Hammil Valley. A wildlife directive will be added to this Management Area that provides protection for pronghorn migration corridors.

COMMENT: Management Area #13 - White Mountains. Pronghorn antelope have also recently begun utilizing Pellisier and Chiatovich Flats as summer range. These pronghorn are probably ascending the White Mountains from the east side. There is a small group of pronghorn that occur in Fish Lake Valley year round. Consider the reintroduction of pronghorn antelope to some upper elevation areas of the White Mountains with the design of Fish Lake Valley being available as winter range. (1433) (2170)

RESPONSE: This is a low priority for transplant purposes for the following reasons: the small size of the area may be a limiting factor; although pronghorn remains have been excavated at Indian campsites in the White Mountains, there is no verification that these animals used the White Mountains; and transplants are usually made onto winter ranges as these habitats are usually limiting. The animals find suitable summer habitats on their own. A pronghorn transplant in the White Mountains would require a late spring or early fall transplant. A fall transplant could disrupt breeding behavior, and transplanting does with fawns is not recommended. At this point in time, it is probably better to look at supplementing existing transplant endeavors and initiating transplants into more favorable sites.

COMMENT: There is no mention made of pronghorn antelope which were once present in greater numbers than they are today in the Mono Basin, Pizona area and surrounding BLM lands. As pronghorn are indigenous to grassland habitat in the Great Basin, greater emphasis should be placed on improving their habitat and populations, with less emphasis on non-native species such as wild horses, burros, and tule elk. (1634)

RESPONSE: Pronghorn were initially recommended as an indicator species. The fact that most existing use occurs on BLM lands resulted in removal of this species as an MIS. They are a good indicator of high quality shrub/steppe ecosystems in the Great Basin. Implementation of the Standards and Guidelines, and Management Area Direction should suffice in insuring protection of pronghorn habitats.

COMMENT: There is no mention in the Plan or the DEIS of the impacts of grazing on antelope herds or other sensitive species. What can be done to protect the antelope's wintering and fawning grounds? (278)

RESPONSE: The majority of pronghorn habitat is located on BLM and/or private lands. On Forest Service lands, the riparian Standards and Guidelines, management direction for sage grouse, and habitat management guidelines for

shrub communities should ensure protection or improvement of habitats important to pronghorns. Pronghorn are not considered a sensitive species on Forest Service administered lands.

COMMENT: Reintroduction of all extirpated plant and animal species. Attention should be given to restoring native predators. (298, 311) (123, 151, 166, 171, 302, 331, 934, 1532, 1632, 1781, 2102, 2178)

RESPONSE: The California Department of Fish and Game or the Nevada Department of Wildlife normally takes the lead in recommending reintroduction of fish and/or wildlife species. The Inyo has been aggressively involved in recovery efforts for Lahontan and Paiute cutthroat trout, Owens Tui chub, Peregrine falcons, pronghorn, tule elk, and Sierra Nevada and Nelson Mountain sheep. We are not aware of any extirpated native plant species on the Inyo regarding reintroduction.

COMMENT: An end to predator control, namely of black bear, coyote and mountain lion. There is no discussion of trapping or predator control. These practices should be prohibited. (298, 1632) (151, 266, 288, 302, 450, 934, 970, 1412, 1781, 1982, 2102)

RESPONSE: This falls under the responsibility of the California Department of Fish and Game and the Nevada Department of Wildlife.

COMMENT: (1) Locate new developments at least one-quarter mile from hardwood stands in order to protect them as wildlife habitat; (2) Restrict vehicular access as necessary to protect deer winter range, holding areas, migration routes, and known fawning areas. Allow no new vehicular access in these key areas; (3) Locate all developments outside of main deer migration corridors. (1532)

RESPONSE: Standards and Guidelines for oak/hardwood stands are sufficient for protecting these habitats. Items 2 and 3 are addressed specifically in the responses for mule deer. Standards and Guidelines, the Mule Deer Management Prescription #4 and the Semi-Primitive Recreation Prescription #17 also help maintain integrity of important mule deer habitats.

COMMENT: We concur with the wording of most of the Standards and Guidelines for the categories of wildlife species listed. Please expand this section to (1) Include the species given in pages 3-4 of our comments; (2)(A) add a statement outlining a commitment to obtain needed baseline data for all threatened, endangered, rare and sensitive species and to validate the models used to evaluate impacts of management activities on fish and wildlife, B) if evidence exists showing that any fish or wildlife species are in a declining or depleted state, prohibit activities that would keep the situation from improving until recovery is well underway, C) if insufficient information exists on the status of or habitat availability and condition for threatened, endangered, rare or sensitive species, prohibit activities that would disturb these populations or remove their habitat until sufficient information to

make management decisions is available. (1617) (140, 381, 1260, 1261, 1532, 1548, 1577, 1634, 1650, 2170, 2178)

RESPONSE: The species listed as Management Indicator Species have been substantially modified in the Final Plan. Please also refer to the Forest-wide Standards and Guidelines for wildlife.

Item 2A: The need for specific data relating to wildlife species is addressed in Appendix A. Direction for censuses are in the Monitoring Guidelines.
Item 2B: This concern is addressed under Standards and Guidelines and Forest Goals.
Item 2C: Concerns identified by this statement are addressed under Standards and Guidelines, and Management Area Direction.

COMMENT: The Forest Goals should state that wildlife populations will be enhanced and managed at levels compatible and proportionate to habitat conditions. Where habitat degradation has occurred in the past or is still occurring, appropriate actions should be taken to improve its quality and help it return to a natural condition. (1532) (78, 232, 466, 954, 1650)

RESPONSE: The Standards and Guidelines for all resources address wildlife habitat conditions.

COMMENT: I recommend that the monitoring methodology be described for individual species (Page V-10). Forest Objectives have already been established in a species-specific manner as shown on Plan IV-14-16. Under your current standard of comparison, some species could actually be eliminated from a habitat type and be considered acceptable. I consider this approach to be in serious error. Generally, the monitoring scenario is inadequate, poorly described and needs to be rethought and explained in more depth. The listing of monitoring activity (Plan V-10) has no standard to monitor deer range enhancement. The primary objective to the Forest Service should be to monitor plant and animal species and to conduct detailed ecological studies to better understand habitat requirements, reasons for population declines or explosions, and ecosystem rehabilitation.

1. We deplore the lack of emphasis on non-game animal species and any plant species not associated with logging or livestock grazing.
2. All wildlife species that are known to have been found historically in the Inyo National Forest should be considered for possible reintroduction.
3. We strongly oppose the hunting of predator species currently inhabiting the Forest, such as black bear and coyote.
4. We insist that more detailed inventories be taken of all sensitive wildlife and plant species to ascertain present distributions and habitat requirements.
5. Introduced species such as wild horses, burros, and tule elk are inappropriate in this area, especially in light of the potential environmental damage and competition with native species, and should be extirpated from the Forest and surrounding lands. (1433, 1631, 140) (158, 278, 300, 381, 487, 1608, 1638, 1839, 1863, 1802)

RESPONSE: The Plan reflects a reasonable management program for wildlife. The proposed program must be implementable. Monitoring direction in the Plan reflects the Forest's ability to accomplish the specified activities.

COMMENT: You state on V-10 that the presence of MIS will be compared annually with the presence of the species they are intended to represent. The Plan indicates that this will be accomplished for $6,000. We think this is unrealistic. To ensure viability, it is necessary to carefully monitor population trends of all rare species. Therefore, all species for which viability is a concern should be specifically named and monitored by conducting direct counts on established sample plots. (2190)

RESPONSE: We are upgrading the monitoring plans for individual species and special habitats. Threatened, endangered, and some sensitive species will be monitored by direct census. Others will be evaluated using habitat capability or habitat suitability models.

COMMENT: Upland game species such as chukar and quail received no attention in the documents. If this information is needed for the planning effort, it is available from the Nevada Department of Wildlife. (282) (33, 1433, 1988, 2170, 2190)

RESPONSE: Although chukars are a harvest species, they weren't used as an MIS for the following reasons: they are exotics, they are not good ecological indicators as they are dependent on annual understory species, populations can fluctuate significantly due to precipitation patterns, and the Forest is not planning management activities that will adversely affect habitats used by chukars. There are no management activities planned that would affect mountain quail.

COMMENT: No population for blue grouse is given in the Plan/EIS. Based on 1986 observation and hunter reports, that population is believed to be 250-500. The excessive grazing impacts on high elevation meadows and riparian areas caused by livestock and wild horses also pose a threat to blue grouse populations. (282)

RESPONSE: Blue grouse use most drainages in the Sierra between the 8,000 and 10,000 foot elevations that contain a desired mixture of forested and open habitats that they require. Riparian Standards and Guidelines should ensure maintenance or improvement of summer habitats for this species.

COMMENT: Doubt that "most blue grouse habitat is in wilderness". I usually find these grouse nesting below 8,000 feet in areas like Lundy Canyon and Lee Vining Canyon. They are not within wilderness areas; some do move upslope during summer. (1548)

RESPONSE: This statement has been removed. Both wilderness and non-wilderness areas provide habitat for this species.

WILDLIFE

COMMENT: Carefully monitor grazing of meadows in blue grouse habitat. Reduce or eliminate grazing if adverse impacts occur. (2170) (1244, 2169)

RESPONSE: Since grazing is likely to be the most significant impact on this species, habitat requirements and management direction to maintain this species will be addressed in allotment management plans. Standards and Guidelines for riparian areas provide protection as this habitat component is also important for blue grouse.

COMMENT: A complete list of wildlife species that are known or suspected to occur on (or have been extirpated from) the Forest and an account of habitat availability and condition should be provided somewhere in the Plan. Without such a list, no one can judge whether the Forest Service will be able to adequately manage the inevitable conflicts between resource uses that can affect wildlife populations and lead to a loss of viability. (1617)

RESPONSE: A comprehensive list of all species is not considered necessarily meaningful. MIS, sensitive plant species, fish species, and the habitat components defined in the Plan can provide an adequate perspective on how the Forest intends to manage these resources. Acceptable management practices are described in the Standards and Guidelines, Management Prescriptions and Management Area Direction. These will be implemented using project level evaluations. Monitoring will insure that we maintain our commitment to managing these resources.

COMMENT: Research is needed to develop a biological survey of species in the Forest. Missing from Plan A-5, mentioned briefly in B-5, this is not a low-priority item, but an indispensable tool. A species list/species abundance database must be developed for the Forest before any meaningful management can take place. One cannot provide for "...all fish and wildlife species on the Forest..." without this knowledge. It is particularly important to have this information for roadless areas before changing their use designation. (1631)

RESPONSE: Funding and manpower preclude a complete biological inventory of the entire Forest. We will monitor MIS species or their habitats to insure viability. This should in turn insure the viability of other species on the Forest. Monitoring guidelines will define the level of monitoring for MIS and other habitat components. Priorities for monitoring will be in areas where management activities will alter habitats.

COMMENT: No new road construction should be allowed if it would degrade important wildlife habitats and any unneeded roads should be obliterated where possible. When deciding whether roads are to be obliterated, wildlife habitat protection should take precedence over considerations of recreational and ORV opportunities. (1907) (1433, 1532, 1565, 2147, 2170, 2190)

RESPONSE: Standards and Guidelines, Management Prescriptions and Management Area Direction are designed to insure that wildlife habitats are protected. Although wildlife habitats are not maximized on every acre of the Forest,

habitats will be maintained or improved to support viable populations of all species. No single resource is maximized on all National Forest lands.

COMMENT: Management Area #7. "Utilize existing roads for timber harvest to minimize impacts on wildlife where possible and obliterate roads that are no longer needed." (2190)

RESPONSE: A Forest-wide Standard and Guideline for timber states: "Close or, where possible, obliterate unneeded roads to preclude resource conflicts, while considering OHV opportunities."

COMMENT: Wildlife should be managed for maximum populations, not just viable populations. (438)

RESPONSE: Managing for maximum populations is unrealistic. Even when managing specifically for one species, this is often to the detriment of other species dependent on different vegetation communities or successional stages. Direction in the Plan seeks to manage habitats for species where viability is a concern so that recovery of those species will be realized. Species where viability is not a problem will be managed to maintain or enhance habitats well above the viability level.

COMMENT: Mountain beaver can be looked at as an illustration of the need to have an ecological approach to Forest management. They construct extensive burrow systems which in turn shelter many other species. The role that these rodents play in maintaining or altering habitats in the forest is not known. Their activities may play an important role in forest ecology. Without knowing more details concerning this species status, it is difficult to evaluate broad Forest management actions that would affect the species or its role in the forest community. One example is the lack of information available for many species which will nonetheless be affected adversely by increased timber harvest and development as proposed. (127) (1019)

RESPONSE: Mountain beavers are a Category 2 species for federal listing. In the Eastern Sierra, they utilize riparian areas for their habitats. Application of riparian guidelines should ensure that their habitats will be preserved in addition to other species that use these riparian areas.

COMMENT: It seems unreasonable that the option identified as a Wildlife Alternative has only the same or reduced benefits in comparison to the Amenities option. There should be programs directed to increase wildlife species throughout the Forest. As an example, only 580 acres of habitat are treated for enhanced wildlife habitat under this alternative, while the Amenities Alternative treats 820 acres of habitat. Given the lesser treatment area, an explanation is needed to show where the 20 percent increase in habitat capability is going to be achieved. (2190) (78)

RESPONSE: Both of these alternatives have a strong emphasis on wildlife values. One emphasizes wildlife with other non-commodity resources, and the

other emphasizes wildlife with recreation. Neither was subject to budget constraints. Neither maximizes wildlife above all other resources. With the exception of the amount of deer habitat to be treated, they are essentially the same.

COMMENT: On DEIS IV-167, Table IV-46 indicates that if the PRF is chosen, there will be a decrease in the capability for 4 of the 7 MIS habitats over the 50 year life plan. This is not only undesirable from a wildlife standpoint by itself, but it violates CFR 219.19. On page IV-113, this decline in habitat is attributed to the reduction in snags and older seral stages of conifer habitats on areas managed for timber and riparian habitat on areas managed for grazing and recreation. The Department of Fish & Game recommends that timber, grazing, and recreation management acreage and practices be adjusted to permit the plan to comply with CFR 219.19. (2190)

RESPONSE: Although implementation of the Preferred Alternative would result in loss of habitat for some indicator species, viability would be maintained. The Preferred Alternative is not in violation of 36 CFR 219.19. Reductions in deer habitat are due largely to developed recreation impacts on deer migration routes. Direction for maintaining the integrity of important deer habitats such as winter ranges, migration corridors, staging areas and high density fawning habitats has been added to Management Prescriptions and Management Areas in the Plan.

Old growth reductions would occur primarily in lodgepole pine stands in Management Areas #4, #7 and #10. Outside of this there would be no decrease in old growth forest stands. Reductions in old growth have been recalculated to reflect the deletion of pure stands of red fir from the timber base which significantly lessens the reductions in old growth habitat. The decrease in early and mid-successional brush stages is the result of attempting to convert monotypic mature stands of brush to more shrub/steppe vegetation types of historic times.

COMMENT: The proposed reduction of wildlife habitat capability is contrary to NFMA regulations governing multiple-use of forest resources, the maintenance of fish and wildlife populations and diversity, and the principle of maximization of net public benefit as stated in DEIS I-1. (1617) (449)

RESPONSE: NFMA requires that habitats of all species be managed to insure the continued survival of these species. Although there will be declines in habitats (and populations) of some MIS, these species will still be viable. Populations of some species will increase.

COMMENT: The population trend of wildlife species dependent on riparian areas has not been adequately studied for the Inyo. (2170)

RESPONSE: The Forest-wide Standards and Guidelines for riparian areas and MIS dependent on riparian areas should insure that habitats are protected. Population trend studies are intensive and will probably be done only for specific species (threatened, endangered and sensitive). Intensive

monitoring will be done in riparian habitats using fish habitat assessment methods such as GAWS, and monitoring changes in riparian bird guilds.

COMMENT: In the section on species dependent on older seral stages of coniferous Forest (III-43), there is no mention made of pine marten, an old growth dependent species that is now considered sensitive on this Forest. It might perhaps be a better indicator for old growth red fir than is the goshawk, which has been noted in clearcut areas. The pine marten requires conifer or conifer/deciduous forest with at least 50% crown closure and heavy dead and down component. Need unbroken conifer cover travel corridors between areas of suitable habitat. 10,000 acres is listed as the minimum area needed for viable populations. Given the 50/500 Rule - that it takes 50 breeding individuals to guarantee even the short-term future of a population under ideal conditions and that one marten requires 640 acres of habitat, I come up with 32,000 acres as the minimum habitat requirement needed to ensure a viable population. The 10,000 acre figure is probably based on territorial overlap. If overlap is taken into account, and we assume three martens per 640 acres (two females and one male), then I get 10,667 acres as the minimum habitat requirements, which is closer to the Forest Service figure. (1634)

RESPONSE: Since the red fir area north of Mammoth is being removed from the timber base for this planning period, essentially no pure stands of red fir are being harvested. This will maintain high quality pine marten habitat on the Inyo Forest. The assumptions made in this comment are for the maintenance of a viable species or sub-species, not a population. Given that there is probably some genetic interchange between martens on the east and west side of the Sierra, and considering the entire Sierra Nevada as potential marten habitat, viability is not currently considered a problem. Given the lodgepole pine, red fir and mixed conifer stands on the Inyo, and riparian areas that are protected, this species should not be significantly impacted by management activities.

COMMENT: Should include aquatic animal species as well as terrestrial. (2190) (2178)

RESPONSE: Paiute cutthroat, Lahontan cutthroat, Owens tui chub and resident trout are all addressed in the Plan. Although they may not technically be called MIS, they essentially are. Standards and Guidelines, Prescriptions and Management Direction address the needs of these species.

COMMENT: An averaging method whereby snags on a few acres are used to meet per acre requirements should be replaced with actual on acre requirements. (1738)

RESPONSE: Snags are normally found in a clumped distribution. A clump of 5 snags allocated to an area of 5 acres would be better than one snag per acre over the same area.

WILDLIFE

COMMENT: We believe the Standards and Guidelines for snag management are inadequate to meet the needs of snag-dependent wildlife species. Guideline (B) will allow for the reduction of snag habitat in some areas which will reduce the quality of wildlife habitat. This should be revised to read: "Manage snags to at least 60 percent of potential or the current level, whichever is greater, in each forested habitat type and successional stage." Guidelines (D) and (E) should be revised as follows: "(D) Manage hard snags on suitable/non-suitable timberlands and riparian areas to achieve an average density of 2/acre (12-14" DBH) plus 1/acre (greater than 24" DBH) with all snags greater than 20 feet high. (E) Retain all soft snags on suitable and non-suitable timberlands and in riparian areas." (2190) (1634, 2185)

RESPONSE: The 40% of potential is a confusing concept. It was meant to look at habitat potential in terms of habitat quality and snag densities for various cavity-dependent species; 40% of potential is considered a minimal acceptable level to maintain viability.

COMMENT: Standards for dead and down management are inadequate for maintenance of the numerous species dependent on these habitat elements. Populations of lizards, salamanders, small birds, mammals, black bears, etc. which are dependent upon dead and down woody material (including logs and slash) would be diminished. A minimum of 3-4 down logs (20" X 20' or larger) per acre should be retained (100+ cubic feet). On key wildlife areas a higher number should be considered, with logs yarded to positions providing maximum effectiveness as wildlife habitat. Woody debris (slash) should also be retained on at least 10 percent of the timber harvest area. (2190) (1547, 1649, 1900)

RESPONSE: We feel these Standards and Guidelines are adequate; they were designed for the Inyo Forest taking into account the species composition and climatic conditions on the Forest.

COMMENT: In the Draft Plan, resource protection is weighted heavily on the side of development, and specifically assures commercial development of resources such as timber, minerals, grazing and downhill skiing areas. On the other hand, specific directions for protecting the Inyo's wildlife, habitat, and diversity while other resources are being developed are unacceptably general where such directions exist which for the most part they do not, except in the Plan's Goals and Standards and Guidelines sections. These sections are meant to be general, of course, and are not supposed to guide management actions in specific cases; specific guidance is supposedly offered elsewhere in the Plan. As far as wildlife, habitat and diversity are concerned, though, such guidance is conspicuous by its absence. (2170) (1650, 904)

RESPONSE: The Standards and Guidelines are species-specific and provide management applicable to the Forest as a whole. These are designed to insure that viability for wildlife, fish and plant populations will be maintained. Additional direction developed specifically for wildlife and fish also exists in Management Prescriptions and Management Area Direction.

COMMENT: Livestock grazing coupled with the continuing development in the Mammoth Lakes Basin, Long Valley Caldera and along the Sherwin Grade slope to Round Valley is severely reducing available historic habitat of not only deer but sage hen as well as other wildlife species. (1767)

RESPONSE: Standards and Guidelines and Management Area Direction for livestock grazing in relation to wildlife habitats in this area are designed to insure protection of these habitats. Human development and intrusion into these habitats will probably have a greater impact as reflected in the Preferred Alternative in terms of estimated deer declines. Additional direction was added to Management Prescriptions and Management Area Direction to insure that important deer habitats are maintained or enhanced.

COMMENT: The Management Prescriptions for each area should specifically address the habitat needs of all wildlife species and allocate adequate forage, cover, and water for these populations. (1107)

RESPONSE: Management Prescriptions were designed to provide direction more specific than the Standards and Guidelines. If Standards and Guidelines were adequate for a given management area, then no additional direction was given.

COMMENT: The Plan provides direction for 20 Management Areas in which one or more of 18 Management Prescriptions will apply. The CDFG recommends that (1) specific management areas for critical habitat of T&E, candidate, sensitive, and de facto rare species such as the establishment of Management Areas to emphasize goshawk, peregrine falcons and bald eagle; (2) in addition to the Prescriptions for mountain sheep habitat emphasis and mule deer habitat emphasis, particular species-specific Management Prescriptions should be devised to treat Management Areas when an area dedication is inappropriate (i.e. a habitat patch is too small), but rare or sensitive species are known or believed to exist. (2190)

RESPONSE: Developing Management Areas for specific T&E and sensitive species would result in many small piecemeal Management Areas. These would be difficult to manage. Instead we have written Standards and Guidelines for species management and have included additional direction in the Prescriptions and Management Area Direction as needed.

COMMENT: On Page II-61, add to the first paragraph: "..in consultation with the Department of Fish and Game, BLM, Department of Forestry and other concerned agencies". The value of vegetation treatments including prescribed burning, varies by site, soil type, vegetation type and other factors: consulting with others would allow access to more information on success and failure of various methods. Burning will not necessarily enhance Great Basin deer winter range. Consult other agencies and run test plots before doing widespread burning. (2170) (214)

RESPONSE: The Forest Service continually consults with other specialists as needed.

WILDLIFE

Fish

COMMENT: Forest Goals, Fish. Change to: "...ensure that viable populations of native vertebrates and invertebrates are maintained or improved." (2170)

RESPONSE: Invertebrates are covered under wildlife.

COMMENT: Management Area #7 - Upper Owens River. For fish, add: "Manage Hot Creek habitat as described in Hot Creek Management Plan." (2170)

RESPONSE: The Hot Creek Management Plan that you refer to is in draft form at present. If the Forest Service signs the plan, we will follow it.

COMMENT: The Inyo National Forest would benefit from a fishery biologist on its staff. (139) (281, 1236)

RESPONSE: Currently, the Forest hydrologist spends approximately 50% of his time in fisheries management. Funding constraints preclude a full-time fisheries position.

COMMENT: End put-and-take fisheries. (266) (298, 934, 1781, 2101)

RESPONSE: This is the responsibility of the California Department of Fish and Game.

COMMENT: Favor restoration of golden trout habitat on the Kern Plateau. Cattle grazing, ORV use, and other conflicting uses of the Forest should be eliminated or sharply curtailed. Water quality and spawning grounds should be upgraded to benefit golden trout. Hatchery-stocked fish should be "barriered out" of the South Fork Kern River above Kennedy Meadow Campground. Golden trout should be restored to the South Fork Kern River at Monache Meadows. (1738) (139, 281, 319, 1193, 1248, 1269)

RESPONSE: Forest-wide Standards and Guidelines provide direction for the management of rangelands, fisheries and watersheds. These standards provide for acceptable levels of resource protection on Forest lands while protecting the integrity of all natural resources. Changes in resource management will be altered if the standards for the natural resources are not met. Management feels that extension of the golden trout beyond its present range (above the Schaeffer Barrier) is inappropriate until full stocking of the depleted population is complete. This is not anticipated until the start of the next planning period. The Preferred Alternative does select an extensive watershed and fisheries restoration program.

COMMENT: On DEIS IV-41, modify as follows: "Although overall grazing numbers vary by alternative, all increases are projected for lands located away from sensitive fish habitat. Actual grazing numbers will be dependent

upon the results of the GAWS stream evaluation on a case-by case basis." The increase in impacts to fish due to a 9% increase in range outputs is unacceptable. (2190, 1617) (294)

RESPONSE: *Forest-wide Standards and Guidelines for fisheries and riparian* resources have been modified. AUMs do not increase in the Final Plan.

COMMENT: The EIS should analyze the impacts of management of fish species that are management indicator species. While several species are identified in the Appendix of the Plan, the impacts on these species are never specifically analyzed in the EIS, nor does the Plan contain objectives for maintaining and improving habitat for these species as required by Forest Service regulations, 36 CFR 1219.19 (A). These omissions should be remedied in the Final Plan and EIS to provide the agency with an accurate indicator of the health of streams and riparian areas. (1649)

RESPONSE: These are found in the Forest-wide Standards and Guidelines and Management Area direction. In essence, fish were treated as MIS even though they were not given this title.

COMMENT: Plan A-1, paragraph 4: The Fish and Wildlife Service is now developing a draft recovery plan for the Owens tui chub. A technical review draft will be released in fiscal year 1988. (487)

RESPONSE: We look forward to its publication.

COMMENT: With respect to Owens tui chub (Gila bicolor snyderi) on Page III-31, the DEIS indicates that, although known critical tui chub habitat lies within the Forest boundary, it is on private land and, therefore, its habitat is not a management concern. This section fails to indicate that the tui chub was found historically in Forest waters. This fact should be made clear. Moreover, since recovery activity virtually always includes reintroduction into suitable habitat within the historic range of an endangered species, the DEIS and Plan should make provision and commitment to such recovery actions as well as participating in developing and otherwise implementing a recovery plan. Little Hot Creek would be an ideal location to transplant Owens Tui chub. It is within the native range and has suitable habitat. The small dam impounding the waterfowl pond is a suitable barrier to isolate transplanted chubs from the hybrids that exist downstream. (2190, 1267) (139, 174, 300, 487, 1248, 1269, 1295, 1411, 1569, 1634, 1749, 1776, 1898, 2047, 2170, 2183)

RESPONSE: The statement in the Plan that critical chub habitat is not on the Forest is correct. The Forest recognizes a responsibility to aid in the recovery of the species. It is premature to select habitats until the U.S. Fish and Wildlife Service and California Department of Fish and Game complete their recovery plans to determine the best areas for recovery. The Forest will respond to their recovery plans and be prepared to do our part. Little Hot Creek is one of many potential transplant sites available and will be analyzed with the others at the appropriate time.

WILDLIFE

COMMENT: Since the Paiute trout is an endangered species, the proposed management of Cottonwood Creek Basin for recovery of Paiute cutthroat trout means that this drainage will no longer be open to fishing. The Paiute trout is not native to the Whites (they were planted in the North Fork of Cottonwood Creek in 1946) and there exist three other viable populations of Paiute trout in other areas of California. This will essentially eliminate the best and most heavily used fishing resource on the California side of the Whites. In a personal communication from a California Department of Fish and Game employee, who wishes to remain anonymous, the Paiute trout recovery program was described as a complete waste of limited Fish and Game money. (1588)

RESPONSE: The Pauite cutthroat trout is threatened species. There is an existing U.S. Fish and Wildlife Recovery Plan that sets objectives for management of the Paiute cutthroat trout. During the planning period, the Forest will prepare a Forest Recovery Plan that is tiered to the U.S. Fish and Wildlife Plan. Any change in recreation use or other resource conflicts will be examined by a site specific environmental analysis which will include full public involvement.

COMMENT: Regarding the expansion of the Paiute cutthroat trout to other portions of Cottonwood Creek, the permittees feel:

1. Livestock use predated this Paiute introduction and have a prior and possessory right and interest in the water;
2. Fish habitat should not be expanded beyond the North Fork. The existing fish population and habitat should be used to stock other areas in the Sierra, not the White Mountains;
3. The two major recreation streams in the Whites are Cottonwood and Crooked Creeks. Generally fishermen would prefer a limit of smaller size fish rather than a few larger fish. This would happen if the Paiute cutthroat trout habitat was expanded and rainbow, brown, and brook trout were eliminated from the remainder of Cottonwood Creek; and
4. More documentation should be presented prior to the expansion of the habitat. (2171) (174, 486, 989)

RESPONSE: See the response above.

COMMENT: The Cottonwood Basin was originally barren of fish, none of the present trout populations are "native". The Paiute trout is more of an Eastern Sierra native than the brook or rainbow trout. Both golden and Paiute trout populations require isolation to remain pure with adequate numbers to provide recreational fishing. The expansion of Paiute trout throughout the Cottonwood/Silver King Basin would be desirable for the following reasons:

1. Local and visiting anglers would have the opportunity to catch one of the rarest and most beautiful trout in North America;
2. The sizes of Paiute Cutthroat caught would be significantly greater than that of existing brook and rainbow trout;
3. The diversity of fishing opportunities in the Owens Valley area would be enhanced;

4. As potentially the largest population of pure Paiute trout in existence, fish from Cottonwood Creek could be utilized to reestablish populations in their native habitats in Alpine County and achieve full recovery of this currently threatened species; and
5. Following recovery, these fish could be used as another "management tool" by the Department of Fish and Game by being available for establishment in other suitable Sierra waters to improve recreational angling. (2190) (65, 225, 281, 487, 1617, 2170, 2171, 2213)

RESPONSE: See response above.

COMMENT: With respect to the Owens pupfish (Cyprinodon radiosus) on DEIS III-32, it is classified as a "threatened" species. This is incorrect; it is classified as "endangered". (2190) (1411, 1108)

RESPONSE: This change has been made in the FEIS.

COMMENT: Support introduction of Lahontan cutthroat trout to Glass Creek Meadows with prohibition of road construction or any other commercial development there. (1898) (319, 944)

RESPONSE: There will be a site specific environmental analysis for any proposed ski area development between Mammoth and June before development will occur. Development in Glass Creek Meadow will be addressed at that time. The designation of the Upper Glass Creek area has been changed to Management Prescription #17 in the Final Plan and EIS.

COMMENT: Forest Objectives for wildlife and fish. If trout fishing is to increase 32% during the next 50 years, why is the average annual objective for total wildlife/fish user days lower for the 1986-1995 decade than at present? This is an inconsistency that needs to be corrected. (2170)

RESPONSE: The Forest Objectives table in the Final Plan shows an increase of 1.7 thousand WFUDs per year for the first decade of the planning period.

COMMENT: We concur with the Forest's proposal to negotiate with utilities to rewater streams for resident trout fisheries and to maintain instream flows needed to support resident fisheries (Plan IV-21-22). These guidelines should be strengthened to specifically include a prohibition of any winter flow depletions (November-March) to prevent degradation of fisheries due to severe winter conditions. (1617)

RESPONSE: It has not been proven that all winter diversions are detrimental to the fisheries, so we cannot support adding a specific guideline as you suggest. In those streams where winter flows are important for resources, we will consider the specific situations in our negotiation procedures.

WILDLIFE

COMMENT: Regarding the section on Environmental Consequences Common to All Alternatives, although mention is made of a policy to make "efforts to rewater 15 miles of stream when issuing new hydroelectric licenses under all alternatives", this statement should be expanded to include "The Forest Service will pursue through negotiation or legal mechanisms the enforcement of water rights for the restoration of fish habitat and associated public trust resources", and guidelines for minimum flow conditions as we propose on Page 5 of our comments.

Concerning the potential consumption of water by geothermal development, this section should acknowledge and incorporate the stipulation that has been attached by the Bureau of Land Management to leases in Blocks I and II which sets limits on the amount of water that can be consumed by geothermal development. (1617)

RESPONSE: The Forest is committed to providing instream flows to insure that water dependent resources are managed at or above viability levels. This includes the recovery of natural resources lost through diversions to hydroelectric facilities. The Forest will use legal mechanisms and negotiation to obtain the necessary instream flows. Consumptive use of water by geothermal plants will be evaluated on a case-by-case basis. The Forest Service manages natural resources through application of the Forest-wide Standards and Guidelines, which applied to all activities, should avoid adverse impacts and unacceptable degradation.

COMMENT: A program to return all lakes and streams to pre-stocking conditions with the full range of indigenous fish species. (166)

RESPONSE: Nearly all the lakes on the Inyo were devoid of fish prior to stocking. Some lakes are being allowed to take their course in restoration to a pre-stocking condition. The stocking program is controlled by the California Department of Fish and Game.

COMMENT: 1. We strongly suggest a future emphasis on wild trout fisheries in streams and lakes that have high potential for maintaining viable trout populations. 2. Streams and lakes with marginal potential for maintaining viable trout populations should have all remaining nonnative fish species removed and be allowed to return to a pre-stocking condition. 3. Streams and lakes which currently contain no nonnative fish species should not be stocked with such species. 4. A strong emphasis should also be placed on studying habitat requirements, present ranges, and historic ranges of all fish species native to the Forest, especially those with threatened or endangered species to historically inhabited areas. (140)

RESPONSE: All of the above suggestions are being incorporated into long-term management of the aquatic resources on the Forest.

COMMENT: The fisheries outputs are mere leftovers provided by mitigating impacts from preferred Forest activities such as timbering and grazing. This default approach is a poor way to manage, and it forces Caltrout and other

groups to be staunchly protective of fishery values and fiercely critical of other resource uses. (2183)

RESPONSE: This is not true. Stringent Forest-wide Standards and Guidelines and Management Area Direction demonstrate a commitment to insuring the integrity of aquatic systems and species dependent on these habitats.

COMMENT: Taking into consideration the substantial effort and supplemental funding provided by the Department of Fish and Game to the Forest Service fishery program, it is difficult for us to understand the variability between habitat improvement level goals for the various alternatives. It appears particularly ironic that the highest level of fish habitat improvement for non-threatened species is listed in the alternative for maximum cost efficiency. We don't understand why the Forest Service is not recommending the cost efficiency of that alternative be carried over to the Preferred Alternative. We don't understand why the higher levels of habitat improvement for threatened Paiute and Lahontan cutthroat aren't included in the PRF. There are a number of high quality trout streams in the Inyo, and we believe it is unfortunate that the Plan appears to de-emphasize their importance in management planning for increased commodity output. We believe the Plan should speak clearly to the objective of maintaining high quality streams that have the potential for supplemental stocking. (17)

RESPONSE: The different alternatives assume that there are Forest Service appropriated dollars available to run the programs emphasized. If State Cooperative dollars can be guaranteed to continue to support fish and wildlife programs, then an emphasis will be placed on those programs above the level shown in the Preferred Alternative. The Max Cost Efficiency Alternative assumes that monies are provided solely from Forest Service appropriated dollars. The Forest can't develop a long-term program on the basis of state-supplemented dollars because we can't be guaranteed of their availability. As long as they are available, we will restore or enhance fish habitat at an accelerated level. Direction is given for threatened trout in the Preferred Alternative to recover the species as specified in the Forest, State and U.S. Fish and Wildlife recovery plans. We believe this will provide for and maintain high quality streams for recovery of the species.

COMMENT: The Owens River-Crowley Lake fishery. This river system once was, and could again be, one of the premiere trout fishing areas of the nation. I believe the protection of this valuable recreational resource should be a major element of the draft Plan for the Inyo. (1785)

RESPONSE: The Owens River-Crowley Lake fishery is almost entirely on non-Forest lands; we do not have management control of this fishery. The Forest does manage portions of Hot Creek that have been designated as wild trout waters. This area is committed to a recreational resource emphasis.

COMMENT: The Hot Creek fish hatchery is vital to the multi-million dollar summer tourist industry of Mono County. The proponent as stated in the EIR

cannot guarantee that there will not be any adverse impact to the hatchery. (2055)

RESPONSE: The potential impacts are being studied in the site specific environmental impact report. This type of specific information is beyond the scope of the Forest Plan.

COMMENT: Hydro development on productive trout streams, excessive grazing in wet meadow areas and timber cutting that can have a detrimental effect on water flow and fish life should be taken into account when making the final evaluation of land use. (1034)

RESPONSE: These were considered in the FEIS and Plan.

COMMENT: We are very concerned that warm water fishing is being offered as a substitute for the loss of cold water fish habitat due to hydroelectric projects. (2183)

RESPONSE: This is not true on the Inyo. Recent licensing and re-licensing negotiations and environmental assessments for hydroelectric power projects have all emphasized trout.

COMMENT: The Forest-wide Standards and Guidelines for fisheries should include overall water quality standards and guidelines for control of runoff and maintenance of streamflows. (1891)

RESPONSE: These appear in the water section of the Forest-wide Standards and Guidelines and are applied on all streams.

COMMENT: For the Forest-wide Standards and Guidelines for threatened and endangered fish and fisheries, add: "As a minimum requirement, at least maintain water levels in lakes and reservoirs to support fisheries at existing levels". Include CDFG's proposal that the Forest Service use the GAWS methodology in measuring streambank and channel degradation due to grazing or other stream disturbances. If GAWS studies show that streambank disturbance is degrading a stream and/or adversely affecting riparian-dependent species, action should be taken immediately. Such action should include reducing or eliminating streamside grazing, timber activity, or recreation activity when appropriate. AMP review and revision should, of course, take place after GAWS results are available, to allow realistic evaluation. The Inyo staff is doubtless aware that the GAWS methodology is presently (and successfully) in use by the Toiyabe Forest for Eastern Sierra streams.

Also, in Standard and Guideline 3(A), it is assumed that grazing is compatible with habitat essential to threatened and endangered fish populations, an assumption not borne out by the Endangered Species Act. In addition, this 10% "trampling and chiseling" guideline is inconsistent with the proposed recovery plan for Lahontan cutthroat trout and Paiute cutthroat

trout mentioned in #1. These fish presently have very small populations. This guideline should be modified to protect these species.

Modify Item 4 to include protection of fisheries and riparian areas by prohibiting winter flow depletions and restoring a minimum flow (at least mean historic monthly flow) during April-September. (2170)

RESPONSE: Forest-wide Standards and Guidelines have been modified that essentially address all of the aforementioned concerns.

Goshawks

COMMENT: Goshawk nest stand locations should be on slopes of less than 20% (not 50%). (1522)

RESPONSE: The 20% figure follows Regional guidelines.

COMMENT: More nesting pairs of goshawks must be allowed. Acreage for feeding must be provided for in addition to that allowed for nesting. (1565)

RESPONSE: The allocation made for goshawks in the Plan allows for 15 nesting pairs of goshawks within suitable areas for timber management. This equates to approximately 7500 acres per nesting pair, which is the home range size based on ongoing research and the literature. Within these territories are stringent requirements for maintaining nest stands and adjacent foraging habitat. Outside of the suitable timber component, the Standards and Guidelines will assure maintenance of nest stands in relation to other resource practices such as recreation. Nest stand management on the Inyo exceeds the Regional guidelines for managing this species.

COMMENT: Goshawk numbers should be maximized. Before activities are undertaken that might impact goshawks, sufficient data to determine whether the goshawk population on the Forest is changing should be gathered. On Plan IV-40, goshawk (Accipiter gentilis) guideline (B) should provide for the establishment of 125 acre rather than 100 acre protected nesting territories. On DEIS II-47 and Plan IV-41, the goshawk guidelines suggest that territories should be located in "unsuitable timber as long as high quality habitat can be found there." By placing territories in such unsuitable timber, the natural distribution of goshawks probably will not be maintained. Territories should be located to best approximate a natural distribution. (1738, 2190)

RESPONSE: We are currently collecting home range and habitat use data for this species on the Inyo. In addition, we survey known nest sites annually for nesting activity and reproductive success. This information is being used to coordinate goshawk nesting requirements with timber management activities. Changing the nest stand requirements from 100 to 125 acres is not considered necessary.

COMMENT: With respect to goshawks, on Page III-127 and III-128, the section fails to describe the importance of aspen groves to habitat requirements. Such a discussion should be presented. (2190)

RESPONSE: Several nest sites are within aspen stands, more typical of Great Basin nesting habitats associated with this species. These stands are not being allocated for timber management, thus stand structure should not be altered. Nest stands will be managed according to the Standards and Guidelines.

COMMENT: The Forest Service has chosen the goshawk as the "MIS" dependent on old growth. However, the Agency's analysis suggests that the goshawk population does not accurately reflect the health of the old growth ecosystem. Thus, for example, the number of goshawks is expected to remain at current levels under each of the four alternatives including the Preferred Alternative, despite the fact that old growth in suitable timber will be reduced by widely varying amounts: 59% (PRF), 91%, 38% and 59% under the different alternatives (DEIS IV-167-168, Figures IV-46-47). The accuracy of these projections appears questionable given the large differences in old growth habitat under the various alternatives. We would appreciate a clear explanation of how these conclusions were reached. Moreover, if the estimates are correct, then the goshawk is apparently not an accurate indicator species for the health of the old growth forest. The Forest Service should include another species as a MIS that truly reflects the health of this ecosystem. (1649) (232)

RESPONSE: Goshawks are a good MIS in that they use a variety of habitats for nesting and foraging. Mature/old growth habitats are required for nest stands. As long as these stands are available for nesting habitat, then a diversity of other habitats can be present, and not reduce the potential for nesting territories. Jeffrey pine (which makes up the majority of the suitable timber base), consists of naturally open stands. Old growth Jeffrey pine on the Inyo is not synonymous with old growth red fir, or west Sierra coniferous stands. Thus, most of the old growth species found in those stands will not be found in old growth Jeffrey pine stands on the east side of the Sierra. This is why we also use diversity and other allocation concepts to insure that old growth habitats are maintained. In red fir, species such as black-backed woodpeckers and pine marten are probably better old growth indicators than the goshawk. Since no logging is planned in old growth red fir stands, management activities should not alter habitats that these species depend on.

Management Indicator Species

COMMENT: The Plan does not at all make clear how the management indicator species concept can be of use in managing riparian areas. As far as I can see, monitoring of the yellow warbler would give no clue to the condition of the majority of other species that might be present (such as water snails, Apache fritillary butterflies, salamanders, mountain beaver, etc.). (910) (127, 115, 225, 2178)

RESPONSE: The management indicator species concept is just one way of addressing habitats on the Inyo. In addition, there are vegetation communities, vegetation structure, seral stages, snags, down logs, aquatic ecosystems, etc. Yellow warblers, per se, will not be monitored, but rather the habitats they occupy. If the integrity of their habitats are maintained or improved by applying the Forest-wide Standards and Guidelines, then the integrity of habitats of other species dependent on these riparian areas should also be maintained.

COMMENT: Since the NFMA regulations specifically require that habitat for each MIS is maintained and enhanced, the Plan should clearly indicate how this will occur for each MIS. The CDFG contends 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 MIS, and especially those indicator species that are rare. (2190) (2178)

RESPONSE: NFMA does not require that habitats of all MIS be maintained or enhanced. The law states that habitats of all species must be considered in resource allocation.

COMMENT: The MIS list contains no reptiles or amphibians. (1631)

RESPONSE: Adding reptiles and amphibians to the MIS was not considered necessary as Standards and Guidelines would insure protection for these species. Springs in the Southern Sierra, White and Inyo Mountains are considered important habitats for amphibians. Application of Standards and Guidelines for riparian areas should insure protection for amphibians dependent on those areas.

COMMENT: Invertebrates are especially sensitive indicators. (2178)

RESPONSE: Invertebrates dependent on aquatic ecosystems should be protected by the Forest-wide Standards and Guidelines for riparian areas and water. Invertebrate populations are also considered when implementing aquatic habitat assessments.

COMMENT: Lewis' woodpecker for Jeffrey pine forest, golden crowned kinglet for red fir forest. (1548)

RESPONSE: Lewis' woodpeckers are suitable for open stands of Jeffrey pine on the edge of open sagebrush areas. Golden crown kinglets are more of a forest generalist. Neither of these species contribute to evaluating habitats that aren't already covered by Standards and Guidelines or Prescriptions.

COMMENT: All sensitive animal species should be designated as management indicator species and require species-specific monitoring and management

plans. Therefore, habitat capability models should be developed for the spotted owl, great grey owl, golden eagle, and the prairie falcon. (1411)

RESPONSE: Sensitive species are normally used as management indicator species because of a viability concern and to insure that these species do not become federally listed. Sensitive species that potentially occur on the Inyo include: Sierra Nevada red fox, pine marten, fisher, California mountain sheep, spotted owl, great gray owl, goshawk, and willow flycatcher. Most of these species are addressed as MIS in the Plan. Habitats of sensitive species will be protected by Standards and Guidelines in the FEIS/Plan. Golden eagles and prairie falcons are not sensitive species.

COMMENT: Working with MIS furthermore will not provide for the maintenance of uncommon types and seral stages. Specific methods for attaining protection for special communities, which include the dedication of Research Natural Areas and Special Interest Areas, and the development of methods for monitoring the health and vigor of these areas should be described. (2047)

RESPONSE: Refer to the diversity section of this Appendix. Forest-Wide Standards and Guidelines and Management Area Direction provide specific methods for protecting special habitats.

Mountain Sheep

COMMENT: Prescription #3 - Bighorn Sheep Habitat Emphasis should be applied to the range of the Mt. Langley herd. (1532)

RESPONSE: Mt. Langley is the result of a reintroduction from the Mt. Baxter herd. The estimated population is 30 animals. The herd summers in the wilderness area and winters in Lubkin Creek. Introductions of sheep into unoccupied habitats are made with the recognition of existing resource uses. If a viable population establishes itself in this drainage, then the option does exist to change the management prescription.

COMMENT: Our organization is concerned about the reintroduction of the bighorn sheep. While our organization is generally in support of such a concept, we are concerned that an overly cautious administrator of the Forest will restrict significant portions of the backcountry in favor of the bighorn sheep when there is no proven need for such action. The bighorn sheep generally live and forage in areas where horses and mules would have a difficult time traveling. Also, we have been told that bighorn sheep are not actually detrimentally impacted by the presence of humans or horses and mules. We are therefore concerned that unreasonable restrictions may be placed upon extensive areas now available for travel by hikers and stock users. (1666)

RESPONSE: Current findings on the relationship of sheep/human interactions show that sheep are not as alarmed as previously thought. These findings will be taken into account when revising or writing new mountain sheep management plans. Current restrictions will be analyzed and modified

accordingly to lift any restrictions that are not needed to protect the sheep.

COMMENT: Management Area #13 - White Mountains. I recommend the following wording be added: "Allow trail construction or designation only where bighorn will not be adversely affected." (1433) (2170, 2190)

RESPONSE: This is addressed in a facilities element of the Mountain Sheep Prescription.

COMMENT: The Draft Plan states, "establish no roads or heliports where they would conflict with bighorn sheep." You have already delineated those areas used by the animals, so a more appropriate rule would be to ban construction of roads and heliports in these areas. (1598)

RESPONSE: No change is necessary. This is covered in the Plan.

COMMENT: Prescription #3 should be applied to the portion of the native range of the Inyo Mountain Nelson bighorn sheep herd which occurs outside of the proposed wilderness area. (1522)

RESPONSE: This population is estimated at 30 animals. Much of the habitat used by these sheep is under Prescription #2 - Proposed Wilderness. At this time, changing the remaining area to Prescription #3 is not warranted.

COMMENT: Prescription #3 - Bighorn Sheep Habitat Emphasis. Wilderness designation would allow greater protection for bighorn sheep. No trails need to be constructed in bighorn sheep habitat. (1634)

RESPONSE: This is not necessarily true. Wilderness designation could constrain habitat improvement opportunities for mountain sheep and also restrict transplant opportunities.

COMMENT: Prescription #3 - Bighorn Sheep Habitat Emphasis. Change the energy element to permit no new energy developments. Change the facilities component to permit no new roads or heliports. (2169)

RESPONSE: This prescription clearly sets the preference for mountain sheep in relation to these activities and addresses these activities. No change is necessary.

COMMENT: In Prescription #3 under protection, there is need for some provision for an eventual natural fire. I suggest a "let-burn" prescription within bighorn sheep habitat as discussed in my reports on the Sierra Nevada and the White Mountains. (1097)

WILDLIFE

RESPONSE: The Forest Service has the option of managing unplanned ignitions using three strategies: confinement, containment and control. These can be used as one means of improving wildlife habitats using fire as a tool. The Inyo Forest is preparing a fire management plan which will provide additional direction regarding fire management.

COMMENT: Prescription #3 - Bighorn Sheep Habitat Emphasis. I suggest an addition under range to include: "Permit no new allotments if transmission of disease from livestock is shown to be deleterious to bighorn sheep." (1433) (230, 449, 1097, 1532, 1598, 1603, 1617, 1649, 1664, 1836, 1857, 2048, 2170, 2171, 2190)

RESPONSE: The following element has been added under range: "Permit no increase in livestock use if the increase is shown to be deleterious to mountain sheep populations." Standard and Guideline #3 for mountain sheep addresses disease transmission from livestock.

COMMENT: On Plan IV-39-46, I recommend that Statement C be changed to: "Permit no increase in livestock use. Eliminate livestock grazing if competition for forage or transmission of disease is shown to be deleterious to bighorn sheep populations. (1433)

RESPONSE: Language will be incorporated into the Forest-wide Standards and Guidelines for mountain sheep that states the health of established mountain sheep will be maintained. Avenues to remove livestock on existing mountain sheep habitats will be pursued if transmission of disease is shown to be deleterious to the sheep.

COMMENT: I approve the PRF objective to reintroduce Sierra Nevada bighorn and to protect the Nelson bighorn. If potential recreation stock could transmit parasites to the Nelson bighorn in the White Mountains, why would stock not do likewise to the Sierra bighorn? This point needs clarifying. (0952)

RESPONSE: This is addressed by the previous response.

COMMENT: Management Area #2 - Lee Vining. I support the statement in the range element that commits the Forest to manage the Lee Vining Canyon area for bighorn sheep. I recommend the following additional statement to the wildlife element: "Should reintroduced bighorn establish themselves in drainages other than Lee Vining Canyon, then explore ways of eliminating domestic livestock allotments in those areas." (1433) (1279, 1608, 1617, 1988, 2170, 2190)

RESPONSE: The following statement has been added to the Forest-wide Standards and Guidelines for mountain sheep: "If reintroduced mountain sheep establish themselves in drainages outside the reintroduction sites, take advantage of opportunities to extend mountain sheep range, consistent with other resource activities."

COMMENT: I support all of Management Prescription #3 which includes no increase in AUMs within bighorn sheep range. In particular, I support the removal of portions of Perry Aiken, Tres Plumas, Cottonwood Creek, and Crooked Creek allotments from grazing. This is an exceptional recommendation! (1549)

Another respondent commented: "The proposed exclusion of portions of four existing cattle allotments to protect bighorn sheep habitat is not defensible. No documentation exists which will substantiate a serious conflict between bighorn sheep and cattle. The actual cause for the crash of the bighorn sheep population in the Whites between 1966 and 1968 was a pneumonia infection with a predisposing high lungworm infection and high population density. That cattle may have been the source of the pneumonia is speculated but not documented. (White Mtn. Bighorn sheep, John D. Wehausen 1982)." (2171) (1588)

RESPONSE: After further research on this issue, the range direction for Management Area #13 - White Mountains, has been modified to read: "Exclude portions of the Perry Aiken Flat allotment from cattle grazing to protect mountain sheep habitat."

COMMENT: Increased priority should be given to the study of former bighorn sheep habitat, especially the Nelson bighorn of the White and Inyo Mountains. A specific timetable should be set for the completion of studies of former range and the feasibility of reintroduction. The timetable should cover the implementation of any feasible reintroduction. (1664)

RESPONSE: A recovery plan similar to that developed for the Sierra Nevada mountain sheep population will be developed for the White and Inyo Mountains. Such a plan will prioritize transplant sites and be used to implement direction in the Forest Plan.

COMMENT: Continued use of the Barcroft Road and Laboratory and related research activities will prevent any movement of sheep back into original habitat in and around Mt. Barcroft and Sheep Mountain. (1977, 1980, 1982)

Wehausen documents in numerous places the extreme conflict between people and bighorn in the type of high alpine environment typical south of White Mountain. Wehausen also expresses concern over the probable construction of a White Mountain Crest Trail in the event that the area north of White Mountain Peak is designated wilderness: "Development of a trail along the crest of the White Mountains would pass through much important summer bighorn range. Assuming that such a trail would lead to an increase in human use, there is a high probability that it would ultimately cause displacement of bighorn." (2171) (1977, 1980, 1982)

RESPONSE: Refer to the first facilities element in Prescription #3.

COMMENT: The Mt. Baxter herd of Sierra bighorn sheep spends a significant portion of the summer season in Kings Canyon National Park and the primary

ewe/lamb range is in the Park. This is not found in either the Plan or the DEIS. Further there is a cooperative agreement between the National Park Service, the California Department of Fish and Game and Inyo National Forest for the management and reintroduction of Sierra bighorn sheep to various locations in the southern Sierra Nevada. Both of these points should be noted in the final document since they have an influence on what the Forest can do regarding management of Sierra bighorn sheep. (487)

RESPONSE: The Sierra Nevada Bighorn Sheep Recovery and Conservation Plan to which you refer is listed in Plan Appendix A as a plan that is incorporated in the Final Forest Plan.

COMMENT: Would like to see bighorn sheep introduced into the vicinity of Olancha Peak in addition to the areas outlined in the proposed Forest Plan. Would like to know why the Olancha Peak area was left out of proposed Sierra Nevada bighorn sheep management strategies proposed in the Forest Plan. (1738)

RESPONSE: Reintroduction priorities are addressed in the Interagency Plan for recovery of Sierra mountain sheep referenced above.

COMMENT: The outputs are in numbers of bighorn sheep when, in fact, we should be dealing with numbers of populations. It is through the existence of multiple populations that we will have a buffer against some catastrophic loss of native populations. It is entirely possible that these populations are each genetically unique. They should all be treated as such; thus the approach of the Sierra Nevada recovery and conservation should be used in the Forest Plan for populations in the Sierra Nevada, White and Inyo Mountains. This would best be incorporated into the Forest-wide Standards and Guidelines, and I would suggest the following wording for Plan IV-42, 8A: "Long term viability of populations of both California and Nelson bighorn will be accomplished through maintenance of existing bighorn habitat and establishment of additional populations in historical habitat in accordance with principles in the Sierra Nevada bighorn sheep recovery and conservation plan." (1097)

RESPONSE: The Sierra Nevada Bighorn Sheep Recovery and Conservation Plan is incorporated as part of the Forest Plan.

COMMENT: Appendix B on Plan B-4 should have added at the bottom: "monitor appropriate Nelson bighorn populations as potential reintroduction stock." (1097)

RESPONSE: Information related to monitoring will be addressed in monitoring plans that are species specific.

Mule Deer

COMMENT: Management Area #9 - Mammoth. Under wildlife, add: "Protect and enhance deer migration and staging areas. Modify Prescription #12 boundaries to Prescription #4 south of Mammoth, including Creek Road, to protect major mule deer staging areas. (2170) (1433)

RESPONSE: We have made wording changes in the Management Area direction similar to your suggestion. We made no change in Prescription boundaries.

COMMENT: The acreage allocated for mule deer under the wildlife option is less than the Preferred Alternative which is not designed to specifically benefit wildlife. We think this wildlife option should have considerably more emphasis on mule deer areas. (2190)

RESPONSE: The acreage applied to the Mule Deer Prescription #4 is essentially the same for both the Preferred, the Amenities, and the Wildlife/Recreation Alternatives (118.4, 117.6 and 118.3 thousand acres, respectively).

COMMENT: Too much emphasis is placed on mule deer. Equal emphasis must be given to the myriad of wildlife species that do not serve any utilitarian purpose such as hunting, fishing or even aesthetics. (1634)

RESPONSE: Actually the highest priority is given to recovering threatened and endangered species, followed by insuring that sensitive species do not become listed.

COMMENT: Monache Meadows should be changed from Prescription #17 to Prescription #4 to emphasize mule deer habitat, and to avoid increasing the damage to resource values by stimulating day use. Though Prescription #4 emphasizes mule deer habitat and key fawning areas, insignificant amounts of key mule deer summer range have been identified in the Preferred Alternative. (128) (1738, 2170, 2190)

RESPONSE: Monache Meadows is designated under Prescription #17. This designation will maintain the integrity of migration corridors, holding areas, and summer habitats for deer in this area. One of the purposes of this Prescription is the maintenance of important wildlife habitats.

COMMENT: A concentrated recreation site in Upper Deadman would be in an area which funnels migratory mule deer, thus creating a likely unmitigable problem. Reserve concentrated recreation use in this area to enlarging existing facilities at Lower Deadman. (2185)

RESPONSE: An estimated 1,000 to 1,500 deer migrate over various passes on San Joaquin Ridge. Minaret Summit, Deadman Pass and Glass Creek Pass are

thought to be the major cross-over points. Migration corridors and important passes will be managed to maintain the integrity of these areas. In the FEIS/Plan, major migration corridors, staging areas and important fawning habitats will be identified in the MA direction, and protected by adding a wildlife directive for Management Areas #8. In addition, wildlife direction in management prescriptions 12, 13, and 14 will be strengthened to insure protection of these important habitats.

COMMENT: Management Area #8 - Mammoth Escarpment. Include the following statement: "Allow no new roads, road improvements, ski facilities, or other habitat alterations that would adversely impact deer holding areas or migration routes." (2190) (54, 59, 1617, 1988, 2170)

RESPONSE: This Management Area contains the Sherwin staging area and Solitude Canyon/Mammoth Pass migration corridors. Approximately 3,500 to 4,000 deer use the area for staging; 3,000 of these cross the Sierra over the aforementioned passes. Management Prescriptions #4 - Mule Deer and #17 - Semi-primitive Dispersed Recreation are applied to the staging area. In the Final Plan and EIS, the description of Management Area #8 has been modified to include this information. Wildlife direction for this Management Area has been strengthened to maintain the integrity of important migration corridors. In addition, wildlife direction in Management Prescriptions #12, #13 and #14 have been strengthened to insure protection of important deer habitats.

COMMENT: Management Area #11 - Convict-McGee. In order to make certain no degradation to this migration route occurs, a wildlife section should be added to the Management Area Direction which reads: "Allow no new roads, road improvements, or other habitat alterations that would adversely impact deer holding areas or migration routes." (2190) (2170)

RESPONSE: This Management Area contains the major migration corridor for the Sherwin/Buttermilk deer herd to and from the staging area, and the southern portion of the staging area. The importance of this area for migrating deer is described in the Management Area description.

COMMENT: The Preferred Alternative deletes the majority of critical migration routes from the Mule Deer Prescription #4. To realistically "emphasize the integrity of mule deer migration routes", the Preferred Alternative should expand the Mule Deer Prescription as shown on our PRF map. (2190) (54, 1433)

RESPONSE: Recent research has documented several migration routes and other important deer habitats that were not known when the Draft Plan was prepared. These relate primarily to the Sherwin, Buttermilk and Casa Diablo deer herds. The integrity of deer migration corridors, staging areas, winter ranges, and fawning areas will be maintained by implementing the Standards and Guidelines, Management Prescriptions, and Management Area Direction. Management Area descriptions have been updated using information submitted by the California Department of Fish and Game.

COMMENT: Management Area #14 - Rock Creek-Pine Creek. Please add: "Acquire through land exchange, the private land used by the Sherwin Grade deer herd for winter range or migration routes." Allow no new roads, road improvements, or other habitat alterations that would adversely impact deer holding areas, migration routes, or winter range.... Allow no increases in grazing where this might adversely impact deer habitat." (2190) (2170)

RESPONSE: This Management Area includes a portion of the winter range for the Sherwin/Buttermilk deer herds and important components of migration corridors used by these herds. Important habitats used by deer are already allocated to Management Prescriptions #4 and #17. Direction exists to acquire lands important to wildlife. The other two comments are addressed in the management prescriptions and management area direction. The description of this management area has been revised to include recent research findings.

COMMENT: Management Area #15 - Bishop Creek-Buttermilk. Please add: "Acquire, through land exchange, private lands known to be important to deer. Allow no new roads, road improvements or other habitat alterations that would adversely impact deer holding areas, migration routes, or winter ranges." (2190) (1433, 2170)

RESPONSE: Refer to previous comment.

COMMENT: Management Area #16 - Coyote. A range section should be added stating: "Reduce or modify grazing if it adversely affects wildlife habitat." (2190) (1433)

RESPONSE: This has been added to the Final Plan.

COMMENT: Please change the designation at Tobacco Flat from "range emphasis" to "mule deer habitat emphasis." (1638)

RESPONSE: Deer from the Sherwin Buttermilk herds migrate through this area. It is not considered a part of the Sherwin staging area. Management according to the Standards and Guidelines and changes to Prescription #11 will insure that habitat alterations in this area will not be detrimental to wildlife.

COMMENT: All of the area marked Prescription #4 on the map should also be ROS semi-primitive non-motorized to help protect the deer herds. (278)

RESPONSE: This is an unnecessary change to this Prescription. Emphasis in Prescription #4 areas is on deer.

COMMENT: Clarify the timber element. What exactly is meant by leave vegetation necessary for thermal cover and hiding? (2169)

WILDLIFE

RESPONSE: Hiding cover functions as screening for an animal. It is defined as the amount of vegetation that hides 90% of an animal at a maximum of 200 feet. Thermal cover refers to overstory vegetation that is used by an animal for thermo-regulation purposes. On the Inyo Forest, thermal cover is an important component for deer on summer ranges.

COMMENT: Management Prescription #4 - Mule Deer Emphasis. Under facilities, add: "Do not upgrade existing roads." Under range, change the first part of the sentence to: "Reduce AUMs or eliminate livestock grazing..." or add "and decrease grazing if this will benefit deer populations." Under recreation, add: "Allow no new development that would adversely impact deer." "Key mule deer habitat" as mentioned applies to "suitable winter range, summer range, fawning areas, and/or holding areas...". This description should include migration routes, a crucial component of the annual habitat requirements. In the DEIS II-48-55, add "migration routes" to the first paragraph under the summary for Prescription #4. (2170, 2190) (430)

RESPONSE: The emphasis in Prescription #4 is mule deer. Other resource management activities will be allowed only if they maintain or enhance these areas for deer. Additional direction that addresses these concerns will be incorporated into this prescription in the Final Plan and EIS.

COMMENT: Management Area #4 - June Lake Loop. I recommend the following addition under the description: "Portions of this area are important as summer range, migration routes, and holding areas for the Casa Diablo deer herd." A wildlife element should be added under Management Area Direction to read: "emphasize the importance of this area to the Casa Diablo deer herd." (1433) (54, 2170, 2190)

RESPONSE: Telemetry data has demonstrated the area between June Lake and Lee Vining as being important summer habitat for the Casa Diablo deer herd. A wildlife element reflecting this information has been added to Management Area #4.

COMMENT: Management Area #12 - Benton-Casa Diablo. Add: "Allow no new roads, road improvements, or other habitat alterations that would adversely impact deer holding areas, migration routes, or winter ranges." (2190) (2170)

RESPONSE: This Management Area is the winter range for the Casa Diablo deer herd of approximately 1500 deer. The winter ranges for this area are addressed under Prescription #4. The language under facilities in Prescription #4 will include the above concepts. Specific migration corridors in this Management Area will be addressed in the management area description along with directions applicable to these corridors.

COMMENT: The Doe Ridge area should not be changed. This is a major deer herd migration area. I think the continued expansion of the Mammoth-June Airport has already damaged this area to the extent that if anything else was done here it would be devastating. (1433)

RESPONSE: Research on Doe Ridge suggests that this area is not a critical migration corridor for deer. Approximately 30 deer were observed on a daily basis. A greater concern is the potential for impacts on non-game species and the Owens tui chub.

COMMENT: Management Area #5 - Glass Mountain. The description for this area should be changed as follows: "Some important deer winter range occurs at the extreme eastern end of the Management Area. An important migration corridor exists along the southern slope of the Glass Mountains. Various locations within this area provide summer range for deer." Add to the wildlife portion of the Management Area Direction: "Maintain value to deer of existing winter range, summer range, and migration corridors." (2190 (54)

RESPONSE: This Management Area is the main migration corridor for the Casa Diablo deer herd which passes around the south end of the Glass Mountains in the Watterson Trough and Watterson Canyon areas (Management Area #12), and parallels the Owens River at the base of the Glass Mountains (Management Area #7) to the staging area in the Arcularius Ranch/Bald Mountain vicinity (Management Areas #5 and 7). Another migration corridor crosses around the north end of the Glass Mountains and is used in light snowfall years. Approximately 1250 deer (out of 1500), migrate along these corridors to summer habitat. The descriptions of Management Areas #5, #7 and #12 have been modified to include this information.

COMMENT: Management #18 - Inyo Mountains. I recommend that a wildlife element be added that states: "Water sources will be developed for mule deer and other wildlife where possible". (1433)

RESPONSE: We have added an element similar to your suggestion.

COMMENT: There is not enough census data on mule deer to set population goals in the Inyo and White Mountains. In essence, management goals cannot be met until this occurs. Population estimates have been formulated and used in harvest management decisions since 1982 and goal populations were set in this same year as published in the Esmeralda Resource Area Habitat Plan. The current population estimate for the White Mountains (1985-86) is 400 deer (92 bucks, 202 does, and 107 fawns) in 240 square miles of habitat. (0282)

RESPONSE: Population estimates were derived from the Inyo-White Mountain Deer Herd Management Plan which was cooperatively prepared between the Forest Service and the California Department of Fish and Game.

COMMENT: A major omission in the DEIS is any discussion of the impacts of future alpine skiing development on the deer. An increase in SAOT for alpine skiing is proposed to be achieved by placement of development within major deer migration corridors. If this occurs, it is very likely that deer populations will decrease much more dramatically than estimated, as the counter-balancing range improvement policies are so weak. (1631)

RESPONSE: This is discussed in the environmental consequences section for wildlife in the EIS for the Preferred Alternative which recognized a 2% decrease in mule deer on the Forest as a result of human intrusion and potential development on portions of deer habitat such as migration corridors, fawning areas, and holding areas. The majority of deer from the Sherwin/Buttermilk deer herds cross the Sierra and summer on the west side. Approximately 3,000 deer (50% of these animals) use holding areas and migration corridors associated with potential ski area development. In addition, approximately 1250 (out of 1500) from the Casa Diablo deer herd migrate to the June Lake area. Approximately 250 of these cross the Sierra through potential ski area developments and summer on the west side. The remaining deer summer on the east side of the Sierra, mostly between June Lake and Lee Vining. Many of these also cross areas that are being proposed for ski development such as Hartley Springs and portions of June Mountain slated for expansion. The Forest is committed to protecting important winter ranges, migration corridors, holding areas, and summer habitats. Modifications have been made in the Standards and Guidelines, Management Prescriptions, and Management Area Direction Final Plan and EIS to underscore this commitment.

COMMENT: In the Preferred Alternative discussion on DEIS II-61, change: "Do not increase cattle grazing on key deer winter range" to "Do not increase cattle grazing on key deer winter range or other critical habitats." (2170) (1638)

RESPONSE: The Plan does not recommend increasing cattle on important deer habitats. The Final Plan recommends maintaining AUMs at the current level; there will be no increase.

COMMENT: In the Preferred Alternative discussion on DEIS II-62, modify the Preferred Alternative so that the planned reduction does not occur. The planned reduction is inconsistent with (1) the theme of the PRF (DEIS II-60), (2) the objective listed on Plan IV-14 of increasing deer 20% in the Inyo by 1995, and (3) the Forest-wide Standards and Guidelines for mule deer which state that the Forest Service will "maintain or enhance the quality and integrity of key winter ranges, holding areas, migration routes and fawning areas for mule deer." (2170) (65, 351, 487, 1634, 2190)

RESPONSE: The Forest has a commitment to maintaining or enhancing the quality and integrity of key winter ranges, staging areas, migration routes and fawning areas for deer. A slight decrease in deer numbers is anticipated as a result of recreation oriented developments that will occur on habitats that are not considered important for the majority of deer but are used by deer at lower intensity levels. The increase of 20% is an RPA goal that is used as a comparison for the alternatives. This goal exceeds those set in the deer herd management plans. The goals of most deer herd plans are to insure that habitats are managed so that deer populations remain at existing levels and to improve the buck/doe ratios where necessary. Modifications in the Standards and Guidelines, Management Prescriptions, and Management Area Directions have been made in the Final Plan and EIS to underscore the commitment to protect important habitats.

COMMENT: The statement that "wildlife habitat would be managed with the objectives of minimizing the Forest-wide reduction of deer habitat capacity..." (DEIS II-58) is unacceptable. Eight management plans have been developed for herds on the Forest. These plans call for maintaining or increasing deer populations, i.e. maintaining or improving habitats. Accordingly, the preferred objective for deer habitat should state: "Maintain or increase the Forest-wide deer habitat capacity." (1617)

RESPONSE: The deer herd plans are incorporated as part of the Forest Plan.

COMMENT: All deer herd plans call for increases in deer numbers and use, yet hunter use of deer from induced habitat improvement projects remains at 0 days (DEIS II-66, Figure II-4). The larger the deer herds and better the habitat, the more the use will be. We consider the amount of time spent in the field greater than your prediction. The source of the Forest's low figures should be cited. (2190)

RESPONSE: The deer herd plans, for the most part, call for maintaining deer numbers at current levels. The major goal on the Inyo relative to deer is to maintain or enhance the quality of winter migration, staging and fawning habitats. The main factor that will increase hunter use will be increasing the ratio of bucks to does, and hence harvestable animals. Since management direction for harvest is a Department of Fish and Game responsibility, the Forest Service has no control over this facet of management.

COMMENT: We request that the statement dealing with cattle damage to fawning habitat be changed to "range management practices that prevent cattle from degrading specific fawning areas will be instituted." (Plan III-24) (2190)

RESPONSE: Refer to the Standards and Guidelines for range. The allotment management plans will provide specific methods to protect fawning areas.

COMMENT: This section (Plan III-39-44) states that these herds rely most heavily on Forest lands for winter range. This is true for only some of the herds such as the Goodale Herd. Other herds, such as Casa Diablo and Mono Lake, rely almost entirely on the Forest for summer range. (2190) (176, 1433)

RESPONSE: The EIS Affected Environment chapter has been updated to include additional information.

COMMENT: Management Area #3 - Walker-Parker. The following statement should be added to the description: "Portions of this management area are important as summer range to the Casa Diablo deer herd." Also, please add a wildlife section under management area direction that says "emphasize the importance of this area to the Casa Diablo deer herd. Management decisions will reflect that importance." (2190) (2170)

WILDLIFE

RESPONSE: The description for Management Area #3 will be modified to include research findings. A wildlife element similar to your suggestion has been added to direction in Management Area #3.

COMMENT: DEIS IV-164 (wildlife indicators). Recent research of the Casa Diablo deer herd indicates that many, if not most, of these animals summer on the Forest. The same may also be true of the Mono Lake and possibly East Walker herds (research upcoming). This fact indicates the importance of forest summer ranges for deer, large areas of which are found to be degraded for deer use by livestock. This should be mentioned in the DEIS section on wildlife indicators. (DEIS IV-164) (2190) (54, 2170)

RESPONSE: This is reflected in this section, in the Affected Environment and direction for specific management areas.

COMMENT: The forecasted 2030 environment ignores the impact on deer migration due to Sherwin Bowl alpine ski development. (351)

RESPONSE: The Environmental Consequences section states that the estimated 2% decline in deer is from developed recreation i.e. possible ski area development. The Plan has a commitment to maintaining or improving important habitats for deer.

COMMENT: The RPA goals state that deer numbers should increase by 20%, yet the RPA alternative proposes a 47% decline in deer numbers on the Forest. It appears that this alternative does not adequately consider the 1980 RPA goals for wildlife, especially deer, and is contrary to the intent of Congress in sections 4 and particularly 5 (C)(1) of the Act. (2190)

RESPONSE: The RPA goal for increasing deer by 20% was displayed in the Amenities and the Wildlife/Recreation Emphasis Alternatives. The RPA Alternative looked mainly at commodity oriented resources.

Peregrine Falcons

COMMENT: How can only two Peregrine pairs be indicators except of their own survival? (2178)

RESPONSE: Peregrine falcon goals must be viewed in relation to the entire Sierra Nevada and the specie's range. The Pacific Coast Recovery Plan for the American peregrine falcon calls for 10 pairs in the Sierra Nevada Management Area. The Inyo National Forest can provide a minimum of 2 pairs, and possibly 4. The Inyo has had an aggressive hacking program to recover this species on the east side of the Sierra Nevada and has exceeded the requirements set forth in the Recovery Plan.

COMMENT: The Preferred Alternative is inadequate for protection of the endangered peregrine falcon, as the Alternative plans for only two pairs in the fifth decade, whereas alternatives AMN and AMB plan for four pairs. (744) (225, 232, 1108, 1565, 2190)

RESPONSE: The Pacific Coast Peregrine Falcon Recovery Plan allocated two nesting pairs to the Inyo. Current management activities could result in four nesting pairs, but for purposes of the Preferred Alternative, we displayed two pairs.

COMMENT: Incorporation of the guidelines from both the "Pacific States Recovery Plan for the American Peregrine Falcon" and the "Pacific States Bald Eagle Recovery Plan" as they relate to the Inyo National Forest. (1108) (74, 225, 1411, 1532, 1566, 2047, 2178, 2190)

RESPONSE: Having these cited in the Standards and Guidelines for these species is adequate. The Inyo is currently exceeding the requirements stated in these recovery plans. The Forest has taken an active role in the reintroduction of the peregrine falcon into Eastern Sierra Nevada habitats. We've also conducted annual mid-winter bald eagle surveys in cooperation with the USFWS and are insuring protection of winter foraging areas and roost sites on the Forest.

COMMENT: Peregrine falcon. The public should be informed as to the status of the eight fledglings that were introduced in 1983 and 1984. Also, where is potential nesting habitat? (1634)

RESPONSE: Status is documented in a written report that was published in the 1986 Western Section Transactions of the Wildlife Society. The Supervisor's Office in Bishop has documentation of potential nesting habitat.

COMMENT: With respect to Peregrine falcons, on Page III-127, the DEIS indicates that the species is Federally listed as an endangered species. It should be added that this species is also a State of California listed endangered species. (2190)

RESPONSE: This has been added to the Affected Environment section.

Sage Grouse

COMMENT: Concerning sage grouse, I recommend that Section A should be changed to "Allow no vegetation treatment in sage grouse habitat that might adversely affect this species." I also recommend that no occupancy or surface disturbing activities be permitted on a lek (strutting ground) and no occupancy or surface disturbing activities occur within one-half mile of lek from March 1 to May 30, annually. (1433)

WILDLIFE

RESPONSE: The Standards and Guidelines for sage grouse have been changed to address your first comment. The second statement will be added to the Standards and Guidelines with the dates changed to March 1 to April 30.

COMMENT: Your planning for a 50% decrease in sage grouse is unthinkable. (1648)

RESPONSE: This is an error. Since the inception of the Plan, the sage grouse population has nearly doubled. Implementation of the Plan should not adversely impact sage grouse.

COMMENT: Recent field work (1983-86) indicates a population estimate of 400 sage grouse for the Nevada portion of the White Mountains including the Mineral County portion. It is felt that excessive grazing in all areas of the White Mountains inhibits survival of sage grouse young. Additionally, competition for water and succulents near isolated springs and seeps is a factor contributing stress on adult sage grouse. Burning as a management tool in the bottom of trail and middle canyons has concentrated livestock grazing and impacts to sage grouse meadows nearby to the point of eliminating sage grouse use and causing secondary watershed damage in the form of erosion. To further compound the sage grouse habitat problems, the northern White Mountains were designated as a wild horse unit, and, as such, the horses cause considerable damage to meadows. (282)

RESPONSE: Grazing impacts and fire suppression are thought to be significant historic impacts on grouse in the Eastern Sierra. These contributed to increased browse densities, decreased herbaceous component in the understories, and an increase of annual exotic invaders. Currently, livestock could remove understory vegetation important as food or cover for nesting and brood rearing habitat, but a larger concern are impacts on mountain meadows for summer habitat. Research has demonstrated that light or moderate grazing can enhance species composition in these areas for grouse. Forest-wide Standards and Guidelines for sage grouse and riparian areas should insure that integrity of habitat for this species will be maintained.

COMMENT: Suspect the "maximum habitat capacity" for sage grouse (1,500) is too low. With improved range conditions and less grazing, I believe the population could swell to many times that. Nineteenth century qualitative accounts suggest there may have once been tens of thousands. (1548)

RESPONSE: Suitable habitat for this species was undoubtedly higher in historic times than at present (see previous comment). Under current conditions the estimated population is approximately 2,000 birds. Decreasing grazing would probably not result in a dramatic increase in birds unless accompanied by large scale revegetation projects to provide shrub/steppe communities that were thought to be here historically.

COMMENT: In the wildlife element for Management Area #7, rather than "maintain productivity...vegetative manipulation", grazing should be

abolished from areas inhabited by sage grouse. Regarding the protection of important sage grouse strutting and wintering grounds, how do you intend to do this? I cannot find anywhere in the Plan a detailed description. (1634) (140)

RESPONSE: See above comments. Forest-Wide Standards and Management Area Direction for areas occupied by sage grouse should insure that integrity of habitats used by this species is maintained or improved.

COMMENT: Management Area #7. Under the Management Area direction for range should be included: "Undertake vegetation manipulation activities that benefit grazing only when such work will not degrade sage grouse habitat." (2190)

RESPONSE: This or a similar statement is being added to this Management Area direction.

Sensitive and Threatened and Endangered Species

COMMENT: The CDFG believes that for the Forest to comply adequately with the letter and intent of the National Forest Management Act of 1976, and in particular Section 1604 (G)(3)(B), the Plan must demonstrate the ability and intention of the US Forest Service to manage and preserve all of the rare animals and plant taxa presently found in the Forest. The indicator species chosen in the 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 CDFG 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 (i.e. species listed in the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California and not included in any of the above categories). 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 Forest Service Manual 2672.31 and 2672.32. Specific means for attaining these objectives, including, but not limited to, the dedication of Research Natural Areas and Special Interest Areas should be described. (2190) (1108, 2047)

RESPONSE: Refer to the responses in the diversity section of this Appendix. Threatened, endangered and sensitive plant and animal species are given the highest priority in terms of management action. Indicator species in the Plan include essentially all listed and sensitive species that management activities will impact. It is important to remember that MIS covers several broad species groups. For example, sensitive plants found on the Inyo are also MIS and are being managed as such. The diversity section describes the interrelationships of MIS, diversity, and allocation of RNAs and SIAs to insure that all species on the Inyo, particularly those that are threatened, endangered, and sensitive will be protected. Standards and Guidelines, and

Management Direction for managing these species set quantifiable objectives for managing both federally listed and sensitive species on the Inyo.

COMMENT: The specific locations and sizes of areas to be managed for threatened, endangered, and sensitive species should be disclosed. Because the alternative established specific direction which will reduce habitat and abundance, the extent of habitat to be retained must be shown in detail for each species. (2190)

RESPONSE: The Plan is designed to provide direction for the management of resources. The Plan quantitatively states changes for habitats or species. Site-specific details are beyond the scope of the Forest Plan. Particularly when dealing with threatened, endangered, or sensitive species, it may not be wise to disclose this information in a document that will be circulated to the general public. This may further jeopardize these populations. Specific information is located at the Supervisor's Office or at the Ranger Districts. Management Direction in the FEIS/Plan will not reduce habitat of threatened, endangered or sensitive species. Direction in the Plan will insure that habitats of these species are maintained or improved.

COMMENT: For the species in which viability is a concern (i.e. all threatened and endangered, 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. Because fish are also vertebrates, there should be a statement that commits the Forest to maintaining viable populations of all fish species. (2190) (1097)

RESPONSE: There is a great deal of debate amongst ecologists regarding the concept of viability. The textbook answer is that in order to insure the continued existence of a species (viability), there needs to be a minimum of 500 reproducing individuals within a species or sub-species. The main concern for viability is threatened and endangered species. On the Inyo, these equate to bald eagles (winter habitat) and Peregrine falcons (nesting and foraging habitat), Owens tui chub, Paiute cutthroat trout and Lahontan cutthroat trout. These species are being managed at levels above those required in the prescriptive recovery plans, and cooperatively with other agencies. Other species of concern that are designated as sensitive are addressed with respect to the various resources that could potentially impact them. The Standards and Guidelines and Management Area Direction were developed to maintain habitats for these species at levels above the Regional recommendations.

COMMENT: Rare animals. We are particularly concerned that the Regional philosophy for management provide the minimum acceptable level of performance necessary to accomplish objectives; neither more nor less. (2190) (422)

RESPONSE: Management Direction for threatened, endangered and sensitive species is specific in that habitats for these species will be maintained or improved. The Plan demonstrates a commitment to recovering federally listed threatened or endangered species, and to insuring that sensitive species do not become threatened or endangered.

COMMENT: Species-specific guidelines should include reiteration of the Regional guidelines which provide for the management and protection of spotted owls (Strix occidentalis). (1108) (74, 225, 1411, 1532, 1566, 2047, 2190)

RESPONSE: This is not necessary. Standards and Guidelines state that if spotted owl territories are located, then they will be managed according to the Regional guidelines. Currently, no territories have been located in habitats that will be placed under timber management on the Inyo.

COMMENT: The Inyo Forest clearly is aware of the threats to spotted owl habitat throughout California and the Pacific Northwest (Plan III-42). Further, it is stated that red fir stands have the highest potential for spotted owl nesting habitat. Neither the Plan nor the DEIS specify areas for spotted owl management areas. Without recognition of SOMAs, how can the Inyo develop the special management plans recognized by the Inyo as necessary to protect the owl? At this time, we urge the Inyo Forest to attempt to verify the spotted owl sightings mentioned in the Plan and determine what constitutes preferred habitat. (1411)

RESPONSE: Intensive spotted owl inventories are ongoing in the red fir belt near San Joaquin Ridge; we have not verified any spotted owl territories. The area that does have potential for spotted owl habitat is the area in the vicinity of Monache Meadows. Both areas have been removed from the suitable timber base, in part for spotted owls. No management activity is being planned in these areas that would detract from their use as spotted owl habitat. The Monache area will be intensively inventoried in 1988.

COMMENT: Modify the first Standard and Guideline listed for threatened and endangered wildlife species (IV-39) to include making the Plan consistent with the recovery plans that have been developed for the listed species that now occur or have historically occurred in the Forest. Add a statement outlining a commitment to obtain needed baseline data and validate the models used to evaluate the impact of management activities on fish and wildlife. If good evidence already exists showing that a listed or candidate species is currently in a declining or depleted state, prohibit activities that would keep the situation from improving until recovery is well underway. (2170)

RESPONSE: This is being done on the Inyo National Forest. Local recovery plans have been developed for the peregrine falcon and Lahontan cutthroat trout. These plans tier off of the USFWS recovery plans for these species. In addition, Management Direction for lands administered by the Inyo Forest exceed those required in the recovery plans for federally listed species.

WILDLIFE

COMMENT: I believe it is a violation of 36 CFR 219.19 (A)(7) to give "low priority" to inventory of bald eagle roosting sites (Plan Appendixes, Wildlife). (1634)

RESPONSE: These priorities reflect anticipated budget limitations and do not imply that roosting sites will not be adequately surveyed.

COMMENT: On DEIS IV-166, please correct this statement: "No opportunities for increasing bald eagle habitat have been identified." The Lee Vining and Rush Creek watersheds, since the recent restoration of minimum flows, have been increasingly utilized by wintering bald eagles. This habitat should be recognized, and protection should be given to the waterfowl and prey base, the roost sites and the open water required by this species. (1617) (1638)

RESPONSE: This comment will be passed on to the Mono Basin Scenic Area team. Up to two bald eagles have been observed in the winter using Rush Creek. If flows are maintained in Rush Creek and Lee Vining Creek, these would provide marginal bald eagle winter habitat.

COMMENT: With respect to bald eagles, first, the same comment made regarding peregrine falcons applies: add it as a California listed endangered species. Second, DEIS I-6 lists the Bald Eagle Draft Recovery Plan. This should be updated to read "Pacific States Bald Eagle Recovery Plan (1986)." (2190)

RESPONSE: These corrections will be included in the EIS/Plan.

COMMENT: On DEIS II-47, a Forest-wide Standard prohibiting new winter uses of recreation developments within .25 miles radius of the "identified winter roosting area." This distance would only be appropriate if a specific management plan for the bald eagle area were developed and it justified such a radius. However, without such a plan for the area, the Standard should provide for a minimum of an 800 meter radius prohibiting development and intense human uses. (2190)

RESPONSE: Currently, we see no need to extend this distance. The Inyo will produce a winter bald eagle management plan. If during this process, a need is identified to extend distance of winter roost sites to recreation developments, then this will be displayed in that plan.

COMMENT: Four Forest-wide Standards and Guidelines are recited for bald eagles. Standard and Guideline #1.C. refers to wintering areas. To be consistent with the existing recovery plan, this Standard should direct management to maintain existing winter habitat sufficient for 20-30 bald eagles. Also on the same page, Standard and Guideline #1.E. should be added to direct the Forest to implement the Pacific States Bald Eagle Recovery Plan prepared for the US Fish and Wildlife Service. (2190)

RESPONSE: The reference to the Recovery Plan is included in the Final Plan.

COMMENT: The U.S. Fish and Wildlife Service presently considers Mono Basin populations of mountain beaver as a candidate for threatened or endangered species listing. Important to carefully evaluate the status of mountain beaver prior to making Forest management decisions. (127)

RESPONSE: Application of the Forest-wide Standards and Guidelines for riparian areas should ensure habitat protection for the sub-species of mountain beaver. This comment will also be addressed in the Mono Basin Scenic Area Plan.

EDITORIAL COMMENTS

COMMENT: Range management guidelines for riparian area protection (DEIS, IV-109). I could not find the range management guidelines. You must be talking about Standards and Guidelines? (29)

RESPONSE: Yes.

COMMENT: To promote true stewardship of the environment, the Inyo Forest should use only 100% recycled paper in its official documents, letters, memos and other information. (150)

RESPONSE: The Forest is required to use office supplies purchased through the General Services Administration because there are existing contracts with specific suppliers that save taxpayer dollars.

COMMENT: The County strongly supports the identification of long-term effects groundwater resources in the Long Valley Caldera (Appendix B).
As a general comment regarding implementation plans, inventories, and research and technical data needs, the listing of future research should be prioritized and presented with set time frames. Regarding the Appendix, it is suggested that the glossary of terms in the EIS Appendices also be included in the Plan Appendix for easy reference. Regarding the Plan and EIS, all policy language contained in the EIS should be incorporated into the Plan. The present format is difficult to use and can result in this reader gaining only a partial understanding of the Forest Plan's intent. (1638)

RESPONSE: The Research and Technical Data Needs section is meant for use as a general list of needs. The times and priorities for completing these will be determined when the Plan is approved. We have incorporated the same Glossary in both documents; have attempted to be consistent with language; and have included Indexes to help the reader understand these documents and find relevant information.

COMMENT: The plan is long and the management direction to the unit manager seems to spread out, divided among the Forest-wide Standards and Guidelines, Prescriptions, and Management Area Direction. All this direction should be consolidated and simplified so a person can understand and use the Plan.

EDITORIAL COMMENTS

What applies to what land base will be subject to debate when a complex project is proposed. It would appear that some redundancy is occurring in the forest direction. For example, under Range (Plan IV-98), the direction could be combined with Standards and Guidelines. There is nothing unique about this direction. (29)

RESPONSE: The Final Plan is more redundant than the Draft because the public asked for similar language in various sections. The format is consistent with Region 5 direction for the construction of all Plans in this Region.

COMMENT: The four species that are state-listed as rare (DEIS III-85) should be mentioned also on Plan III-31. (1634)

RESPONSE: This specific kind of information is not appropriate in the Summary of the AMS.

COMMENT: To say that the demand for habitat for these species is found primarily in the scientific community is extremely anthropocentric. Just because plants and animals cannot speak does not mean that they too do not have demands for habitat! (1634)

RESPONSE: The "demand" in this sentence refers to human demand. The plant and animal communities have "needs" ,"requirements" or "preferences."

COMMENT: "Decadence" is a pejorative term that legitimizes the destruction of old growth, or virgin forest. This term should be replaced. (1634)

RESPONSE: "Decadence" is a forestry term. It does not legitimize anything. It describes the condition of a tree, a stand of trees, or a forest. As "young", "middle-aged" and "old" describe the condition of a person.

COMMENT: IV-47. Are we talking a "nordic ski area" or a "potential nordic ski area" ? (1634)

RESPONSE: This Prescription has been eliminated.

COMMENT: IV-50, Range. What is FSM 2323.2? Please define. (1634)

RESPONSE: FSM 2323.2 refers to the Forest Service Manual for Wilderness Management. We have defined it in the text and it will be included in the Glossary.

COMMENT: The Appendix in the Plan seems like it would be better placed in the main Appendix volume. (29)

RESPONSE: Much of the appendix material in the Draft Plan was included for reference by the public and has been deleted from the Final. Some of the appendices are required by the Regional Office.

COMMENT: IV-1. "Should be" or "Must be"? Minimum Management Requirement (MMRs), which are mandated by NFMA, help to determine the Forest-wide Standards and Guidelines. (1634)

RESPONSE: Minimum Management Requirements are the basis for Forest-wide Standards and Guidelines.

COMMENT: We recommend that the figures list within the table of contents be modified to show tables and figures separately. We found it confusing when looking for the maps (only one is included in the text portion of the subject plan). Listing the table separately would allow quick inspection of actual illustrations. (25)

RESPONSE: The document has been reformatted to improve it.

COMMENT: Is "9000 foot elevation" a misprint (Plan III-34)? Elsewhere the 8000 foot figure is used (Plan IV-122,135) and I was told that it is this figure which is being recommended. I am in favor of the 8000 foot restriction which will protect bristlecone pine and other high zone tree species. (971)

RESPONSE: The 9,000 foot figure is incorrect. It should be 8,000 feet.

COMMENT: Plan I-13 should list the 1977 Interagency Snowmobile Use Map (revised)? (1099)

RESPONSE: This map will be updated in the update of the Motor Vehicle Use Plan, which will be done when the Plan is implemented with full public involvement.

COMMENT: Plan III-26, 4th paragraph. This needs to be rewritten to incorporate the final Town of Mammoth Lakes General Plan. (1099)

RESPONSE: This has been done.

COMMENT: On Pg. IV-107, 15,523 acres (including Sherwin Bowl) is designated as Prescription #14, yet the DEIS Appendix H-4 and H-5 declare a total of 15,900 acres for Prescription #14. What is the correct figure? (1634)

RESPONSE: 14,229 is the final corrected figure in the Plan.

EDITORIAL COMMENTS

COMMENT: Appendix A - Needed Resource Implementation Plans and Inventories.
A-1 Please add Avalanche Management Plan under "Protection"
A-2 Please add under "Recreation"
Potential Ski Area Assessment Plan
Coordinate with local jurisdictions and general plans in the preparation of recreation residence future use determination plan..
A-3 Please revise second geology inventory to include avalanches. (1638)

RESPONSE: The Forest is not in a position at the present time to produce an Avalanche Management Plan or conduct an inventory to include that information. Potential ski area development is addressed in the Plan in Prescriptions, Chapter IV. Recreation residence future use determinations will be completed in recreation composite plans.

COMMENT: Appendix A (Plan A-3) neglects the fact that an Interagency Recovery and Conservation Plan already exists for Sierra Bighorn which is listed on Page I-3 as incorporated unchanged. (1097)

RESPONSE: Appendix A in the Draft Plan lists those plans and inventories that are needed. Appendix A in the Final Plan lists both existing plans and incorporates the list of those that are needed.

COMMENT: In the DEIS, the need for definition of unacceptable damage is extremely important throughout the document for all resource areas. (29)

RESPONSE: Unacceptable damage is a subjective term that is site specific. Some definitions have been included in the document when it is possible to identify them.

COMMENT: The DEIS has so many figures that it is impossible to comprehend. With almost 4 pages of lists of figures, I question whether or not all these are necessary. (29)

RESPONSE: Many of these are required. Others are included because of specific requests or concerns. They are definitely difficult to comprehend.

COMMENT: My name was inadvertently left off the list of those consulted (DEIS Chapter VI). I was consulted on a number of occasions by biologists on the planning team during the formulation of the document in question. (1097)

RESPONSE: We regret that your name did not appear in the Draft.

COMMENT: I object to this outcome. Would want to see the 2nd paragraph on II-118 in its place (DEIS II-61, 2nd paragraph). I also prefer the last paragraph of II-118 to the last paragraph of II-62. (134)

RESPONSE: Discussion to the potential environment in the year 2030 is intended to be a description of the objective or goal of the Alternative. It is speculation at best.

COMMENT: I'd like to make a few suggestions on how your DEIS could be better done. Most importantly a Table of Contents. An index and better titled maps would be helpful too. Perhaps a shorter summary should be made available (30-50 pages) that would outline the specific Plan so such a voluminous document would not need to be waded through. (2136)

RESPONSE: Glossaries and Indexes have been added to both the EIS and the Plan. A summary of the Plan is available to provide needed information in a much shorter and easier to understand format. The map package has been redone.

COMMENT: The use of the word "timberline" reflects a single use of the Forest for sawlogs. "Timberline" is a colorful word preserved more for its romantic connections than its accuracy. Timberline refers to the marketable quality of the wood which diminishes at high altitudes. The correct term is "tree-line". There is no timber at tree-line. (381)

RESPONSE: "Timberline" is used in this document in its true sense "the upper limit of arboreal growth in mountains" (Webster's). It does not reflect sawtimber production.

COMMENT: The District boundary east of Crowley Lake is inaccurate on the Management Area map. (1099)

RESPONSE: We have eliminated District boundaries on the map because they were confusing to the public.

COMMENT: A map showing Forest types and harvest areas is needed. (128)

RESPONSE: We have eliminated several maps in the final documents. They are extremely costly to produce and it is not appropriate to produce maps for one resource and not others.

COMMENT: The Management Prescription maps should have included all proposed and present ORV trails, along with indications of locations of sensitive biological resources such as riparian areas and important wildlife habitats. (2170)

RESPONSE: The 1977 Interagency Motor Vehicle Use Plan will be updated during Plan implementation. The public will be involved in this effort and a new map will be produced showing both winter and summer OHV/OSV routes. It is not appropriate to indicate the locations of sensitive resources on public maps.

EDITORIAL COMMENTS

COMMENT: Series of overlay maps of sufficiently large scale to show various conflicting and compatible resources in the area - developed recreation, geothermal, ski, ORV use, road networks, roads and routes to obliterate, soils, slopes, vegetative types, earthquake faults, volcanism, urban development, fuelwood areas, wildlife habitat, migration routes, and other resources. (2178)

RESPONSE: This is not feasible, given the number of documents that are distributed to the public. This information is available in District Offices and at the Supervisor's Office in Bishop.

COMMENT: Needed information: Map of forest areas by species subject to timber and fuelwood cutting pressure. (2178)

RESPONSE: This is not available.

THE TOWN of MAMMOTH LAKES CALIFORNIA

P O Box 1609, Mammoth Lakes, California 93546
619-934-8983

Dennis Martin
Inyo National Forest
873 N Main Street
Bishop, CA 93514

March 11, 1987

Dear Mr Martin

Thank you for the opportunity to comment on the draft Inyo National Forest Land and Resource Management Plan Being in the middle of adopting a General Plan for the Town, we can appreciate only too well the magnitude of the effort required to comprehensively plan for future uses of the Inyo National Forest We are pleased with most of the plan and look forward to its adoption Our specific comments are listed below

Proposed Land Management Plan

Alpine Skiing

1 Because of the difficulty of accurately projecting skier demand, the 39,000 SAOT capacity over the next ten years should be a projection, not a limit Threshold capabilities should be considered

2 Future increases in SAOT should emphasize the development of areas adjacent to existing ski areas first The ability of existing infrastructure to handle these increases must be addressed Permitting of additional Alpine skiing must also consider the entire state, and allow development within areas of lowest impact, based upon need.

3 The Hartley Springs and Yost Creek areas should be changed to management prescription 14 (potential ski area)

Nordic Skiing

1 We support consideration of a cross country skiing resort in the Dry Creek/Inyo Craters area, subject to the usual environmental analysis, including impacts on existing users

Energy Development

1 The plan should stress that geothermal wells and plants be

sited and designed to minimize all adverse impacts on all other Forest resources, including recreation

2 Hydroelectric development should be restricted to those proposals which pose no possibility of adverse effects on fisheries or streamside recreation

3 Large, visually obtrusive wind farms should not be allowed Limited applications of wind power in visually protected areas might be acceptable

4 Page III-19 should include a recommendation that there be a full EIS to assess the combined impact of development within the KGRA Site specific environmental reviews must include cumulative impact analyses.

Wildlife and Fisheries

1 The Forest-wide Standards and Guidelines for fisheries (pages IV-22) should include overall water quality standards and guidelines for control of runoff and maintenance of stream flows These impacts can result from activities well beyond the stream banks which can be just as serious as livestock trampling and chiseling

2 Generally, the Forest-wide Standards and Guidelines for wildlife are good and we support them The section on Mule Deer should help maintain healthy herds if fully implemented

3 Emphasis on deer habitat management should be placed in Management Areas 8 and 9.

4 No management activity which adversely affects the Hot Creek Fish Hatchery or the Hot Creek Wild Trout stream should be permitted

Timber Management

1. All the areas designated for high level timber management between June Lake and Mammoth, west of 395, and south of Indiana Summit should be included within Management Prescription 9, Modified Timber Management

2 Before any entry into the Red Fir areas east of the San Joaquin Ridge is considered, the Forest Service should do more research to assure that adequate restocking within five years is possible

3 Rather than consider special yarding techniques for slopes over 30%, those slopes should be left uncut The Forest Service should continue its practice of over-the-snow logging In areas where over-the-snow logging conflicts with winter recreation, timber harvesting should be subordinate to that recreation

Wilderness Management

CITY AGENCIES

1 The Visual Quality Objective of preservation should be applied to all views from the wilderness areas as well as views within wilderness areas Management Prescription Number 1 should include policies which

A Limits use in environmentally sensitive areas and areas which can only accomodate small numbers of visitors because of limited campsite availability, and

B Adopt the policy of the Minarets Wilderness Management Plan, limiting commercial use in wilderness areas

Recreation Development

1 The Town supports all the policies of Management Area 9 except Number 4 This should be modified to permit expansion of Shady Rest Park to the east.

2 The Town also supports the emphasis on day-use recreation in the Mammoth Lakes Basin (Management Area Number 8)

3 Concerning Trails, the Town would like to see dog sled trails in the Inyo National Forest Plan at the following areas The Saw Mill cutoff road, Sherwin Creek Road and any additional track in the meadow area with the approval of the equestrian center and the area west of highway 395 known as the Mammoth Scenic Loop area

In addition, snowmobile corridors should be maintained between June Lake and Mammoth Lakes At the present time, the Town Trails Committee has shown a snowmobile trail in the Lakes Basin area

4 The Town would like to see the donation, acquisition, Special Use Permit or land exchange of area east of Shady Rest Park, north of Highway 203, or south of Highway 203, east of Meridian or the area east of the South Gateway for a possible golf course The area would cover approximately 170 acres

Lands

1 The Town supports the statement in the second sentence of item number one under disposal of lands

2. The plan should consider the donation, land exchange or acquisition by the Town of the area known as the South Gateway area This area could be utilized for a combination park and civic center area, a swimming pool or other uses needed by the Town This area should be connected to the Mammoth Creek Park and extend from 203 to the Mammoth Creek Road, covering the area between Town and 395

3 The Town would like to see the donation, and exchange or acquisition by the Town of the area of land between the Community

Center and Minaret Road (Highway 203) This area is north of Forest Trail and south and west of Minaret Road (Highway 203).

4 The Town would like to see a possible donation, land exchange or acquisition by the Town of the area north of the Fire Station, approximately 35 acres known as the "compound"

Cultural Resources

1 In the Inyo National Forest, there is no mention of the area known as the Mammoth Consolidated Goldmine. The Town would like to have this area designated to be maintained as a historical site

Environmental Impact Statement

The EIS should address the cumulative and growth-inducing impacts of all development including geothermal and recreational.

Alternatives

Alternative LBU (Budget Reduction) should have been considered in detail. Many of the mitigation measures in the preferred alternative require extensive monitoring and enforcement. There is no analysis of what will happen if those efforts are not funded.

Page II-60, paragraph 3, says that the maximum level of ski area development during the ten year planning period is that projected in the Town General Plan However, that plan only considers development of Mammoth Mountain to 24,000 SAOT and Sherwin Bowl or some other area. The Town plan does not consider expansion of June Mountain or its effects on Mammoth Lakes. Because of limited facilities in June Lake, expansion of June Mountain will result in an additional demand for services in Mammoth Lakes The Forest Service LMP and EIS should either describe a level of development that is considered in the Town plan or eliminate the references to the Town plan and consider impacts of increased development on the Town.

Page III-4, paragraph 2, Water should be included under the demands placed upon the Inyo National Forest. Los Angeles's use of Owens Valley and Mono Basin water has clearly had an economic effect on the Inyo

Page III-10, first paragraph states that "it is expected that an increased local population could stabilize the fluctuating tourist economy of the 1970's " This statement should be deleted The population growth envisioned by the Forest Plan would be fuelled almost entirely by winter recreation development and, therefore, would more likely lead to increased economic instability

Page III-69, paragraph 3, states that ski area use has

increased by approximately 12% per year for the last ten years To achieve this high growth figure, the winter of 1976-77 must be used as a base year That winter the area experienced a severe drought and skier use dropped by 50% from the previous year More accurate growth figures would be compounded rates of 6% per year since the 67-68 season and 1% per year since the 79-80 season

Page IV-70, paragraph 6, implies that all Nordic skiing is dispersed recreation Furthermore, it implies that all Nordic skiers have the same needs This is not the case The experience provided by a resort of the type proposed for the Dry Creek area is more akin to the experience at an Alpine resort and will diminish opportunities for cross country skiers looking for an undeveloped setting The EIS should separate the two groups and consider the different needs of each group This comment applies to page III-74, paragraph 3, as well

Page III-109, first paragraph, states "The most significant sources of sediment are ski areas and rangeland " Paragraph 5 says "The only significant impact on water quality is sediment from ski areas and eroding wet meadows " These statements overlook the major impacts of runoff from community development This needs to be considered in the EIS

Page IV-41, first paragraph, needs to consider the impacts of increased runoff because of community growth, as well as increased demand

Page IV-55, paragraph 4, states that the demand for groundwater will nearly double There is no discussion of the likelihood of meeting this demand or of the possible impacts of increased withdrawals

Page IV-91, paragraph 3, same comment as page II-60

Page IV-156, first paragraph, following the indicators, needs to include the size of local communities as well as the level of developed site use

Because mitigation measures are mixed in with the text of the Land Management Plan, it is difficult and sometimes impossible to relate a specific measure with a specific impact

However, it appears that the Forest Service is relying heavily on enforcement to assure that the provisions of the plan will be met Given the present budgeting problems being experienced by the agency, procedures and policies should be implemented to protect Forest resources with minimal enforcement

Thank you for your consideration

Sincerely,

Gary Flynn, Mayor

GF/ts

CITY AGENCIES

MCWD

MAMMOTH COUNTY WATER DISTRICT

March 13, 1987

Dennis Martin
Forest Supervisor
873 North Main Street
Bishop, California 93514

RE Comments on Draft Inyo National Forest Plan

Dear Mr. Martin

The Mammoth County Water District supplies water and sewer service to the Town of Mammoth Lakes and sewer service to many facilities located on lands administered by the Inyo National Forest

The community has traditionally grown in response to the growth of recreation activities in the area. Expansion of the ski industry at Mammoth/June Mountain facilities and outdoor recreation in the summer are primarily located on Forest Service lands. However, many people enjoying the recreation opportunities of the area utilize the lodging facilities, eating establishments and other amenities located in Mammoth Lakes.

Additional growth in recreation activities must recognize impacts on the services provided in the Town of Mammoth Lakes. The water provided by this District presently comes from just two sources, the surface diversion in Lake Mary and one groundwater supply well. The District has a water right to divert 2760 acre feet of surface water from Lake Mary. However, during less than 100% normal precipitation year, the District cannot utilize its full surface water entitlement because of current physical constraints and the requirements of various water management agreements.

The District has drilled a large number of wells at 10 separate locations around the community, only one well is producing water of a quality and quantity that can be supplied as a potable domestic supply. We feel that we must be permitted to adequately explore the potential groundwater resources located under Forest Service lands in the vicinity of the Town. The additional development of any recreational activities in the vicinity of Mammoth Lakes is dependent upon the acquisition of additional, economically viable sources of domestic water supply.

P O BOX 597 • MAMMOTH LAKES CALIFORNIA 93546 • (619) 934-2596

The Forest Service and the Local government, including the District, must be partners in providing all services necessary to support additional development in the area. We look forward to working with the Inyo National Forest in assuring a quality recreational experience in this regard.

If you should have any questions or wish to discuss this matter please call me any time.

Very truly yours,

MAMMOTH COUNTY WATER DISTRICT

JAMES KUYKENDALL
General Manager

JDK sw

CITY AGENCIES

Department of Water and Power the City of Los Angeles

TOM BRADLEY
Mayor

Commission
RICK J. CARUSO, President
PAUL W. FRENEY, Vice President
ANGELA M. CHIA-ARRIA
CAROL WHEELER
WALTER A. ZELMAN
H. DIDIER DAVIDSON, Secretary

Leon H. Rhodes, General Manager and Chief Engineer
NORMAN E. NICHOLS, Executive Director of Water Services
DUANE L. CLORESON, Executive Director of Power
R. H. WALTERS, Director of Water Quality
JAMES W. MIDGLEY, Director of Water Supply
H. DAVID NAHAI, City Attorney
KENNETH R. PIZARRO, Chief Financial Officer

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March 13, 1987

Mr. Dennis Martin
Forest Supervisor
Inyo National Forest
873 N. Main Street
Bishop, California 93514

Dear Dennis:

Inyo National Forest
Proposed
Land and Resource Management Plan
(Water System Comments)

Thank you for the opportunity to review and comment on the Inyo National Forest Land and Resource Management Plan (Plan), and the Draft Environmental Impact Statement (DEIS), which were released on October 17, 1986 It is obvious that a great deal of time and effort went into conducting your studies and producing the Plan and its alternatives

The following are a number of general and specific comments on the Plan and the DEIS.

1 It is mentioned in several places in the Plan that it may be necessary to restrict cattle grazing currently allowed under U.S. Forest Service permits to local ranchers The Department would like to be included in any discussions with said ranchers, since cuts in numbers of animals allowed, or the length of time allowed on Forest Service permits, may mean the ranchers will be utilizing City-owned land to a greater extent than at present.

2. The Department would like to be included with the Forest Service in developing management plans involving rare and endangered species (e g., peregrine falcon reintroduction), when said plans could affect City-owned lands

3. Section IV-96 of the Plan states that the Forest Service should "initiate negotiations with the City of Los Angeles Department of Water and Power to manage

Grant Lake reservoir for the enhancement of recreation, visual, and other natural resource values." We are open to discuss such matters, however, since Grant Lake is an aqueduct storage and operational "reservoir", water levels will fluctuate greatly at different times of the year, and from year to year. The reservoir is currently managed, to the extent possible, to benefit recreational activities (with about 94,200 visitor days per year), but the very reason for the dam and the reservoir is to allow the Department to effectively manage the flow of water to the City We are concerned that this issue (and other water related issues) are being elevated to the level of a policy which very likely could have an effect on the City's water rights.

4. The Plan states in several areas that "lost (water) resources" are to be "recovered". This statement implies that the Mono Basin water resources utilized by the City of Los Angeles have not been efficiently utilized, but instead were "lost" to streams in the Mono Basin The people of Los Angeles depend on the water from the Mono Basin and have efficiently and effectively utilized it since the diversions began in 1941 Consequently, one cannot consider this resource as being "lost". Mr. Le Val Lund's letter to you, dated November 26, 1986, specifically details the history of the City's water rights in the Mono Basin, and we will not reiterate those rights at this time. There are other sections of the Plan, however, which we will briefly address

Section IV-91, 93, 119, 133, and 138 of the Plan states an intention to "strive to recover lost resources" by negotiating with public utility entities to return water to several streams from which the Department has the legal right to divert water. The Department has a legitimate interest in any actions on the part of the Forest Service that could violate these legal water rights. The following are specific comments on each of these streams.

a Section IV-91 and 93 refer to Lee Vining, Rush, Walker and Parker Creeks. The City has a legal right to divert water from Lee Vining Creek, Walker Creek, Parker Creek, and Rush Creek in the Mono Basin. The City's State-granted water rights on these creeks began in 1934 If a course of action for the Mono Basin is proposed that results in the

CITY AGENCIES

reduction of the City's water and energy resources, the Plan must also address the question of replacing this water and energy supply for the City of Los Angeles

b. Section IV-119 of the Plan refers to "rewatering" portions of the Owens River Gorge. The City owns riparian lands along both sides of the Owens River Gorge, as well as the water rights. The Forest Service's concern about "lost resources" has already been addressed by the Hot Creek Agreement, executed more than 40 years ago. The Hot Creek Agreement, entered into between the State and the City of Los Angeles, provides mitigation measures for the dewatering of the Owens River Gorge for power generation purposes. The City provided the State of California with the land, access roads, water rights, and about one-third of the construction costs of a fish hatchery at Hot Creek to replace fisheries in the Owens Gorge Today, Hot Creek Fish Hatchery is the largest of the four Eastern Sierra fish hatcheries, and is responsible annually for the production and planting of over one million catchable trout in the Inyo/Mono areas, as well as two million fingerlings, and 150,000 subcatchables. In addition, its eggs supply another half-million catchable trout planted from the Fish Springs Hatchery

As a natural part of the water diversion projects and the Owens Gorge Power Project, the City constructed Long Valley Dam, which created Crowley Lake Reservoir--one of the premier fishing lakes in the State and the largest water-related recreational facility in the Eastern Sierra. This facility, in addition to the benefits bestowed by the Hot Creek Agreement, more than replaces the fishery in the Owens Gorge. The Plan should also address the question of replacing the energy generating capacity lost to the City should water be returned to the Owens Gorge

c Plan Section IV-133 discusses rewatering sections of Big Pine and Division Creeks. The City is legally entitled to divert water from both Big Pine and Division Creeks The

City has a pre-1914 water right to divert water from Big Pine Creek for power use. The City also has pre-1914 water right to divert from Division Creek for municipal power use, as well as a State Water Resources Control Board licensed application to divert water from Scotty's Spring, a tributary of Division Creek

Big Pine Creek is normally wet below the Department's intake. This creek has not been completely dewatered. The City's hydroelectric facility at Big Pine has the capability and right to divert 50 cfs, but on a yearly average, only diverts about 29 cfs. The same is true of the diversion operations at the City's hydropower facility at Division Creek. The facility at Division Creek has the capacity and the right to divert a maximum of 8 cfs, but on a yearly average, only 6 cfs is diverted.

d. Section IV-138 of the Plan likewise discusses Cottonwood Creek. When the Creek flow is below the hydropower facility capacity, about one cfs is allowed to flow down the Creek from the intake point. Consequently, this Creek is usually wet. The Creek is normally dry only between the Los Angeles Aqueduct and Owens Lake--a distance of approximately one mile. The City's hydropower facility at Cottonwood Creek has the capacity and right to divert 24 cfs, but on a yearly average, only about 9 cfs is diverted.

5. The Sensitive Plant Species list, shown on III-86 of the DEIS, is outdated. In order to develop a management plan, it will be necessary to determine which species are truly endangered and/or threatened. An accurate, up-to-date list is the first step in developing a management plan. Two specific examples follow:

a <u>Eriogonum ampullaceum</u> - This species is not threatened by the lowering of the water of Mono Lake It is an annual species, depending only on precipitation. It is also found from Long Valley to Owens Valley.

CITY AGENCIES

b Pedicularis crenulata - This species has been found only at the Sierra Nevada Aquatic Research facility on City of Los Angeles land The population consists of approximately 200 plants

If you have any questions regarding our comments please contact Mr Richard H Verble, our Property Manager, at 873-6361. Again, thank you for the opportunity to comment on the Forest Plan and DFIS

Sincerely,

DUANE D BUCHHOLZ
Northern District Engineer
Los Angeles Aqueduct Division

Enclosure

cc: Mr Zane C Smith, Jr
Regional Forester - Pacific Southwest Region
Mr Richard H Verble

Department of Water and Power the City of Los Angeles

TOM BRADLEY Mayor
RICK J CARLISLE President
JACK W LEONEY Vice President
ANGELA M ECHEVARRIA
CAROL WHEELER
WALTER A ZELMAN
HEDDERK DAVISON Secretary

EARL H DANE General Manager and Chief Engineer
NORMAN E NICHOLS Assistant General Manager Power
DUANE E GUSTESON Assistant General Manager Water
DANIEL W WATERS Assistant General Manager External Affairs
NORMAN E FLOWERS Chief Financial Officer

March 11, 1987

Mr. Dennis Martin
Forest Supervision
Inyo National Forest
873 North Main Street
Bishop, California 93514

Dear Mr. Martin:

Inyo National Forest Proposed Land and Resource Management Plan (Plan)

Thank you for the opportunity to comment on the recently released Plan and Draft Environmental Impact Statement (DEIS). The comments contained herein supplement the general comments made by Mr. Charles W. Montoya at the public hearing held in Bishop on January 26, 1987.

The Power System of the Los Angeles Department of Water and Power (DWP) operates numerous facilities in and adjacent to the Inyo National Forest. As the Plan is intended to provide management direction for all forest lands and resources for the coming 10 to 15 years, we are concerned about any effects it may have on the operations of DWP's Power System. We have reviewed the Plan and recognize that a great deal of effort and concern went into the formulation of alternatives and the analyses used for the Plan.

The Power System comments are directed toward utility corridors and geothermal resources. The Eastern Sierra region is in a key position with respect to power transmission from energy sources in the Pacific Northwest and Intermountain states to Southern California. As the energy needs of the Los Angeles Basin continue to increase, the need for additional transmission systems grows. We believe that the Plan should address the issue of utility corridors for high-voltage transmission lines in a more detailed manner.

The Plan should consider potential east-west utility corridors and alternate north-south utility corridors that cross Inyo National Forest lands. We recognize that it is appropriate to specify mitigation measures to accompany a utility corridor designation in specific areas where valuable resources are emphasized in the Plan. Minimal road construction through areas of special concern is one measure DWP would be receptive to. Our specific recommendations, including two maps for the Plan, are enclosed.

111 North Hope Street Los Angeles California 90012 Mailing address Box 111 Los Angeles 90051
Telephone (213) 481 4211 Cable address DWAPOWER

CITY AGENCIES

If you have any questions regarding our comments, please call Mr. James P. Mieding of my staff at (213) 481-8637. We are grateful for the assistance provided by Inyo National Forest staff at public meetings and through personal communications. We look forward to your response to the DWP Power System comments.

Sincerely,

EDWARD KARAPETIAN
Engineer of Environmental and
Governmental Affairs

Enclosures

cc: w/Enclosures

Mr. Zane G. Smith, Jr.
Regional Forester
Pacific Southwest Region
630 Sansome Street
San Francisco, California 94111

Mr. James S. Morrison
Bishop Resource Area Manager
Bureau of Land Management
873 North Main Street, Suite 201
Bishop, California 93514

Ms. Patricia McLean
Ridgecrest Resource Area Manager
Bureau of Land Management
112 East Dolphin Street
Ridgecrest, California 93555

Mr. Sam Dennis
Land Management Planning
Officer
U.S. Forest Service
873 North Main Street
Bishop, California 93514

Mr. Dale L. Woodward
Senior Right-of-Way Agent
Southern California Edison
Company
P.O. Box 410
Long Beach, California 90801

Mr. Steve P. Younkin
Sierra Pacific Power Company
P.O. Box 10100
Reno, Nevada 89520

Mr. James P. Mieding

City of Los Angeles
Department of Water and Power
Power System

General and Specific Comments
on the

Inyo National Forest
Proposed Land and Resource
Management Plan

March 1987

CITY AGENCIES

Los Angeles Department of Water and Power (DWP)
Power System Comments on
Inyo National Forest Proposed Land and
Resource Management Plan (Plan)

General Comments and Concerns on the Plan

I. Introduction

DWP's Power System is responsible for providing the electrical needs of over three million people in the City of Los Angeles. Historically, the bulk of electricity for the DWP's Power System was provided by hydroelectric generating plants. Up until the early 1940s, approximately 95 percent of the power serving Los Angeles came from this source. The phenomenal increase in the City's population following World War II, and the gradual reduction in new hydro-development sites, resulted in a shift to fossil-fueled thermal plants located within the Los Angeles Basin. During the 1960s, fossil-fueled electrical generation accounted for up to 80 percent of the City's power. The 1970s brought substantial increases in fuel oil prices due to the 1973 Arab oil embargo, as well as increased concern over air quality within the basin. In light of these considerations and the continued increase in demand for electricity, DWP aggressively began participating in facilities outside the basin and is anticipating future power generating sources to be located outside the Los Angeles Basin. In 1985/1986, approximately 30 percent of Los Angeles' energy was generated in the Los Angeles Basin, and we see this percentage dropping in future years. These sources include not only projects in which DWP is a participant, but also economy energy purchased from other utilities. Since 1970, power generated in the Pacific Northwest has been delivered to the Los Angeles Basin via the Pacific DC Intertie (Celilo-Sylmar Transmission Line) which crosses portions of the Inyo National Forest. DWP must maintain a strong transmission system into the Los Angeles Basin and also expand this system when additional energy sources become necessary. Our concerns regarding the Plan center on existing and potential transmission line corridors which cross portions of the Inyo National Forest.

II. Proposed Plan. The following are elements within the proposed Plan with which we are concerned.

- Utility Corridors

The Plan states that additional north-south utility lines and future corridor needs paralleling the existing Pacific DC Intertie (Celilo-Sylmar Transmission Line) will be considered in any future linear land occupancy decisions. Proliferation of separate linear utility rights-of-way will be avoided by consolidating compatible utilities to locations that have the highest potential

for corridor designation. Existing public or private utility rights-of-way will be used wherever feasible to minimize the creation of new rights-of-way and to reduce impacts on other resources. (See Rights-of-Way Grants, Plan IV-24.)

- Geothermal Resources

The Plan states that Inyo National Forest lands will be provided for exploration and development of geothermal resources commensurate with other resource values. Applicable regulations, operating orders, and notices shall be followed and geothermal leases issued pursuant to appropriate authority. Environmental documents will be prepared prior to leasing and also prior to exploration, development, and production phases to analyze impacts and specify mitigation measures where lease sales have occurred or are proposed. Energy leasing will be authorized when projects meet established visual and water quality objectives and cultural, wildlife, fisheries, and riparian resource objectives. (See Leasable Minerals - Oil, Gas, and Geothermal, Plans IV-25 and IV-26.)

III. Impacts of the Proposed Plan on the DWP's Power System

- Utility Corridors

As the energy demand of Los Angeles increases, DWP must look for new energy sources. Currently, coal-fired generating stations in Nevada are under consideration. In addition, geothermal resources are being developed in Nevada. The most feasible transmission line route alternative to deliver this power to Southern California, considering environmental, topographical, and land use constraints, is by way of an east-west utility corridor leading to the Pacific DC Intertie (Celilo-Sylmar Transmission Line) corridor. The Plan addresses the need for a corridor paralleling the Pacific DC Intertie; we concur with this. However, the Plan does not designate this corridor, nor does it identify any potential east-west corridors. For this reason, we have identified several utility corridors and several alternate utility corridors for inclusion in the Plan as described in Section IV, "DWP Recommendations."

- Geothermal Resources

DWP is committed to developing alternative energy sources to meet current and projected energy demands. The proposed Plan has identified several areas within the Inyo National Forest where geothermal development would be allowed. In other areas, though, it is not clear whether geothermal energy development will be permitted. Additionally, we have not been able to

determine whether low-voltage power lines required for geothermal development are compatible with certain management prescriptions or area directions. DWP recommendations which address these ambiguities are contained in the following Section IV.

IV. DWP Recommendations

o Utility Corridors

DWP recommends that the Plan include and designate both utility corridors and alternate utility corridors for high-voltage transmission lines shown on the map entitled "DWP Recommended Utility Corridors for Proposed Inyo National Forest Plan."

The Plan should include and designate the following as utility corridors:

1. The Pacific DC Intertie (Celilo-Sylmar Transmission Line) - A north-south corridor paralleling existing transmission lines.

2. Big Pine-Deep Springs - An east-west corridor providing access from the Deep Springs area to the Pacific DC Intertie corridor south of Big Pine.

Further, the Plan should include and designate the following as alternate utility corridors should the proposed utility corridors or portions of those utility corridors be unusable:

1. Montgomery North - An alternate to a logical east-west route through Montgomery Pass on Bureau of Land Management (BLM) lands which avoids developed areas and most view sheds in Chalfant, Hammill, and Benton Valleys.

2. Banner - An alternate for a portion of the Pacific DC Intertie avoiding BLM Wilderness Study Area (WSA) 010-077(202), WSA 010-079, WSA 010-080, WSA 010-081, and WSA 010-082.

DWP is aware that these recommended utility corridors and alternate utility corridors include areas where recreational and wildlife resources are emphasized. However, we believe a well-planned transmission line which includes minimal surface disturbance in critical areas is compatible with forest resources.

o Geothermal Resources

DWP believes that the Plan should recognize the need for lower voltage power lines specific to each geothermal project wherever geothermal resources are discussed.

V. Conclusion

For the Plan to be an adequate planning document, it should recognize the need for future utility development and designate locations for potential expansion. The proposed Plan needs to consider additional utility corridors beyond the Pacific DC Intertie corridor.

Department of Water and Power's (Power System)
Specific Comments on the Plan

	Plan Section (Page)	
1.	II.B.(II-9) IV.F.(IV-100) IV F.(IV-101)	Throughout the documents the high-voltage direct current (HVDC) intertie could also be referred to as the Pacific DC Intertie instead of the 750-HVDC Oregon-Sylmar Transmission Line. This name would be more appropriate, eliminating some confusion about the operating voltages of the transmission line which have been changed in the last few years.
2.	III.C.(III-12)	It is not clear where utility transmission line access or patrol roads fit into the mileage totals given. If they are uninventoried roads, closed to the public, please state so.
3.	III.C.(III-17)	Fourth paragraph, third sentence should read: The route paralleling the major interstate right-of-way for the Pacific DC Intertie will be designated a utility corridor as will a route between Big Pine and Deep Springs in the vicinity of Highway 168. The need for other routes will be considered.
4.	III.C.(III-19)	Third paragraph, fifth sentence should read. Although shallow subsurface testing has occurred, and four to five deep exploratory wells have been drilled, additional work is needed to better define the extent and quality of the resource.
5.	IV.D.(IV-24) Forest-Wide Standards and Guidelines	Under Rights-of-Way Grants, (4.) should read. Designate a one-mile-wide utility corridor centered on the Pacific DC Intertie. Add (5). Designate a one-mile-wide corridor over Inyo National Forest land between Deep Springs and Big Pine. Add (6.) Alternate utility corridors (1) Montgomery North, and (2) Banner, (see map entitled "DWP Recommended Utility Corridors for Proposed Inyo National Forest Plan") which occupy Inyo National Forest land will be designated.
6.	IV.E.(IV-56, 57) Prescription #4	A Lands Element should be added to Prescription #4 and should read: Permit new utility rights-of-way which are

		compatible with the mule deer habitat emphasis. Construction of new facilities would need to be accompanied by appropriate habitat preservation measures such as minimizing new road development.
7	IV.E.(IV-58) Prescription #5	This prescription allows energy exploration or development, but does not specifically permit a utility right-of-way. If energy is developed, a means of conveying that energy is required. The Lands Element should be modified.
8.	IV.E.(IV-72) Prescription #11	A Lands Element should be added to Prescription #11 and should read: Permit new utility rights-of-way which are compatible with the range emphasis. New facilities would need to be accompanied by appropriate habitat preservation measures such as minimizing new road development.
9.	IV.E.(IV-82,83) Prescription #17	A Lands Element should be added and should read: Permit new utility rights-of-way which maintain the unroaded characteristics of the land and which do not conflict with recreation and wildlife objectives.
10.	IV.E.(IV-84) Prescription #18	First paragraph should read: The purpose is to allow roads to be constructed or upgraded to facilitate vehicle access for mineral activity, range management, utility needs, and recreational use. Second paragraph, second sentence should read: This prescription supports use of mineral, range and recreational resources, and maintaining an "open road" policy for access to mineral areas, range allotments, utility facilities, and for motorized recreation. Under Recreation Element, second paragraph, first sentence should read· Allows ORV use on designated roads, trails, and open areas, but prohibits ORV use on designated utility roads. A Lands Element should be added and should read: Permit new utility rights-of-way.
11.	IV.F.(IV-101) (Management Area #16	Management Area Direction, the Lands Element should read: Designate a one-mile-wide utility corridor centered on the Pacific DC Intertie.

12.	IV.F.(IV-119) Management Area #12	Under Management Area Direction, a Lands Element should be added and should read: Consider the use of alternate utility corridors if they cannot be accommodated on existing corridors. Modify the Visual Element to read: Utilize existing powerline routes as much as possible for the location of additional overhead lines. Minimize the creation of new routes through the area.
13.	IV.F.(IV-21) Management Area #13	Under Management Area Direction, Lands Element, the following statement should be added: Designate a one-mile-wide utility corridor in the vicinity of Highway 168.

Attachment

Roger Dellart
TED HILTON, A.I.C.P.
Planning Director

PLANNING DEPARTMENT
DRAWER L • INDEPENDENCE • CALIFORNIA 93526
(619) 878-2411 (Ext 2253)

County of
INYO

January 26, 1987

Forest Supervisor
Inyo National Forest
873 North Main Street
Bishop, CA 93514

Re: Inyo National Forest Management Plan

Dear Sir:

The Proposed Land and Resource Management Plan for the Inyo National Forest has been reviewed and considered by the Inyo County Planning Department.

First, we would like to congratulate you and your staff for a complete and detailed analysis of the existing resources of the Inyo National Forest and the preparation of the various management plan alternatives to utilize these resources. The evaluation of over 2,000,000 acres within the Forest boundaries; the formulation of eighteen (18) management prescriptions; and the establishment of twenty (20) management areas was a major undertaking. To complile that information and present it in a relatively easy to read format is to be commended.

By and in large, the Preferred Alternative (PRF) is supported by the Planning Department. It represents, to a large degree, the continuation of existing policies and programs of the Forest Service. However, we do have a number of comments that we feel should be considered prior to the adoption of the Final Plan. These comments consist of the following:

1. Approximately 83% of the Inyo National Forest lies within Inyo and Mono Counties and of all the timber harvesting as well as over 90% of the recreational activity occurs here. The local economy of our two Counties is highly dependent upon the recreational visitor and, to some degree, the extraction of natural resources from the forest (ie. timber, grazing and mining). In 1985-86 over $350,000 was returned to Inyo County for school and road purposes from the recreational and timber receipts collected by the Inyo National Forest.

   The Preferred Alternative provides for additional recreational use of the Forest beyond that which is presently existing, or provided for in the Current Alternative (CUR). This we strongly support

We do have a concern over the proposals for future timber harvesting in the Forest. Presently 10.5 MMBF are harvested annually while the Preferred Alternative proposes a reduction to 10.0 MMBF in 10 years and 9.9 MMBF in 50 years.

Even though this reduction may seem insignificant we encourage the projected harvest be maintained at the 10.5 MMBF figure in the Plan. This will ensure, primarily the Inyo-Kern and Garderville sawmills, present timber harvests will be continued into the future. The additional timber could possibly be obtained from uneven-age timber management within the future recreation and ski areas (ie. around Inyo Craters). In addition, approximately 10,000 acres within the Monache Meadow area proposed for Limited Access should be re-evaluated for Timber Management.

2. The Inyo National Forest presently has 565,000 acres as designated wilderness (30% of the total area). The Preferred Plan proposes an additional 112,000 acres for wilderness located primarily in the Inyo-White Mountains east of Owens and Hammil Valleys. These are among of the most heavily mineralized mountain ranges in California and numerous "inactive mines" are present. The two proposed wilderness areas should have a complete and detailed analysis of their mineral potentials completed prior to their being formally proposed for wilderness, as is being done for the proposed wilderness areas in the California Desert Plan.

If they are recommended for wilderness at this time we strongly suggest that the area between Badger Flat and Papoose Flat, including the areas around Squaw and Side Hill Springs be excluded. These areas contain numerous roads and are utilized for cattle grazing, hunting and other recreational activities. The road between Badger Flat and Papoose Flat provides a loop road connecting the communities of Big Pine and Independence. It is a locally popular one day excursion without having to retrace one's route.

3. Management Prescription Number 4 (Mule deer Habitat Enphasis) occuring within Management Areas 15, 17 and 20 (Bishop Creek-Buttermilk, Owens Valley Escarpment and South Sierra) may result in the prohibition of vehicular access into these areas during the winter months.

These areas are not widely visited during these months; the roads provide opportunities for visitors to view the deer herds; the traffic on the roads is minimal and should not affect the winter deer habitat; and considering the costs of enforcement we do not feel these roads should be closed to entry.

Thank you for the opportunity to comment on the Forest Plan.

Sincerely,

Roger De Hart

Roger De Hart
Planning Director

PLANNING DEPARTMENT
DRAWER L • INDEPENDENCE • CALIFORNIA 93526
(619) 878-2411 (Ext 22631)

Roger DeHart
Planning Director

County of
INYO

Info X-Action
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LEG
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January 30, 1987

Dennis Martin Supervisor
Inyo National Forest
873 North Main Street
Bishop, CA 93514

RE INYO NATIONAL FOREST MANAGEMENT PLAN

Dear Mr Martin

Enclosed is a copy of the Inyo County Planning Department's comments regarding the Land and Resource Management Plan for the Inyo National Forest. These comments were read into the record at the public hearing held in Bishop on January 26 A copy was also submitted to the hearing officer

At the request of the Board of Supervisors, our Department will have a short workshop for them on the Plan from 9 00 to 10 00 a m , Tuesday, February 17 We do not expect much discussion as we are just going to give them an overview However if you or any of your staff wish to attend, please feel free to do so

Sincerely,

Roger DeHart

ROGER DeHART
Planning Director

RDH jw

Attachment Planning Department Letter

COUNTY AGENCIES

ROGER DE HART,

WAS CALLED TO THE MICROPHONE AND SPOKE AS FOLLOWS;

MR. DE HART: IT'S ROGER DE HART, R-O-G-E-R-D-E-H-A-R-T. I'M REPRESENTING THE INYO COUNTY PLANNING DEPARTMENT.

FIRST THE DEPARTMENT WOULD LIKE TO CONGRATULATE THE FOREST SERVICE STAFF FOR A COMPLETE AND DETAILED ANALYSIS OF THE EXISTING RESOURCES OF THE INYO NATIONAL FOREST AND THE PREPARATION OF THE VARIOUS MANAGEMENT PLAN ALTERNATIVES.

THE EVALUATION OF OVER TWO MILLION ACRES WITHIN THE FOREST BOUNDARIES AND THE FORMULATION OF 18 MANAGEMENT PRESCRIPTIONS AND THE ESTABLISHMENT OF 20 MANAGEMENT AREAS WAS A MAJOR UNDERTAKING BY THE FOREST SERVICE. TO COMPILE THAT INFORMATION AND PRESENT IT IN A RELATIVELY EASY-TO-READ FORMAT IS COMMENDED.

BY AND LARGE, THE PREFERRED ALTERNATIVE IS SUPPORTED BY THE PLANNING DEPARTMENT. IT REPRESENTS, TO A LARGE DEGREE, THE CONTINUATION OF EXISTING POLICIES AND PROGRAMS OF THE FOREST SERVICE.

HOWEVER, WE DO HAVE A NUMBER OF COMMENTS THAT WE FEEL SHOULD BE CONSIDERED PRIOR TO THE ADOPTION OF THE FINAL PLAN. THESE COMMENTS CONSIST OF THE

FOLLOWING:

APPROXIMATELY 83 PERCENT OF THE INYO NATIONAL FOREST LIES WITHIN INYO AND MONO COUNTIES, AND ALL THE TIMBER HARVESTING, AS WELL AS OVER 90 PERCENT OF THE RECREATIONAL ACTIVITY, OCCURS IN THESE TWO COUNTIES.

THE LOCAL ECONOMY OF OUR TWO COUNTIES IS HIGHLY DEPENDENT UPON THE RECREATIONAL VISITOR AND, TO SOME DEGREE, THE EXTRACTION OF NATURAL RESOURCES FROM THE FORESTS, SUCH AS TIMBERING, GRAZING, AND MINING.

IN 1985, OVER $350,000 WAS RETURNED TO INYO COUNTY FOR SCHOOL AND ROAD PURPOSES FROM THE RECREATIONAL AND TIMBER RECEIPTS COLLECTED FROM THE INYO NATIONAL FOREST. THE PREFERRED ALTERNATIVE PROVIDES FOR ADDITIONAL RECREATIONAL USE OF THE FOREST BEYOND THAT WHICH IS PRESENTLY EXISTING OR PROVIDED FOR IN THE CURRENT ALTERNATIVE, AND THIS THE PLANNING DEPARTMENT DOES SUPPORT.

WE DO HAVE SOME CONCERN OVER THE PROPOSALS FOR FUTURE TIMBER HARVESTING IN THE FOREST. PRESENTLY 10.5 MILLION BOARD FEET ARE HARVESTED ANNUALLY, WHILE THE PREFERRED ALTERNATIVE PROPOSES A REDUCTION DOWN TO 10 MILLION BOARD FEET IN 10 YEARS, AND 9.9 MILLION BOARD FEET IN 50 YEARS.

EVEN THOUGH THIS REDUCTION MAY SEEM INSIGNIFICANT, WE DO ENCOURAGE THAT THE PROJECTED HARVEST

BE MAINTAINED AT THE 10.5 MILLION BOARD FEET FIGURE IN THE PLAN. THIS WILL INSURE PRIMARILY THE INYOKERN AND GARDNERVILLE SAWMILLS' PRESENT TIMBER HARVEST WILL BE CONTINUED INTO THE FUTURE. THE ADDITIONAL TIMBER COULD POSSIBLY BE OBTAINED FROM UNEVEN-AGED TIMBER MANAGEMENT WITHIN THE FUTURE RECREATION OF SKI AREAS, SUCH AS AROUND INYO CRATERS.

IN ADDITION, APPROXIMATELY 10,000 ACRES WITHIN THE MONACHE MEADOW AREA, WHICH IS CURRENTLY PROPOSED FOR LIMITED ACCESS, SHOULD BE REEVALUATED FOR AN UNEVEN-AGED TIMBER MANAGEMENT PROGRAM.

THE INYO NATIONAL FOREST PRESENTLY HAS 565,000 ACRES AS DESIGNATED WILDERNESS, AND THE PREFERRED PLAN PROPOSES AN ADDITIONAL HUNDRED AND TWELVE THOUSAND ACRES FOR WILDERNESS, PRIMARILY INDICATED IN THE INYO-WHITE MOUNTAINS. THESE ARE AMONG THE MOST HEAVILY MINERALIZED MOUNTAIN RANGES IN CALIFORNIA, AND NUMEROUS INACTIVE MINES ARE PRESENT.

THE TWO PROPOSED WILDERNESS AREAS SHOULD HAVE A COMPLETE AND DETAILED ANALYSIS OF THEIR MINERAL POTENTIALS COMPLETED PRIOR TO THEIR BEING FORMALLY PROPOSED FOR WILDERNESS, AS IS BEING DONE WITH THE PROPOSED WILDERNESS AREAS IN THE CALIFORNIA DESERT PLAN.

HOWEVER, IF THEY ARE RECOMMENDED FOR WILDERNESS, AT THIS TIME WE DO SUGGEST THAT THE AREA

BETWEEN BADGER FLAT AND PAPOOSE FLAT, INCLUDING THE AREAS AROUND SQUAW AND SIDE HILL SPRINGS, BE EXCLUDED. THESE AREAS CONTAIN NUMEROUS ROADS AND ARE UTILIZED FOR CATTLE GRAZING, HUNTING, AND OTHER RECREATIONAL ACTIVITIES. THE ROAD BETWEEN BADGER FLAT AND PAPOOSE FLAT PROVIDES A LOOP ROAD CONNECTING THE COMMUNITIES OF BIG PINE AND INDEPENDENCE. IT IS A LOCALLY POPULAR ONE-DAY EXCURSION WITHOUT HAVING TO RETRACE ONE'S ROUTE.

AND, LASTLY, MANAGEMENT PRESCRIPTION NO. 4, WHICH IS A MULE DEER HABITAT EMPHASIS OCCURRING WITHIN MANAGEMENT AREAS 15, 17, AND 20, MAY RESULT IN THE PROHIBITION OF VEHICULAR ACCESS INTO THESE AREAS DURING THE WINTER MONTHS. THESE AREAS ARE NOT WIDELY VISITED DURING THESE MONTHS. THE ROADS PROVIDE OPPORTUNITIES FOR VISITORS TO VIEW THE DEER HERD, AND THE TRAFFIC ON THE ROADS IS MINIMAL AND SHOULD NOT AFFECT THE WINTER DEER HABITAT. IN CONSIDERING THE COST OF ENFORCEMENT OF CLOSING THESE ROADS DURING THE WINTER MONTHS, WE DO NOT FEEL THAT THESE ROADS SHOULD BE CLOSED TO ENTRY.

THANK YOU.

THE HEARING OFFICER: THANK YOU.

JANIE HUNTSBERGER.

MS. HUNTSBERGER: I'LL PASS.

THE HEARING OFFICER: MICHAEL PRATHER.

WOULD YOU PLEASE RESTATE YOUR NAME AND SPELL

STATE OF CALIFORNIA THE RESOURCES AGENCY

GEORGE DEUKMEJIAN Governor

DEPARTMENT OF FISH AND GAME
245 W Broadway, Suite 350
Long Beach, California 90802
(213) 590-5113

April 3, 1987

Mr. Dennis Martin, Forest Supervisor
Inyo National Forest
873 North Main Street
Bishop, California 93514

Dear Dennis

This is the comment letter we submitted to the Resources Agency on March 9, 1987 regarding the Inyo National Forest Plan (SCH 86102703). In the event that you do not receive comments from the Agency, these comments should be considered our official position.

Please note that our comments indicate maps are included Those maps are not attached, but will be provided to you by Tom Blankinship

Sincerely,

Fred Worthley
Regional Manager
Region 5

Enclosure

FW/es

	✓=Info X=Action	
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Memorandum

Secretary for Resources
1416 Ninth Street
Sacramento, CA 95814

Date : March 9, 1987

Attn: Projects Coordinator

RECEIVED
MAR 1987

From : Department of Fish and Game

Subject: Inyo National Forest Land and Resource Management Plan and Draft Environmental Impact Statement, SCH 86102703

The Department of Fish and Game (DFG) has reviewed the draft Proposed Forest Land and Resource Management Plan (Plan) and associated Draft Environmental Impact Statement (DEIS) for the Forest. We were pleased to see in these documents some of the changes we had suggested after reviewing a previous working draft. With some additional changes, we feel that the final Plan can provide a reasonable amount of protection for fish and wildlife.

Many of our comments and concerns relate to fisheries, aquatic habitat, and the impacts of grazing on riparian systems. We are recommending a stream evaluation procedure which will require significant effort and expertise. We further recommend that the Forest attempt to reinstate at least one of two former fisheries biologist positions in order to implement and monitor important segments of the Plan pertaining to aquatic and riparian habitat.

Because the DFG's Committee on Threatened Trout recommended designation of the South Fork Kern River as a Wild and Scenic River in 1986, we were pleased to see alternatives which would study the designation of the Kern as well as the Middle Fork of the San Joaquin. Designation of these rivers would substantially benefit our recovery plans for golden trout.

Our specific comments on the Plan and the DEIS are attached, as well as maps showing our suggested changes in prescription area boundaries which we believe should be included in the final preferred alternative. We appreciate the opportunity to comment on this draft Plan. If you require further information please contact Mr. Phil Pister or Mr. Vern Bleich at 407 W. Line Street, Bishop, California 93514, Telephone (619) 872-1171; or Mr. George Nokes, 1234 East Shaw Avenue, Fresno, CA 93710, Telephone (209) 222-3761.

For

Jack C. Parnell
Director

Attachment

WONG BLANKENSHIP BENDER CUMMINGS [illegible]
File DFG, ESBLF, FSD, RFrion 4, Region 5, Chron
Pister-Bishop, Bleich-Bishop, Nokes-Fresno 4, Gerstung-IFD,

STATE AGENCIES

Department of Fish and Game Detailed Comments
of Inyo National Forest Land and Resource Management Plan

1. Page III-22-23 (Fire Management) We are pleased to see that the Inyo National Forest (Forest) is considering a revision of its fire control policy The revision would allow natural fires to burn in some areas, and enable the Forest to consider the use of prescribed burning to benefit wildlife habitat We look forward to working with your personnel to designate areas where this would be beneficial to wildlife.

2. Page III-24 (Range). We agree that it is not reasonable to attempt to increase the production of red meat by the national goal of 46 percent on the Forest In fact, considering the damage by grazing to fish and wildlife habitat already occurring on public lands in California, this arbitrary goal seems unrealistic, especially as the DEIS states on page IV-110 that 90 percent of the wet meadows on the Forest "have been damaged or are threatened with damage triggered by the mismanaged grazing of 30 to 100 years ago."

   This section also states that the red meat demand is projected to increase over the planning period. However, our understanding is that this demand is actually decreasing on a national basis. Perhaps this statement should be reexamined. The demand for grazing as distinguished from the demand for red meat, is high and will in all probability remain high regardless of the demand for red meat itself because of pricing policies which reflect less than fair market value charged for the grazing resource.

   To be consistent with statements elsewhere in the document (e.g , page III-30), we also believe it important that the statement "grazing in riparian areas may be deferred or redirected where necessary to prevent or repair damage to riparian resources" be changed to "grazing in riparian areas will be changed or eliminated to prevent or repair damage to riparian resources". Also, we request that the statement in this section dealing with cattle damage to fawning habitat be changed to "range management practices that prevent cattle from degrading specific fawning areas will be instituted."

3. Page III-26 (Recreation-Alpine Skiing) It is encouraging to learn there is an opportunity to revise the agreement contained in the draft Town of Mammoth General Plan. That agreement, which we think is premature, states that development of the Sherwin ski area will be considered before other potential sites As we have stated in previous correspondence, all potential ski areas should be examined in detail so that their suitability for skiing and their probable environmental impacts are thoroughly documented before a decision is made to develop any of the areas Also,

both CEQA and NEPA appear to require examination of the cumulative impacts of all similar past and reasonably foreseeable future ski developments before permits could be granted for a Sherwin Bowl project. This section should be changed to state that a thorough examination of the potential impacts of all such ski developments in the Mammoth area will be completed before any are permitted.

4. Page III-29 (Riparian Areas). We agree that an inventory of riparian habitat on the Forest, including habitat condition, would be most beneficial. We applaud the statement that "resources dependent on riparian areas receive priority over other resources where the two come into conflict". We request that this policy be reiterated in other sections of the Plan such as those for range, hydroelectric development, and wildlife.

5. Page III-39-44 (Wildlife). It is appropriate that statements which summarize the important elements and goals of each deer herd plan for these herds occurring on the Forest be included in this section of the Plan. However, this section states that these herds rely most heavily on Forest lands for winter range. This is true for only some of the herds (e.g., Goodale). Other herds, such as Casa Diablo and Mono Lake, rely almost entirely on the Forest for summer range.

   Page III-39 (Wildlife). The specific locations and sizes of areas to be managed for threatened, endangered, and sensitive species should be disclosed. These details are not provided for any species. Because the alternative establishes specific direction which will reduce habitat and abundance, the extent of habitat to be retained must be shown in detail for each species.

   The report estimates the current population of sage grouse as 500 birds. Recent information indicates that 1,200-1,300 is a more realistic figure. Also, the maximum habitat capacity of the Forest for sage grouse is not necessarily 1,500. Further study may demonstrate that many more grouse could be supported within the Forest as a result of habitat enhancement programs or changes in other land management practices.

   Regarding blue grouse, the statement is made here and on DEIS page S-34 that there are no apparent conflicts between the needs of blue grouse and the management of other resources. On the contrary, we have identified apparently serious conflicts between the maintenance of important grouse habitat in meadows and overgrazing by cattle. The "Issues and Concerns" section of the DEIS states, "Blue Grouse habitat should be protected" (page I-23), and to do so these serious conflicts must be resolved

6. Page IV-4 (Fish). This section should be modified to read " . . ensure that viable populations of native vertebrates and invertebrates are maintained . "

7. Page IV-20 (Energy). This section should include the evaluation of energy developments with respect to cumulative impacts, particularly of hydroelectric projects, on fish, wildlife, and recreational resources We concur with the statements in Item 3 The State of California small hydroelectric policy supports small hydro development as long as no degradation of riparian or aquatic resources results from such projects.

8. Page IV-21 (Threatened and Endangered Fish) The wording in Number 3 should be changed from "Manage all stream reaches of designated critical habitat . ." to "Manage all stream reaches of essential habitat . . ." In addition, Item 3a. presupposes that grazing is compatible with habitat essential to threatened and endangered fish populations. This supposition does not necessarily follow the letter or intent of the Endangered Species Act. Instead we suggest the following wording. "a. Do not allow any livestock-related degradation of the streambank if U S. Forest Service fish or wildlife biologists, the U.S. Fish and Wildlife Service, or the California Department of Fish and Game believe that such habitat degradation is detrimental within any given stream reach, and this belief is supported by data which results from the use of the General Aquatic Wildlife Survey (GAWS) methodology."

9. Page IV-22 (Fisheries). The criteria proposed in Items 2 and 3 for management of State designated wild trout waters and resident fish waters appear to be arbitrary and are not substantiated. Instead, where grazing may affect fish habitat, we strongly recommend that the Forest adopt the use of the GAWS methodology incorporating information from the stream channel stability rating evaluation These surveys should be conducted in cooperation with, and utilizing applicable information from other agencies where possible, on all streams exposed to livestock grazing or other potential stream disturbances. The results of the GAWS surveys should then be utilized to determine the magnitude of impacts from grazing or other perturbation on an aquatic system in order that proper corrective action can be taken If outputs from the GAWS indicate that a streambank disturbance is detrimental to the fishery of a stream system, appropriate action should be initiated to correct the cause of the problem; this should include a reduction or elimination of streamside grazing if justified For this reason, the review and revision of Allotment Management Plans (AMPs) should be scheduled to follow the GAWS so that those results are available for use in the AMP evaluation. It is not in the best interests of the public or the DFG,

especially if State funds are to be utilized, to attempt to restore degraded habitat if the cause of the degradation remains uncorrected Following the GAWS, a hydrologic analysis should be conducted to determine the most effective means of restoring and enhancing degraded aquatic habitat, including the feasibility and desirability of streambank stabilization and/or instream structures based upon the hydrologic nature of the stream. We would appreciate an opportunity to participate with Forest personnel in devising a 5-year action plan which will define priority waters to be worked on. Such a meeting would allow the DFG and Forest to coordinate field activities so that required information can be obtained for the GAWS surveys in a timely manner When appropriate measures are determined, appropriate funding can be justified based upon GAWS results to conduct the work required to reduce or eliminate the problems The use of GAWS in subsequent years should also be made a part of the monitoring plan to document the magnitude of stream recovery, the effectiveness of the corrective action, and determine the need for further work.

The GAWS methodology has been adopted by the Toiyabe National Forest for use on eastern Sierra streams, and has already been utilized by that forest to effect changes in management for several aquatic systems. We believe that the adoption of the procedure recommended above will result in consistency in the U S. Forest Service evaluation of potential management schemes for all eastern Sierra aquatic systems, result in management decisions which are biologically and economically justifiable, and provide a greater benefit/cost ratio for stream restoration and enhancement projects. We feel that the Proposed Plan should commit the Forest to adoption of the GAWS system.

Page IV-23 (Hardwoods). Oaks play an important role for wildlife species. The only guideline for hardwoods is the protection from wood gatherers. There is a need to protect these pocket areas from detrimental grazing, incompatible recreational uses and development. Neither the Plan nor DEIS addresses hardwood management by alternatives. What environmental considerations were given to hardwoods in each of the alternatives?

10 Page IV-25 (Minerals, Leasable Minerals-Oil, Gas, and Geothermal). This section should reflect the need to assess the cumulative impacts of energy development, particularly geothermal projects, on fish, wildlife and recreational resources

11. Page IV-27 (Range). The wording on statement number 6 should be stronger. We suggest: "When unacceptable damage (as defined in Forest-Wide Standards and Guidelines For Riparian

Areas) occurs, the grazing season will be delayed. If this is unsuccessful in preventing damage to riparian habitat, livestock use will be eliminated in those areas."

12. Page IV-30 (Riparian Areas). We concur with the statements here that give riparian resources substantial importance, particularly those numbered 1, 2, 3, 5, 6, and 7. However, we believe that wording in statement number 4 should be similar to that suggested in our comment regarding Range (above). Also, statement number 8 (earth disturbance standards) is somewhat unclear. We request that earth disturbance be defined and the extent of the area (away from the stream) be described.

13. Page IV-34 (Timber). Due to the relative scarcity and importance of riparian zones on the Forest, we believe that no timber should be harvested from within these zones. Item 7 should be modified to reflect the maintenance of a 100-foot wide buffer strip along each side of watercourses where timber would not be harvested. Proliferation of roads has had a major deleterious effect on wildlife habitat in California. We feel strongly that roads no longer needed in logging areas should be eliminated. We concur with statement number 9 in this section, which allows for this, although we believe that protection of irreplaceable wildlife habitat is of greater importance than additional ORV opportunities. Further, we support the concept that there is a need ". . . perhaps to reduce the size of the commercial timber base and the projected yield . . . to accommodate other resource values."

    This need is pronounced in regards to the red fir forest areas between Mammoth and June Lakes, particularly the upper Glass Creek drainage where wildlife and scenic values are very high. Current deer and mountain lion research has established the high value for these species in the red fir forest along San Joaquin Ridge and vicinity. Old growth forest values are high; substantial public sentiment is being expressed to retain the natural values in that Forest. Also, red fir stands have the highest potential for spotted owl nesting habitat on this forest, as stated in the DEIS, page S-35. Therefore, we recommend that to preserve old growth habitat, habitat for deer, mountain lion, other wildlife, and the high scenic values of the red fir forest, wide-scale harvest of red fir in the San Joaquin Ridge area should not be allowed.

14. Page IV-39-46 (Wildlife). We agree with the wording in the majority of the Forest-Wide Standards and Guidelines for maintenance of wildlife habitat and habitat for threatened, endangered, and sensitive species, and emphasis species. The DFG particularly appreciates the degree of cooperation of the Inyo Forest in accepting our suggestions for wording of

Standards and Guidelines for the maintenance of critical deer habitat. Perhaps the most important of the statements in this section, and those we feel are most essential for retention in the final document are a. and b which commit the Forest to maintain key areas for deer and to not allow developments that might impact deer.

Regarding sage grouse, we believe section a. should be changed to "Allow no vegetation treatment in sage grouse habitat that might adversely affect this species." For Standards and Guidelines for blue grouse, we suggest the following statement be added: "Carefully monitor grazing on meadows in blue grouse habitat. Modify or eliminate grazing as necessary if adverse impacts occur."

We support Section 8 (Sierra Nevada bighorn sheep) with one exception. We request that statement c. be changed to "Permit no increase in livestock use. Eliminate livestock grazing if competition for forage or transmission of disease is shown to be deleterious to bighorn populations." Beginning with Section 14 (Forested Habitats), it might be more clear to place the remainder of standards and guidelines for wildlife under a new heading (perhaps Habitat Types). These sections are now listed under Emphasis Species.

Page IV-45 (Snags). We believe the standards for snag management are inadequate to meet the needs of snag-dependent wildlife species. Guideline (b) will allow for the reduction of snag habitat in some areas which will reduce the quality of wildlife habitat. This guideline should be revised to read "Manage snags to at least 60 percent of potential or the current level, whichever is greater, in each forested habitat type and successional stage". Guidelines (d) and (e) should be revised as follows: "(d) Manage hard snags on suitable/non-suitable timberlands and riparian areas to achieve an average density of 2/acre (12-24" DBH) plus 1/acre (>24"DBH): all snags greater than 20 feet high. (e) Retain all soft snags on suitable and non-suitable timberlands and in riparian areas." Girdling trees should not be suggested as a way to create snags since the resultant snags receive very limited wildlife use. Techniques such as fire and topping are more appropriate techniques for snag creation. Guideline (k) should specify the acceptable level of snags below which management action will be taken to increase snag density. All harvest unit prescriptions should include provisions for long-term maintenance of snags.

Page IV-46 (Dead-and-Down). Standards for dead-and-down log management are inadequate for maintenance of the numerous species dependent on these habitat elements. Populations of lizards, salamanders, small birds, mammals, black bears, etc., which are dependent upon dead-and-down woody material (including logs and slash) would be diminished. A minimum of

STATE AGENCIES

3-4 down logs (20" x 20' or larger) per acre should be retained (100+ cubic feet). On key wildlife areas a higher number should be considered, with logs yarded to position providing maximum effectiveness as wildlife habitat. Woody debris (slash) should also be retained on at least 10 percent of the timber harvest area. Consultation with a wildlife biologist should be required when a management activity will potentially reduce down log densities.

15. Page IV-50 (Management Prescription - Designated Wilderness). We suggest the following be added to the section on "Protection": "Work with the Department of Fish and Game and other interested groups to develop plans for prescribed burn areas to allow fire to assume a more natural role and to restore wildlife habitat." We believe that only understory fires should be permitted in sensitive forested watershed areas such as the South Fork Kern. In large forest areas, fires should not be allowed to burn out of control. In the section on "Range" we request that a brief description of the administration of the grazing program under FSM 2323.2 be provided.

    Page IV-50 (Protection). Under the purpose for the management prescription (Page IV-48), wild lands are protected for their values of natural ecological integrity; yet all fires will be contained within 50 acres. Wildfires, especially lightning-caused fires, are a natural element in wilderness conditions and should be allowed to burn unless they pose a threat to life, property or high resource value areas.

16. Page IV-53 (Management Prescription - Proposed Wilderness). The same statement concerning burning to improve wildlife habitat we suggested for Designated Wilderness should be included here. We concur with the statements both here and in the section on Designated Wilderness that careful consideration must be given prior to placement of trails in bighorn sheep habitat.

17. Page IV-55 (Management Prescription - Bighorn Sheep Habitat Emphasis). A needed addition to the section on Range is as follows: "Permit no new grazing allotments or expansion of existing allotments within bighorn sheep range, and eliminate allotments immediately if transmission of disease from livestock is shown to be deleterious to bighorn sheep." Also, we support your strong statement that "other management activities will be curtailed if they present unresolvable conflicts with bighorn sheep management objectives."

18. Page IV-56 (Management Prescription - Mule Deer Habitat Emphasis). We concur with the statement that

"other management activities will be prohibited or reduced if they present unresolvable conflicts in these key areas" (that is, key seasonal ranges and migration routes). We suggest the following addition to the Range section ". . to wildlife values, and decrease grazing if this can be demonstrated to benefit deer populations". (The underlined portion is our suggested addition). Also, under Recreation, the following sentence should be included, "Allow no new developments that would adversely impact deer"

In addition to these wording changes, those areas designated as "mule deer habitat emphasis" should be enlarged. These needed changes are based on extensive recent radio telemetry results and we have shown them on the "preferred alternative" map (attached).

19. Page IV-70-71 (Management Prescription - High Level Timber Management). One of our greatest concerns about the effects of timber harvest on wildlife habitat is the disturbance factor from the large number of roads created by a timber operation. The final document should include the stipulation that all unneeded roads be physically obliterated after logging occurs. Our map, showing how the preferred alternative should be changed to benefit wildlife, designates a portion of that area now devoted to "high level timber management" to "mule deer habitat emphasis". We believe this is necessary to protect known key areas. No wildlife element is included in this prescription. Since areas of known key deer habitats are found within it, a wildlife element should be added which would provide general guidelines for maintenance at these key deer areas

20. Page IV-72 (Management Prescription-Range Emphasis). Increased AUMs should be allowed only when it is clear that such an increase will not be at the expense of other resource values. To provide for this, the following wording should be added.

    a) "Allow livestock to utilize up to 50 percent of available palatable forage within one-half mile of water developments, so long as wildlife habitat is not adversely impacted."

    b) "Rejuvenate and type-convert suitable range to increase forage production or to maintain forage production at high levels, but only after a determination is made that wildlife habitat will not be degraded."

    c) We suggest that a Wildlife element be added stating "Consider the potential effect of any range improvement project on fish and wildlife habitat. Authorize only those that are not detrimental." Some of that area designated as "Range Emphasis" has been shown by recent

research to be critical for deer. As with other management prescriptions, our map shows changes we believe should be included as the preferred alternative

21. Page IV-73-74 (Management Prescription - Concentrated Recreation Area). Our enclosed map includes suggestions for areas to be changed from this emphasis to "mule deer habitat emphasis". In addition, we believe that no development should proceed in riparian buffer areas within 100 feet of watercourses.

22. Page IV-76-77 (Management Prescription - Potential Alpine Ski Area). The following should be inserted as a third *paragraph:* "*Since* several areas are being seriously considered for development as new alpine ski sites, all will be fully examined before permits are allowed for any one site " We believe this is the only way to suitably choose the best sites, with the least impact to wildlife habitat and other resources We also believe *this requirement is* made clear in those sections of CEQA and NEPA dealing with cumulative impacts of projects. We believe that a Fish element should be added which states that no development will proceed in *Glass Creek Meadow in order to assure the* protection of essential habitat for Lahontan cutthroat trout proposed for introduction. We also request that the Timber element describe the plans (if any) for old growth red fir harvest in the vicinity of Glass Creek Meadow.

    We strongly support the statements included in the Wildlife element of this prescription, but believe the following minor change is needed. The first sentence should be: "Locate base facilities or *other developments away from deer* fawning areas and outside of main deer migration corridors." Recent work on deer migration routes, supported by U. S. Forest Service, Bureau of Land Management, Department of Fish and Game and others, has shown that portions of both the Sherwin Bowl and San Joaquin Ridge areas are vital to *migrating deer* herds. Consequently, our map showing needed changes in management prescription area boundaries includes changes of small areas from "potential alpine ski area emphasis" to "mule deer habitat emphasis".

23. Page IV-82-83 (Management Prescription - Limited Access). Generally, we believe the elements contained in this prescription *will do a good job of protecting* fish and wildlife habitat We concur with the direction to avoid upgrading four-wheel drive roads to two-wheel drive, and to obliterate any new mining roads after they are no longer needed.

    We also generally concur with the element dealing with fire suppression, but feel the following wording should be added "After consultation with U S Forest Service and Department of Fish and Game biologists, develop a plan describing let-burn sites for wildlife habitat improvement."

The Range element would better protect wildlife habitat if it *were changed as follows:* "Allow range enhancement activities to the extent they are compatible with recreation and wildlife objectives, and modify or eliminate grazing if it can be demonstrated that fish or wildlife habitat degradation is occurring "

Regarding the Recreation element, the following statements should be added: "Allow ORV use only on designated roads or trails, and obliterate other roads and trails where *feasible* " *Also·* "*Develop no additional permanent,* public, two-wheel drive or four-wheel drive access."

We agree with the management direction of the statements in *the Timber element and* those in the Wildlife element, but feel one minor change is needed. The following statement should be added. "Improve riparian areas where necessary to enhance fawning or other fish and wildlife habitat "

24. Page IV-84 (Management Prescription - Open Roaded). In general, this prescription can be expected to be less effective in maintaining wildlife values than a prescription prohibiting the construction of new roads. However, the *following changes will allow for more protection* To the Facilities element should be added: "Allow no new road construction that would degrade important wildlife habitat " The following statement should be added to the Protection element· "After consultation with U.S Forest Service and Department of Fish and Game biologists, develop a plan describing let-burn sites for wildlife habitat improvement."

    In some cases, we feel that boundaries of the Open Roaded prescription *should be changed in the preferred alternative* to Limited Access. These changes are shown on the enclosed map.

25. Page IV-90 (Management Area Direction - No. 2). We support the statement in the Range section that commits the Forest to manage the LeeVining Canyon area for bighorn sheep.

    Please add the following sentence to the *Wildlife section:* "Should reintroduced bighorn establish themselves in drainages other than LeeVining Canyon, explore ways of eliminating domestic sheep allotments in those areas."

26. Page IV-92-93 (Management Area Direction - No. 3) To the Description should be added the statement: "Portions of this management area are important as summer range to the Casa Diablo deer herd." Also, please add a Wildlife section under management area direction that says "Emphasize the importance of this area to the Casa Diablo deer herd Management decisions will reflect that importance "

STATE AGENCIES

27. Page IV-94-96 (Management Area Direction - No. 4). Please add to the Description the following statement: "Portions of this area are important as summer range, migration routes, and holding areas for the Casa Diablo deer herd." A Wildlife section should be added under Management Area Direction as follows: "Emphasize the importance of this area to the Casa Diablo deer herd. Management decision will reflect that importance."

28. Page IV-97-99 (Management Area Direction - No. 5). We suggest the description for this area be changed as follows: "Some important deer winter range occurs at the extreme eastern end of the management area. An important migration cotridor exists along the southern slope of the Glass Mountains. Various locations within this area provide summer range for deer." To the Wildlife portion of the Management Area Direction should be added "Maintain value to deer of existing winter range, summer range, and migration corridors."

29. Page IV-102-104 (Management Area Direction - No. 7). Under the Management Area Direction for Fish we concur with the management of the O'Harrel Canyon Creek drainage for Lahontan cutthroat trout. We also believe that the following item should be added: "Continue to coordinate with the California Department of Fish and Game and U.S. Fish and Wildlife Service to develop an Owens tui chub refuge in Little Hot Creek." Under the Management Area Direction for Range should be included, "Undertake vegetation manipulation activities that benefit grazing only when such work will not degrade sage grouse habitat". Wording under Timber should be changed as follows: "Utilize existing roads for timber harvest to minimize impacts on wildlife where practical, and obliterate roads that are no longer needed." To the Wildlife section should be added: "Maintain value to deer of existing winter range, summer range, and migration corridors."

30. Page IV-105-109 (Management Area Direction - No. 8). We agree that the statement about the extreme importance of portions of the Mammoth Escarpment to migrating deer should be included in the description of this management area. However, we feel that these key deer areas must be protected by a Wildlife portion of the Management Area Direction, which should include the following statement: "Allow no new roads, road improvements, ski facilities, or other habitat alterations that would adversely impact deer holding areas or migration routes " We concur with the proposal to manage Glass Creek for Lahontan cutthroat trout in the Fish portion of the Management Area Direction. We believe it imperative that the statement in Watershed Management Area Direction regarding management of water resources within the Mammoth Lakes Basin to "Satisfy municipal water supply needs after the natural resources needs are met" be retained in the final Plan

31. Page IV-110-113 (Management Area Direction - No. 9). Assuming that the Forest map, which indicates land ownership, is correct, we question the statement that this management area is composed mostly of private land. Actually, most of this area is Forest or Los Angeles Department of Water and Power land. Also, since a portion of this area is critical to migrating deer, we request that the following statement be included in the Wildlife section: "Allow no new roads, road improvements, ski facilities, or other habitat alterations that would adversely impact deer holding areas or migration routes." We concur with the items listed under the Fish portion of Management Area Direction.

32. Page IV-116-117 (Management Area Direction - No. 11). We concur with that portion of the description that identifies this area as extremely important to migrating deer. However, in order to make certain no degradation to this migration route occurs, a Wildlife section should be added to the Management Area Direction which reads: "Allow no new roads, road improvements, or other habitat alterations that would adversely impact deer holding areas or migration routes."

33. Page IV-118-119 (Management Area Direction - No. 12). Please add to the Wildlife section: "Allow no new roads, road improvements, or other habitat alterations that would adversely impact deer holding areas, migration routes, or winter ranges." Also, the Range section should include the following statement: "Allow no increases in grazing that would be detrimental to fish or wildlife habitat, and modify or decrease grazing where the existing level is shown to degrade habitat for fish or wildlife."

34. Page IV-120-123 (Management Area Direction - No. 13). We support the deletion of bighorn sheep habitat from grazing allotments. In addition, the following should be added to the Range section: "Eliminate grazing in riparian areas where damage to fish or wildlife habitat can be demonstrated." In the Wildlife section, please include: "Allow trail construction or designation only where bighorn will not be adversely affected." In the Fish section we concur with the management of Cottonwood and Cabin Creek drainages for Paiute cutthroat trout. However, rather than merely considering the closure of the McCleod Camp Road, we believe that this section should state that the road will be closed at its crest.

35. Page IV-124-125 (Management Area Direction - No. 14). Portions of this area are extremely important as a winter range and migration route for several thousand deer. We request that the Lands section include the following: "Acquire, through land exchange, the private land used by the Sherwin Grade deer herd for winter range or migration

routes." A Wildlife section should state. "Allow no new roads, road improvements, or other habitat alterations that would adversely impact deer holding areas, migration routes, or winter range." A Range section should be added as follows: "Allow no increases in grazing where this might adversely impact deer habitat." We request that the Watershed section include the following "Monitor the tungsten mine tailings and insure that these are either ultimately removed or so stabilized as to not adversely impact the water quality or streambanks of Pine Creek."

36. Page IV-126-128 (Management Area Direction - No. 15). We concur with the designation of much of this management area as very important to the Buttermilk deer herd. Please add a Lands section which states: "Acquire, through land exchange, private lands known to be important to deer." A Range section should be included as follows: "Allow no increases in grazing where this would degrade fish or wildlife habitat, and modify or decrease grazing where fish or wildlife habitat is being adversely affected." A Wildlife section should be included which states: "Allow no new roads, road improvements, or other habitat alterations that would adversely impact deer holding areas, migration routes, or winter ranges." We concur with the consideration of portions of the South Fork Bishop Creek as a wild trout fishery as proposed in the Fish section.

37. Page IV-129-130 (Management Area Direction - No. 16). A Range section should be added stating: "Reduce or modify grazing if it can be demonstrated that grazing is degrading fish or wildlife habitat, particularly in riparian areas." Also, please add under Recreation: "Do not upgrade existing four-wheel drive roads to two-wheel drive."

38. Page IV-131-133 (Management Area Direction - No. 17). We have observed some severely over-grazed meadows in this management area. Please add a Range section stating: "Reduce, modify, or eliminate grazing where degradation to fish or wildlife habitat can be demonstrated." We concur with the management of upper Tinemaha Creek for Lahontan cutthroat trout as proposed in the Fish section.

39. Page IV-134-135 (Management Area Direction - No. 18). Please add a Range section which reads· "Reduce, modify, or eliminate grazing where degradation to fish or wildlife habitat can be demonstrated " Also, the following should be included under Wildlife: "Develop water sources where possible for deer and other wildlife."

Page IV-137-138 (Management Area No. 19). Management Area 19 contains numerous deer fawning areas Allotment plans should be revised to reflect the need to maintain quality fawning habitat for the Monache deer herd Flexible on and off dates

should be included in these plans so that yearly variations in range readiness can be used to determine actual grazing dates each year.

40. Page IV-136-138 (Management Area Direction - No. 19). We believe the following statement should be added to the Range portion: "Reduce, modify or, if necessary, eliminate grazing in those areas (particularly riparian zones) where grazing is shown to be detrimental to fish or wildlife habitat."

Page IV-138 (Fish). This section should include the measures needed to restore fish habitats and prevent further degradation. Measures needed include the management of livestock, recreation user control and measures designed to prevent soil disturbance and associated stream siltation.

Page IV-139 (Management Area Direction - No. 20). Monache Meadows is a critical, high-quality fawning area in addition to being a spring and fall holding area. The Monache area is an integral part of the golden trout habitat in the South Fork Kern River drainage. Proposed management in this area will impact golden trout. Restoration measures are needed in the South Fork Kern River and its tributary streams. In light of the potential designation of the Kern as a Wild and Scenic River, livestock should be managed in this area in a manner that will allow for the restoration of stream habitat. Off-road vehicle (ORV) use and timber harvesting activities should be consistent with maintaining or improving stream habitat. The contention that "(ORV users) have a vested interest" in using this area should not be used to justify a continuation of activities that are adversely affecting fish and wildlife habitat. We believe uses of the national forests are privileges, rather than vested rights, and the privileges should not extend to activities which damage the basic productivity of the land.

41. Page IV-139-141 (Management Area Direction - No. 20). The following statement should be included under Range: "Reduce or, if necessary, eliminate grazing in those areas (particularly riparian zones) where grazing is shown to be detrimental to fish or wildlife habitat."

Page IV-141 (General). Because of the importance of this area to the Monache deer herd, additional prescriptions need to be added for the protection and enhancement of the deer herd. The area of particular concern is the South Sierra Wilderness, where no treatment of summer range vegetation will occur for the benefit of deer. The 1981 Clover Fire has shown that fires in this area play an important role in regenerating native vegetation to the benefit of deer and other early successional stage wildlife. There is a need to have appropriate management actions listed in the deer herd plan.

42. Page V-6 (Monitoring Plan by Resource). The Additional Annual Cost figure should be increased to reflect the stream evaluation procedure utilizing GAWS as recommended by the DFG.

43. Page Plan A-5 (Inventories, Wildlife). We concur with the proposed survey to determine the distribution of the Inyo slender salamander.

The following are specific comments on the DEIS:

Draft Environmental Impact Statement

1. Page S-13 (Wildlife and Fish). We question if deer are actually receiving priority over livestock in the preferred alternative, when livestock grazing is slated to increase 9 percent and deer numbers to decrease 2 percent. In fact, as proposed, the preferred alternative deletes the majority of critical migration routes from the Mule Deer Prescription. To realistically "emphasize the integrity of mule deer migration routes", the preferred alternative should expand the Mule Deer Prescription as shown on our preferred alternative map.

   Delay of livestock grazing on identified key fawning habitats is also recommended, as mentioned elsewhere in the DEIS.

2. Page S-26 (Range). The projected increase in the demand for red meat is apparently based on out-of-date information. More recent U. S. Department of Agricultural Economic Research Service sources are reporting current and predicted declines in this demand.

3. Page S-27 (Alpine Skiing) The DFG favors revision of The Forest Service-Town of Mammoth agreement that Sherwin Bowl be evaluated as the initial ski area. We support the view that all potential ski areas should be assessed in a comprehensive environmental document, designed to compare relative impacts of the alternative sites. In addition, we believe that no ski area should be approved until the Plan is approved and adopted.

   In listing the factors limiting ski area development, the DEIS fails to mention natural resource values. Factors such as visual quality, wildlife habitat, and water quality should be listed and given primary consideration.

4. S-42 (Listing of Consequences of Alternatives on Wildlife) The DFG appreciates the candid assessment of consequences to wildlife This assessment reveals the underlying direction

of the preferred alternative, by recognizing reductions of critical habitat components: Mule Deer: 2 percent, Old Growth· 59 percent; Early-mid succession brush: 32 percent Wet Meadows: 17 percent, Snags No change. Our position is that these resources could and should be improved, not degraded, as a result of this Plan. The rationale for such improvement can be found throughout the DEIS. For example, on page S-28, figures are given for RUD's expended in 1982 for fishing, deer hunting, and other wildlife related activities. These figures total 491,000 RUD's, indicating high demand for these resources. In fact, it appears that the planned reduction of wildlife habitat capability is contrary to the principle of multiple use of all forest resources and the principle of maximizing net public benefit as stated in the DEIS on page I-1. We believe that if our major points for wildlife resource protection and enhancement were incorporated into the final Plan, that a reversal of this planned deterioration of wildlife habitat could be achieved.

Management Prescriptions

5. Page II-49 (Mule Deer Habitat Emphasis). "Key mule deer habitat", as mentioned, applies to "suitable winter range, summer range, fawning areas, and/or holding areas . . ." This description should include migration routes, a crucial component of the annual habitat requirements.

Forest-Wide Standards and Guidelines

6 Page II-44 (Riparian Areas). In addressing the major impacts to riparian areas, we support wording such as "Modify grazing, rehabilitate or fence riparian areas that consistently show resource damage or abuse if conflicts cannot be resolved otherwise".

Preferred Alternative

7. Page II-57 (Fish). It would be helpful to refer to stream habitat by miles instead of or in addition to acres.

   Page II-58 (Preferred Alternative). The statement that "Wildlife habitat would be managed with the objectives of minimizing the forest-wide reduction of deer habitat capacity . . ." is unacceptable to the DFG. Eight management plans have been developed for herds on the Forest. These plans call for maintaining or increasing deer populations; i.e., maintaining or improving habitats. Accordingly, the preferred objective for deer habitat should state: "Maintain or increase the forest-wide deer habitat capacity."

STATE AGENCIES

8. Page II-59 (Facilities). The proliferation of roads degrades wildlife capability, visual resources, and soil and water quality. An allowance should be made for a reduction of road miles through closure and obliteration. Accordingly, a statement should be added stating "Reduce road access where desirable to protect wildlife, scenic, soil and water resources; road closure or physical obliteration may be used "

Resource Program Direction

9. Page II-60 (Riparian Areas). The high value of riparian areas for water quality and fish and wildlife, should be recognized in the stated direction for management of these types. The statement should read: "Prohibit any activities in riparian areas that would have unacceptable long-term effects on water quality, fish, other aquatic fauna, wildlife or water-dependent plant life."

10. Page II-61 (Wildlife). The value of vegetation treatments, including prescribed burning, varies by site, soil type, vegetation type, and other factors. The DFG would like to participate in planning any vegetation treatments for wildlife or range benefits. Please include the statement· ". . . in consultation with the Department of Fish and Game, Bureau of Land Management, Department of Forestry and other concerned agencies."

In addition, we believe that habitat for chukar partridge, an important harvest species on the Forest, can be significantly improved by fire. Provisions for such improvements could be allowed by a statement such as: "Investigate the possibility of improving chukar habitat through controlled burning, in conjunction with other management programs".

We especially support the direction not to increase cattle grazing on key deer winter range, to protect fawning habitat, to prohibit or modify ski, geothermal and timber management to minimize impacts to deer migration routes and to allocate a substantial nest stand for each nesting pair of goshawks. We have elsewhere recommended 125-acre nest stands for goshawks, and the Forest direction is closer to this standard than any other Plan to date

We urge that goshawk nesting sites should be allocated 125 acres rather than 100 acres.

Page II-65 (Figure II-4). The number of deer supported by the Forest are projected to decline over the 50-year planning period. This decline is unacceptable to the DFG. The deer herd plans for deer on the Forest all call for maintaining or increasing the forest-wide deer habitat capacity.

Total Wildlife/Fish User Days

Page II-66 (Figure II-4). All deer herd plans call for increases in deer numbers and use, yet hunter use of deer from induced habitat improvement projects remains at 0 days. It is not clear what other developments will induce more deer without resulting in more use The larger the deer herds and better the habitat, the more the use will be. The base year data indicates only 25,200 Wildlife and Fish User Days (WFUDs) of use by deer hunters in the 1982 base year. In that year X-9 zone (Inyo, Mono Counties), 12,000 tags were sold and X-10 zone had 1,400 tags sold. If every hunter hunted only 2 days of the season, then 26,800 WFUDs would be used. Our hunter survey suggests the average deer hunter spends closer to a week hunting deer, indicating a serious underestimate in the Forest's WFUD figure. We know that not every hunter with a tag hunts, but consider the amount of time spent in the field greater than your predication. The source of the Forest's low figures should be cited.

Page II-86 (RPA Alternative). This alternative appears to be misnamed, in that where conflicts among goals occur, it would meet only those RPA goals for commodities. The Forest and Rangeland Renewable Resources Planning Act (RPA) specifically addressed improving the yield of tangible and intangible goods and services (emphasis added). This alternative would result in drastic reductions in wildlife habitat and species diversity, contrary to the clear intent of Congress. There is a real need for the Forest, especially under this alternative, to try to meet all of the 1980 RPA targets and goals. The prescriptions listed, in most cases, do not even meet MMRs or Standards and Guidelines.

Page II-115 (Amenity Values - Protection). To increase mule deer habitat capability, a burning program in wilderness areas should be established. Most summer ranges for mule deer occur in wilderness areas. Such a program should accommodate the habitat needs of wildlife as well as the need to protect forested watersheds which are essential to the restoration of high quality fishery habitat, all while reducing the likelihood of catastrophic fires.

Page II-130 (Timber). Timber areas where critical wildlife habitat exists need a modified harvest program. All of these areas need to be identified for future planning efforts.

Page II-131 (Wildlife). Timber harvest should be modified in key fawning areas and holding areas. Better dead-and-down standards are needed. Maintaining only 20 percent of suitable timber in older seral stages is essentially a timber-oriented option and not necessarily beneficial to wildlife. It seems unreasonable that the option identified

as a wildlife alternative has only the same or reduced benefits in comparison to the amenities option. There should be programs directed to increase wildlife species throughout the Forest. As an example, only 580 acres of habitat are treated for enhanced wildlife habitat under this alternative, while the amenities alternative treats 820 acres of habitat. Given the lesser treatment area, an explanation is needed to show where the 20 percent increase in habitat capability going to be achieved.

Page II-133 - Figure II-18 No. 4 (Mule Deer). The acreage allocated for mule deer under the wildlife option is less than the preferred alternative, which is not designed to specifically benefit wildlife. We think this wildlife option should have considerably more emphasis on mule deer areas.

Page II-161-12 - Figure II-31 (Mule Deer). The number of animals represented under the PRF Alternative as compared to the current alternative only represents a 2 percent difference in loss of animals over a 50-year period, yet the PRF alternative gives specific direction to deer management. It seems inconsistent that the PRF alternative would do nothing to improve deer numbers on the Forest compared to present practices, while stating that actions will be taken to improve deer habitat.

The RPA goals state that deer numbers should increase by 20 percent, yet the RPA alternative proposes a 47 percent decline in deer numbers on the Forest. It appears that this alternative does not adequately consider the 1980 RPA goals for wildlife, especially deer, and is contrary to the intent of Congress in Sections 4 and particularly 5(c)(1) of the Act.

The document should provide a table or chart which makes comparison of all alternatives and the corresponding number of spotted owls and great grey owls. Comparisons of endangered species populations by alternatives should also be presented.

Page II-208 (Wildlife). According to our figures, only about 29,000 acres of brush would be treated for wildlife under the AMB alternative over 50 years, based on treatment rates disclosed on Page II-131. Figure II-38 reveals a figure of 102,000 acres of treated shrub. It would appear that the figures on shrub treatment in this alternative are overstated.

Page III-22 (Riparian Areas). It appears that natural fires in wilderness areas are not considered to be natural or necessary for the maintenance of wilderness values. All fires, whether in wilderness or not, will be put out. Some discussion should be made of the potential to allow nature to

control plant diversity in wilderness by developing a plan which would lead to eventually allowing natural fires to burn.

Page III-82 (Riparian Areas). Under the preferred alternative, a 17 percent loss of wet meadows would still occur, even if Best Management Practices (BMPs) and Watershed Improvement Needs (WINs) are applied. With unlimited budgets, a total program of protection and restoration should apply. Riparian areas are already 90 percent damaged, yet increases in livestock and recreation are predicted. These areas need primary consideration for protection and restoration before increases in conflicting uses occur.

Page III-86 (Sensitive Plants). Please see attached comments from the Natural Diversity Data Base.

Affected Environment

11. Page III-22-23 (Diversity, Shrub and Pinyon-Juniper Types). We recognize that fire protection and suppression have interrupted the natural environment of a mosaic of areas which have undergone a reversion to earlier seral stages, and we support vegetation management to rejuvenate shrubland and Pinyon-Juniper types. Caution is advised, however, as bitterbrush ranges can be destroyed by fire combined with grazing animals.

12. Page IV-32-34 (Facilities). (1). The DFG specifically opposes the planning for new road construction and timber management in the old growth red fir forest on San Joaquin Ridge, including Glass Creek Meadows in particular. As previously stated, we support retention of high value natural resources: deer migration routes, holding areas, summer range, important mountain lion habitat, old growth forest, (i.e., spotted owl habitat) and scenic values. (2). Where are the 68 Miles of new Forest roads proposed to be located? Are wildlife values being considered and will the DFG be consulted regarding location, design, resource values, etc.? (3). We deplore the existing ". . . network of primitive vehicle routes which already permeates most suitable timber lands" (page IV-33), as their most apparent effect is degradation of snag-related wildlife habitat. "Dead-and-down wood is legally available to woodcutters and declines rapidly whenever it is accessible by vehicle" (page S-36). The public has identified the "need to reduce roads to prevent environmental damage" (page I-15), and Standards and Guidelines recognize the need to "upgrade, close, or obliterate road segments as needed for public safety and/or resource protection." Accordingly, the DFG requests specified plans for closure or obliteration of unnecessary and resource-damaging roads to be spelled out in the preferred alternative.

13. Page IV (Fish) and Page IV-39 (Assumptions). Statements in both sections referring to effects of livestock on fish habitat mention mitigation of adverse impacts However, no method of quantification of impacts to justify required mitigative measures is provided. The DFG recommends that the GAWS-related evaluation and monitoring procedure described in our Plan comments be adopted in order that effective mitigation measures can be identified, implemented and monitored.

14. Page IV-37 (Consequences Common to All Alternatives). It may not be in the best interest of the fish resource to increase grazing, or even to maintain current levels. This paragraph should be modified to the following: "Although overall grazing numbers vary by alternative, all increases are projected for lands located away from sensitive fish habitat. Actual grazing numbers will be dependent upon the results of the GAWS stream evaluation on a case-by-case basis."

15. Page IV-76 (Assumption). A logical assumption would include "substantial reduction in livestock numbers" as a positive means of addressing observed (not "potential") competition between livestock and wildlife.

16. Page IV-91 (Alpine Skiing). We concur that ski area development on the Forest should be curtailed if resource limitations, particularly related to water, are identified. These potential limitations should be identified and quantified prior to any approvals for further ski development.

17. Page IV-94 (Alpine Skiing). We repeat the need to examine all potential ski area sites to objectively rate their varying environmental consequences. Such examination would permit selection of alternative(s) with lesser environmental impacts.

    The statement "No land allocation objectives would prevent or modify the development of alpine skiing " . . . under the preferred alternative is unclear in view of the Forest's stated objectives to maintain key wildlife habitat, water quality and other valuable natural resources. Clarification of this statement is needed.

18 Page IV-109 (Riparian Areas) We agree that livestock graze disproportionately in riparian habitat This fact represents the most deleterious aspect of livestock grazing where wildlife resources are concerned. The narrative continues with the inference that grazing impacts ". . . would be associated with the 1,000 to 2,000 acres of wet meadows found in areas on which grazing increases under some alternatives." This assessment fails to recognize the

existing abuses to and needed restoration of riparian habitat and aspen types, especially along the base of the Sierra escarpment (i.e , Bohler Canyon area, Parker Bench vicinity), and in the Glass Mountains, both locations where deer and other wildlife habitat is heavily degraded.

We support stronger wording to encourage riparian habitat improvement. Please consider the following wording: "The effects of livestock on riparian areas and aspen groves can be reduced by reducing the amount of time animals spend in those areas; this can be accomplished by fencing, salting, herding, water development, changing on and off dates, or deferring or eliminating grazing."

19. Page IV-110 (Assumptions). The first assumption is incomplete, in our view, since it fails to mention grazing modification as a potential to improve riparian vegetation. Grazing, as stated in the EIS has a major effect on riparian types. A more realistic assumption would read; "Grazing modification or elimination, rewatering of streams, and watershed improvement have the greatest potential to maintain, enhance, and/or increase riparian vegetation on the Forest." It seems likely that physical watershed improvements will be unsuccessful without moderation or elimination of grazing impacts, at least during a recovery period. We also find incomplete the assumption regarding energy development. Mitigating (reducing or eliminating) the impacts from this activity could also be accomplished by denying a project where environmental impacts are deemed unacceptable (i.e., in key riparian areas). This assumption should read; "Impacts from energy development can be mitigated by moderating the size of development, the location of development or impacts could be prevented by denying the development where environmental consequences dictate."

20. Page IV-111 (Preferred). We find it unacceptable to plan for "moderate" increases in grazing impacts to riparian types, realizing that 90 percent of the wet meadows on the Forest have been damaged or are threatened. Adequate planning incorporating the above-mentioned grazing modifications should result in improved overall riparian conditions.

21. Page IV-114 (Sensitive Plants). We think the document should state that livestock grazing, in addition to vegetation treatments, can have major effects on sensitive plants through direct disturbance, trampling, and consumption.

22. Page IV-163 (Wildlife). This section also makes valid points regarding timber roads and their effect on wildlife. We strongly concur with the statements referring to ". . . increased human disturbance associated with improved

access"; and that "timber harvest in the Monache area and the red fir forest east of San Joaquin Ridge would have the greatest potential effects on deer populations." Also, we agree with the statement that "The effects of public wood cutting on snag-dependent wildlife would be roughly proportional to the amount of timber harvest, as the size of the timber cut is an indication of improved vehicle access to forested lands." The DEIS makes a strong case for road closure/obliteration and a prohibition of timber harvest of red fir at San Joaquin Ridge.

23. Page IV-164 (Wildlife Indicators). Recent research of the Casa Diablo deer herd indicates that many, if not most, of these animals summer on the Forest. The same may also be true of the Mono Lake and possibly East Walker herds (research upcoming). This fact indicates the importance of Forest summer ranges for deer, large areas of which are found to be degraded for deer use by livestock. This should be mentioned in this section of the DEIS.

24. Page IV-165 (Wildlife Indicators). We believe the conflict between Sierra Bighorn and domestic livestock is major and crucial. Diseases carried by domestic sheep are readily transmitted to bighorn. The latter cannot survive exposure to domestic sheep and their diseases and the separation of the two is required.

25. Page IV-165 (Wildlife Assumptions). Spotted owls should be mentioned as dependent on old growth forest, and the importance of San Joaquin Ridge red fir forest should be reiterated. These facts underscore the appropriate comment on this page addressing goshawk that ". . . older stages . . . are extremely productive in terms of wildlife."

26. Page IV-169 (Old Growth). We find unacceptable the planned 65 percent reduction (in existing stands) of old growth timber, in view of the high value of this resource, as stated above.

27. Page IV-169 (Early and Mid Successional Brush). Due to the high value of this type of vegetation for deer, sage grouse and other species, we find it unacceptable to plan for a 69 percent decrease. These habitats should be managed to maintain or increase the species dependent upon them, as stated in the Deer Herd Management Plans. Correcting this planning direction would also help correct the unacceptable planning for a 50 percent reduction in sage grouse as illustrated in Figure IV-47.

28. Page IV-177 (Riparian Areas). We disagree that the intensity of range use must increase in riparian areas. If it is creating unmitigable adverse impacts, range use in riparian areas should be curtailed or eliminated.

Department of Fish and Game Detailed Analysis
of Inyo National Forest Land and Resource
Management Plan and Draft Environmental Impact Statement

NONGAME-HERITAGE PROGRAM/ENDANGERED SPECIES STAFF

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 DFG, 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 DFG has assembled over the past 6 years, contains much of the 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 DFG believes that for the Forest to comply adequately with the letter and intent of the National Forest Management Act of 1976, and in particular Section 1604 (g)(3)(b), the Plan must demonstrate the ability and intention of the U. S. Forest Service to manage and preserve all of the rare animals and plant taxa presently found in the Forest. Absent proper management, these taxa are the most likely to be adversely affected by forest management 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 protect rare species, but only in part. In point of fact, the indicator species chosen in the 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 DFG 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 (e.g., species listed in the California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California and not included in any of the above categories, etc). 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, but not limited to, the dedication of Research Natural Areas (RNAs) and Special Interest Areas (SIAs), should be described. It is not sufficient to address the diversity issue merely by formulating plans to retain a certain percentage of major vegetation types in described seral stages. 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 based on an ecological analysis of the Forest, the actual acreage of uncommon types and their stages to be retained, and direction regarding how to actively manage the Forest to attain these objectives. Moreover, neither the DEIS nor the Plan provides a comparison of baseline diversity, i.e., the current relationships between vegetative types and seral stages and estimated "natural" diversity, i.e., the presettlement relationships, and whether this represents an ecologically sustainable situation. In the event that the Forest is skewed toward older seral stages as a result of fire suppression (see page III-22 of the DEIS) it is doubtful that maintenance of 5 percent of each timber type and 10 percent of each shrub type in each seral stage could bear much resemblance to an historically diverse condition. This comparison should be made and retention standards for seral stages of naturally diverse vegetative types should be designed to address existing deficiencies.

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. We are particularly concerned that the regional philosophy for management is to provide the minimum acceptable level of performance necessary to accomplish objectives; neither more nor less. This puts a premium on the development of secure objectives for sensitive species. Many of these requirements are addressed in Chapter IV of the Plan, a portion of which describes fish and wildlife goals and objectives and forestwide standards and guidelines. The major deficiency of this most critical chapter is its comprehensiveness with respect to rare species. These comments are explained in greater detail below.

Goals and Objectives Regarding the Plan's goals listed on page IV-6, the goals pertaining to threatened, endangered, and sensitive species, provide that habitats of such animals should be protected or improved. This goal should also explicitly include threatened or endangered plants (listed by

either the Federal government or the State of California) as well as animals. Moreover, this goal should contain a provision which demonstrates the Forest's commitment to identifying critical habitat of T & E species, and to development of specific measures to prevent destruction or adverse modification of such habitat as required in CFR Section 219.19 (7).

The species-specific objectives described later in Chapter IV represent a distinct improvement over most other plans reviewed to date because they meet requirements of the above-cited CFR Section and FS Manual 2672.32. Nevertheless, the DFG recommends that the Plan should include 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. Finally, to make sense to those interpreting the Plan, such objectives should be described in the Plan in relation to the goals and standards and guidelines.

Standards and Guidelines. Fish and wildlife standards and guidelines in the Plan represent a much greater attention to the detailed protection needs of these resources than most other Region 5 plans reviewed. Nonetheless we still have concerns regarding two issues. First, on page IV-40 of the Plan, goshawk (Accipiter gentilis) guideline (b) should provide for the establishment of 125-acre rather than 100-acre protected nesting territories. Second, on page II-47 of the DEIS (and IV-41 of the Plan) the goshawk guidelines suggest that territories should be located in "unsuitable timber as long as high quality habitat can be found there." By placing territories in such unsuitable timber, the natural distribution of goshawks probably will not be maintained. Territories should be located to best approximate a natural distribution.

Management Areas. On pages IV-85 through IV-141, the Plan provides directions for 20 "Management Areas," in which one or more of 18 management prescriptions will apply. The DFG recommends that (1) specific management areas for critical habitat of T & E, candidate, sensitive, and de facto rare species (including for example, areas emphasizing goshawk, peregrine falcons [Falco peregrinus] and bald eagle [Haliaeetus leucocephalus]) should be described; (2) in addition to the prescriptions for "bighorn sheep habitat emphasis" and "muledeer habitat emphasis", particular species-specific management prescriptions should be devised to treat management areas when an area dedication is inappropriate (i.e., a habitat patch is too small, etc.) but rare or sensitive species are known or believed to exist

STATE AGENCIES

Indicator Species. On pages III-124 through III-131, the DEIS discusses "management indicator species" (MIS), and identifies the species chosen for management emphasis. Three comments are in order. First, the list of species chosen as MIS should include all rare plants and animals in addition to those listed. It is not necessary that all MIS be "useful . . . for estimating the effects of management activities on wildlife habitat in general" (emphasis added), as contended on page III-124. (Also, see below section 3 of these comments pertaining to plants.) This list of MIS should include aquatic animal species as well as terrestrial animal species. Second, since the NFMA regulations specifically require that habitat for each MIS is maintained and enhanced, the Plan should clearly indicate how this will occur for each MIS. The DFG contends 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 MIS, and especially those indicator species that are rare. Third, on page IV-167 of the DEIS, Table 4-46 indicates that if the Preferred Alternative is chosen, there will be a decrease in the capability for 4 of the 7 MIS habitats over the 50-year life of the Plan. This is not only undesirable from a wildlife standpoint by itself, but it violates CFR 219.19, which in part requires the maintenance and improvement of habitat of all MIS. On page IV-113 this decline in habitat is attributed to the reduction in snags and older seral stages of conifer habitats on areas managed for timber and riparian habitat on areas managed for grazing and recreation. The DFG recommends that timber, grazing, and recreation management acreage and practices be adjusted to permit the plan to comply with CFR 219.19

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. Also, on page S-5, the DEIS indicates that fish habitat will be managed for recreation and recovery of threatened trout species. Because fish are also vertebrates, there should be a statement that commits the Forest to maintaining viable populations of all fish species.

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 V-10 states that annually, the presence of MIS will be compared with the presence of the species they are intended to represent. The Plan indicates that this will be accomplished for $6000. There are 400 terrestrial vertebrates found in the Forest (389 of which are planned to be represented by MIS). The presence of each of these species will thus be determined for an average of $15.42 for each species. We think this is unrealistic. This comparison, along with an review of habitat capability trends and related surveys, is meant to comply with the provisions of CFR Section 219.19. To ensure viability, it is necessary to monitor carefully population trends of all rare species. Therefore, all species for which viability is a concern should be specifically named and monitored by conducting direct counts on established sample plots.

Individual Species Comments. With respect to goshawks, on page III-127 and III-128, the DEIS discusses habitat requirements and especially the relationship of quality of habitat and old growth timber/forest. The section, however, fails to describe the importance of aspen groves to habitat requirements. Such a discussion should be presented.

With respect to peregrine falcons, on page III-127, the DEIS indicates that the species is federally listed as an endangered species. It should be added that this species is also a State of California listed endangered species.

With respect to bald eagles, first, the same comment made regarding peregrine falcons applies. Second, on page I-6 the DEIS lists the "Bald Eagle Draft Recovery Plan." This should be updated to read "Pacific States Bald Eagle Recovery Plan (1986) " Third, on page II-47 the DEIS establishes a forest-wide standard prohibiting new winter uses or recreation

developments within .25 mile radius of the "identified winter roosting area." This distance would only be appropriate if a specific management plan for the area were develped and it justified such a radius. However, without such a plan for the area, the standard should provide for a minimum of 800 meter radius prohibiting development and intense human uses. Fourth, on page IV-40, four forest-wide standards and guidelines are recited for bald eagles. Standard and guideline 1.c. refers to wintering areas. To be consistent with the existing recovery plan, this standard should direct management to maintain existing winter habitat sufficient for 20-30 bald eagles. Also on the same page, standard and guideline 1.e..should be added to direct the Forest to implement the Pacific States Bald Eagle Recovery Plan prepared for the U.S. Fish and Wildlife Service.

With respect to Owens tui chub (Gila bicolor snyderi), on page III-31 the DEIS indicates that, although known critical tui chub habitat lies within the Forest boundary, it is on private land and, therefore, its habitat is not a management concern. This section fails to indicate that the tui chub was found historically in Forest waters. This fact should be made clear. Moreover, since recovery activity virtually always includes reintroduction into suitable habitat within the historic range of an endangered species, the DEIS and Plan should make provision and committment to such recovery actions as well as participate in developing and otherwise implementing a recovery plan.

With respect to the Owens pupfish (Cyprinodon radiosus) on page III-32 the DEIS indicates that it is classified as a "threatened" species. This is incorrect; it is classified as "endangered." The DEIS should be corrected.

3. PLANTS

On page III-86 of the DEIS, Table III-21 indicates that there are 18 sensitive plant species that occur on the Forest. Records of the NDDB indicate that Sedum pinetorum should be deleted, Lupinus dedeckerae should be renamed Lupinus padre-crowleyi and four additional taxa added: Arabis tiehmii, Draba asterophora asterophora, Lupinus sublanatus and Phacelia nashiana The NDDB has information on these species and their locations which will be provided to you upon request.

Despite the repeated statements 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 (on page B-2 of the Appendix) should provide for the completion of such inventories and surveys.

On page II-35, the DEIS discusses the identification and protection of critical habitat for T & E species. These "Minimum Management Requirements" (MMRs) should specifically address critical habitat for T & E plant taxa, as well as animal taxa.

On page II-38, the DEIS describes one "Minimum Implementation Requirement" (MIR), which relates to sensitive plants. At a minimum, the following MIRs for sensitive plants should be adopted in the Plan in addition:

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 III-85, the DEIS discusses the current circumstances surrounding sensitive plants. The DFG recommends that, to supplement this material, the section should discuss the relative rarity of the taxa, where they are known to occur, the size of existing populations, an estimate of a viable population size, the amount of genetic diversity represented by these populations, and the threats or lack of threats on these populations which result from management activities that are currently permitted on the lands they occupy.

Page III-124 of the DEIS lists the management indicator species selected for the Forest. This list contains no threatened, endangered, or sensitive plant species. The DFG recommends that all such species be designated as MIS.

4. COMMUNITIES

With respect to SIAs, Figure III-22 found on page III-89 on the DEIS lists a number of candidate National Natural Landmarks but fails to describe the special features of each. This omission should be rectified.

STATE AGENCIES

With respect to meadows and riparian areas, on page III-82 the DEIS states that accelerated erosion in wet meadows is a serious problem, that the problem was created primarily by overgrazing 50 years ago, and that even if all grazing were stopped, the erosion would continue. There is no indication that the Forest is committed to implementing procedures to actively address the restoration of wet meadows. The DFG suggests that restoration is needed to comply with the NFMA diversity requirement as well as other requirements of the law. This could be accomplished, in part, through a management prescription for wet meadows and/or riparian areas. But, no such prescriptions are found summarized on page II-48 through II-54 of the DEIS. The DFG recommends that such prescriptions be developed for the Plan and that management areas be designed to target locations for their application. In addition to prescriptions to protect riparian areas, the DFG recommends that standards and guidelines be added (see page IV-30 to IV-33 of the Plan) that provide for the restoration of already degraded areas.

In conclusion, the DFG recognizes that the Forest 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, animals, and natural communities, requires considerably more attention than it has received to ensure that the minimum legal requirements will be satisfied. The DFG stands ready to assist the Forest in reviewing our concerns and responding to the comments provided above.

STATE OF CALIFORNIA—THE RESOURCES AGENCY

GEORGE DEUKMEJIAN, Governor

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March 5, 1987

Dennis W. Martin, Forest Supervisor
Inyo National Forest
873 N. Main Street
Bishop, CA 93514

Dear Dennis:

Enclosed is a letter to the Editor of the Inyo Register in response to a previous letter to the Editor submitted by a private citizen regarding elements of the draft Inyo National Forest Plan. Our Region 5 Headquarters has directed us to submit this letter to you as additional comments to the Department's official response to the draft Plan.

If you have any questions regarding these comments please do not hesitate to contact me.

Sincerely,

Darrell Wong

Darrell Wong
Fishery Biologist

cc: K. Anderson, Long Beach
file

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STATE AGENCIES

Editor:

A letter in the Inyo Register (2/27/87) submitted by Mr Richard Brunsma contained statements regarding cattle grazing and trout management in the Cottonwood Basin of the White Mountains which require comment Contrary to the belief of Mr Brunsma much evidence exists that overgrazing in riparian and wet meadow areas is detrimental to wildlife (in our opinion portions of the Cottonwood Basin are currently overgrazed) Furthermore, such grazing is detrimental to stream fisheries by removal of streamside vegetation which provides cover and food (in the form of terrestrial insects) for fish However, the greatest damage wrought on a stream or meadow system by overgrazing is the increased erosion caused by trampling and removal of stabilizing vegetation. In a stream system the resulting unstable banks lead to greater erosion which results in substantially increased amounts of sediments entering the stream. This, in turn, greatly reduces the numbers of aquatic insects upon which trout depend for food, and smothers trout eggs incubating in the stream gravels. The streams and wet meadows in the Cottonwood Basin were formed without the benefit of cattle grazing, and will endure longer and be of greater benefit to fish and wildlife if the level of grazing is made compatible with resource protection. Additionally, tens of thousands of dollars of state and federal funds have already been expended to correct erosion problems in the Cottonwood Basin, much of it in an effort to improve trout habitat. It is unwise to continue these expenditures to correct problems when a major contributory cause of the problems continues.

It is also stated that the destruction of the "native" brook and rainbow trout fisheries in favor of Paiute cutthroat trout would be "sinful." As the Cottonwood Basin was originally barren of fish, none of the present trout populations are "native" to the Basin. However, the Paiute trout (a spotless, colorful, close relative of the Lahontan cutthroat trout and native to the Carson River drainage) is more of an eastern Sierra native than either the brook or rainbow trout (natives of the eastern U.S. and west slope Sierra respectively). The Paiute trout is comparable in color and form to our well-known golden trout, except it is more closely allied with the cutthroat rather than rainbow trout lineage. It is a unique form of cutthroat which occurs in very few other streams; we believe we are lucky that a far-sighted Fish and Game employee saw fit to stock them in the barren North Fork Cottonwood Creek in 1946 to protect them for future generations to enjoy. The Paiute trout can live quite nicely without human intervention (or it is unlikely that it would have survived for these hundreds, if not thousands of years), but like the golden trout, will hybridize with rainbow trout, and finds it difficult to compete with brook trout for food and space. Thus, both golden and Paiute trout populations require isolation if they are to remain pure with adequate numbers to provide

recreational fishing. The Paiute trout, like other trout, also requires clean spawning gravels if it is to reproduce. Because of the inordinate amount of siltation in North Fork Cottonwood Creek, favorable spawning habitat is scarce, requiring that managing agencies manipulate the population in order to maximize spawning to achieve an increase in the population size. Due to the relatively small number of fish in this short length of stream however, the North Fork remains closed to angling. If good habitat is available these trout will not only reproduce naturally, but will grow and significantly exceed the sizes of rainbow and brook trout currently inhabiting Cottonwood Creek. We believe that the expansion of Paiute trout throughout the Basin would be desirable for the following reasons: 1) local and visiting anglers would have the opportunity to catch one of the rarest and most beautiful trout in North America, 2) the sizes of Paiute cutthroat caught would be significantly greater than that of existing brook and rainbow trout, 3) the diversity of fishing opportunities in the Owens Valley area would be enhanced, 4) as potentially the largest population of pure Paiute trout in existence, fish from Cottonwood Creek could be utilized to reestablish populations in their native habitats in Alpine County and achieve full recovery of this currently threatened species, and 5) following recovery these fish could be used as another "management tool" by the Department by being available for establishment in other suitable Sierra waters to improve recreational angling.

We do not take issue with a multiple use proposal for the White Mountains, or with the proposed wilderness designations for a portion of that range (as presently suggested in the draft Inyo National Forest Plan). However, we believe that the public should be fully informed so that comments on the Forest Plan will be based on factual information.

Darrell Wong and Tom Blankinship
Biologists
California Department of Fish and Game

State of California

The Resources Agency

Memorandum

To : Donald Lollock, Chief
Environmental Services Division

Date : November 10, 1986

From : Department of Fish and Game - Inland Fisheries Division

Subject: Inyo National Forest Plan

The Inland Fisheries Division has reviewed the Inyo National Forest Plan and we find the treatment of fisheries to be remarkably brief. We question the rationale behind formulation of the alternatives.

Taking into consideration the substantial effort and supplemental funding provided by the Department of Fish and Game to the Forest Service's fishery program, it is difficult for us to understand the variability between habitat improvement level goals for the various alternatives. It appears particulary iconic that the highest level of fish habitat improvement for non threatened species is listed in the Alternative for Maximum Cost Efficiency. We don't understand why the Forest Service is not recommending the cost efficiency of that alternative be carried over to the Preferred Alternative. Also, partially because we are willing to help, we don't understand why the higher levels of habitat improvement for threatened Paiute and Lahontan cutthroat aren't included in the Preferred Alternative.

There are a number of high quality trout streams in the Inyo National Forest and we believe it is unfortunate that the plan appears to de emphasize their importance in management planning for increased commodity output. We believe the plan should speak clearly to the objective of maintaining high quality streams that have the potential for supplemental stocking.

We have discussed the Plan with Phil Pister from Region 5 and Jerry Staley from Region 4. We anticipate they will be providing detailed comments through their Regions. Although we have no strong objection to the Preferred Alternative, we feel that the Plan does not clearly describe and support its conclusions and recommendations and should be modified to strengthen its overall approach to fisheries improvement.

Bob Rawstron

Robert R. Rawstron
Chief

cc: Regional Managers, Regions 4 and 5
Phil Pister, Bishop Office

STATE AGENCIES

STATE OF NEVADA
DEPARTMENT OF WILDLIFE
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RICHARD H BRYAN
Governor

✓=Info X=Action

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	WILLIAM A MOLINI Director	

Region III III-87-087
State Mailroom Complex
Las Vegas, NV 89158
February 23, 1987

Mr Oliver Sapousek, Land Management Planning Office
Inyo National Forest
873 North Main Street
Bishop, Ca 93514

RE Inyo National Forest Plan and EIS

Dear Mr Sapousek

The draft of the Inyo National Forest Plan and EIS have been reviewed by Habitat, Game and Fisheries personnel in Las Vegas All are in complete support of the document and sincerely believe that if the standards and guidelines are implemented as stated, wildlife in the Inyo Forest cannot help but benefit A few comments were received from the field biologist in charge of the game resource in Esmeralda, and, it is hoped that these comments will be beneficial to the planning effort for the Nevada portion of the forest

1 It was hoped that the Nevada portion could be separated somewhat in order to secure wildlife management objectives, identify important local issues or assess potential environmental impacts It also seems that the Forest planners did not have access to Nevada Department of Wildlife plans or BLM planning documents for adjacent areas

2 The overall Inyo Forest standards and guidelines section of the documents adequately spell out mule deer habitat needs and objectives but there is not enough census data on mule deer to set population goals in the Inyo-Whites, and, in essence, management goals cannot be met until this occurs Helicopter surveys were conducted in 1980 and 1985-86 in the White Mountains and intensive ground observations were

made from 1982 through 1984 Population estimates have been formulated and used in harvest management decisions since 1982 and goal populations were set in this same year as published in the Esmeralda Resource Area Habitat Plan. The current population estimate for the White Mountains (1985-86) is 400 deer (92 bucks, 202 does and 107 fawns) in 240 square miles of habitat. Without a doubt, the preferred alternative "AMB" or "Emphasize Wildlife and Recreation" would be the best for mule deer habitats and populations in the Nevada portion

3 Recent field work (1983-86) indicates a population estimate of 400 sage grouse for the Nevada portions of the White Mountains including the Mineral County portion. It is felt that excessive grazing in all areas of the White Mountains inhibits survival of sage grouse young Additionally, competition for water and succulents near isolated springs and seeps is a factor contributing to providing stress on adult sage grouse Burning as a management tool in the bottoms of Trail and Middle Canyons has concentrated livestock grazing and impacts to sage grouse meadows nearby to the point of eliminating sage grouse use and causing secondary watershed damage in the form of erosion To further compound the sage grouse habitat problems, the northern White Mountains were designated as a wild horse unit, and, as such, the horses cause considerable damage to meadows It is felt that the Nevada portion of the White Mountains horse herd should be reduced to less than 40 horses and maintained at that level

4. No population for blue grouse was given in the Plan/EIS Based on 1986 observation and hunter reports, that population is believed to be 250-500 The excessive grazing impacts on high elevation meadows and riparian areas caused by livestock and wild horses also pose a threat to blue grouse populations

5 Field observations relative to desert bighorn sheep indicate that there is over 30 square miles of habitat in the White Mountains As it relates to the bighorn sheep resource, it is felt that forage impacts must be reduced to allow the resource to adjust toward goal numbers.

6 Upland game species such as chukar and quail received no attention in the documents. If this information is needed for the planning effort, it is available from the Nevada Department of Wildlife

STATE AGENCIES

Thank you for the opportunity to comment upon this document which will be the guidelines for the Forest Service for some time Hopefully, these comments will be of assistance to you and your efforts If you have any question or require additional input, please feel free to contact the Region III office of the Department at (702) 385-0285

Sincerely,

WILLIAM A. MOLINI, DIRECTOR

John Donaldson
Regional Supervisor

COP/lg

c c Habitat - Las Vegas (2), Reno
Game - Las Vegas, Pahrump
Fisheries - Las Vegas
Law Enforcement - Las Vegas, Tonopah

STATE OF CALIFORNIA - THE RESOURCES AGENCY GEORGE DEUKMEJIAN Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
LAHONTAN REGION
2092 LAKE TAHOE BOULEVARD
P O BOX 9428
SOUTH LAKE TAHOE CALIFORNIA 95731 2428

March 13, 1987

Mr. Dennis Martin
Forest Supervisor
Land Management Planning
Inyo National Forest
873 North Main Street
Bishop, CA 93514

DRAFT LAND AND RESOURCE MANAGEMENT PLAN (PLAN) AND DRAFT ENVIRONMENTAL IMPACT STATEMENT (EIS), INYO NATIONAL FOREST

Dear Mr. Martin:

We have reviewed the above-referenced documents. Our review of the Plan and EIS was focused on those portions of the documents related to water quality within the Lahontan Region. The following comments refer to those areas.

GENERAL COMMENTS

It is difficult to evaluate the implication of the Plan to our program, since forest plan alternatives are compared on a forest-wide basis rather than by management area or specific project sites However, the preferred alternative appears to provide adequate protection and enhancement of water quality in the Lahontan Region. We are pleased to see that one of the proposed actions is the restoration of riparian areas previously disturbed by forest activities

We would appreciate the opportunity to review individual projects proposed to be carried out under the new Plan which could affect water quality, such as timber harvests, intensive range management activities, renovation of existing forest facilities, expansion of existing ski areas and construction of new ones, geothermal energy development and construction of hydroelectric power plants We would also like to review relevant future plans and/or studies which could be developed

SPECIFIC COMMENTS

1. Pesticides are proposed to be used as part of an integrated pest management program, and herbicides may be used for reforestation, chaparral management, and other forest practices. Any chemical application within the Lahontan Region should be done with awareness of the Regional Board's general surface water standard which prohibits concentration of pesticides in waters of the region greater than the lowest detectable concentrations using the most recent detection procedures available.

STATE AGENCIES

2 We are also concerned about potential water quality impacts of other types of chemicals which could be used in forest management activities, including fire retardants and fertilizers Such impacts should be mentioned at least generally in the EIS and should be mitigated as necessary during project review.

3 The Plan and EIS, indicate that new mineral extraction, geothermal energy and hydroelectric power plant development activities may occur We wish to review and consider issuing waste discharge requirements for any new mining, mineral extraction, geothermal energy or hydroelectric power plant development activity within our region.

4. Proposed Forest Service monitoring for water quality is annually or in accordance with best management practices. The Regional Board may require more frequent monitoring for specific projects for which waste discharge requirements are adopted.

5. The Water Quality Control Plan for the South Lahontan Basin contains waste discharge prohibitions for various areas within the Inyo National Forest. Any wastewater reclamation/reuse within a prohibition area could only be allowed after an exemption for a specific project was granted by the Regional Board. In order to obtain such an exemption, it must be demonstrated that the reclamation/reuse would not individually or collectively, directly or indirectly affect water quality.

6. The potential impact of the continued or expanded use of off road vehicles (ORV) on water quality should be adequately addressed. The use of ORV's in or near surface waters may result in increased erosion and/or sedimentation.

7. Range use impacts on water quality, such as grazing, should be adequately addressed. Water quality objectives should be considered with other limiting factors when determining range uses for the forest.

8. Increased recreational uses may adversely affect water quality in areas which do not provide sewage disposal facilities. The potential impacts on water quality resulting from wastewater generation/disposal should be evaluated in the EIS.

9. If substantial changes are made in the preferred alternative in the final EIS, changes in water quality impacts should be analyzed.

We thank you for the opportunity to comment on the draft Forest Plan and draft EIS. Should you have any questions or comments concerning the above referenced matter please contact Ted Saari or Ken Carter in our Victorville office at (619) 245-6583.

Yours truly,

D. R. BUTTERFIELD
EXECUTIVE OFFICE

Curt Shafer

for Ken Carter
Senior Engineer

cc: Regional Board Members

STATE AGENCIES

STATE OF CALIFORNIA GEORGE DEUKMEJIAN Governor

BOARD OF FORESTRY
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February 17, 1987

Mr Dennis Martin
Forest Supervisor
Inyo National Forest
873 N Main Street
Bishop, CA 93514

Dear Mr Martin

The California State Board of Forestry (Board) has completed the review of the Inyo National Forest Draft Management Plan Several areas of concern were identified during this review process Based on these concerns, the Board approved and supports several recommendations which we believe need to be addressed in the final management plan for the Inyo National Forest

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 Inyo 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 reliance on the forest for local revenue, and a well-protected biological base are all part of that position

The Inyo 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 on the rural land base, 4) rights and responsibilities of public and private ownership, and 5) coordination and planning

As a result, ten areas of concern were identified for this region of the state These areas are 1) recreation 2) water 3) capable, available, and suitable lands, 4) unevenaged management 5) evenaged management 6) red fir 7) firewood, 8) wild and scenic rivers 9) budget and 10) aggregate review These 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

1 The Alternative

The Preferred Alternative (PRF) was developed to provide the best balance between commodity outputs, resource protection, recreational opportunities, protection of amenity values, and response to issues and concerns. The PRF responds to the increasing demands for recreational opportunities It recognizes and attempts to alleviate and correct riparian habitat problems. It responds to a water shortage problem which is affecting future community growth and stream resource values. The PRF makes the best balanced response to the many issues and concerns While the PRF does not provide all the benefits desired by any one group, it seems to provide a reasonable balance between amenity and commodity outputs For these reasons we can reasonably support the Preferred Alternative Several concerns have been identified, and as a result, we have proposed recommendations which should be incorporated into the final selected alternative Those recommendations are listed in the subsequent recommendations The result of incorporation of these recommendations into the final alternative would be to stabilize rural economies, provide better opportunities to maintain the biological base, be more responsive to social pressures and employment, and be more responsive to the rights of public and private ownership

2 Recreation

The forest is complimented for providing a comprehensive review of the quantity, quality, and type of recreation opportunities available to the public in the planning documents. The documents show that present use and future demand requires early attention be focused on improving existing facilities, as well as developing new facilities. This includes trails and interpretative sites The national trend toward reduced service and no new construction is contrary to the state's interest. This policy should be reve! ! for the Inyo and funds provided commensurate with

STATE AGENCIES

the public need Funds must be appropriated to accommodate increasing demand on an annual basis until such time as developmental and environmental limits are reached

It is recommended that our concern for improved maintenance and facility development be expressed at the highest levels in support of the balanced recommendations provided in the Preferred Alternative Our recommendation includes increased funding and personnel if this is required Additional reviews, investigations, research, inventory, verifying and updating is not needed Improved facility maintenance and development are the solutions which will satisfy public concerns and future demands

3. Water

Early day practices of diverting significant quantities of water from the forest and riparian zones, and the adverse environmental consequences that occurred, are no longer acceptable Approximately 50 miles of streams are currently dewatered for municipal, hydroelectric and irrigation purposes Riparian areas and dependent resources have been adversely altered. Management of riparian resources could be further threatened by additional consumptive uses Management of fish, wildlife habitat, riparian vegetation, and the related scenic and recreational values, is central to the mission of the Forest Service and a corresponding state interest

We recommend, as a way of supporting the forest, an improved balance be sought between consumptive and nonconsumptive uses of the limited water resource on the forest. We support setting forth stipulations in appropriate special-use permits so that impacted streams are at least partially rewatered in the future, and that new installations provide appropriate mitigation measures to protect in-stream uses

One caution, however, was noted concerning increased resident use of the local area This caution involves what appears to be a developing water shortage in the Mammoth and Owens Valley areas Mammoth Lakes already experiences a water shortage during summer months The draft plan does not discuss the impact a water shortage may have on future expansion of ski areas and campground opportunities This information should be contained in the final planning documents

4 Capable, Available and Suitable Lands

The Preferred Alternative calls for a reduction in the annual harvest over the next ten year period compared to the Current (CUR) Alternative This reduction is from 13 MMBF down to 10 MMBF This proposed reduction also involves a reduction in the number of acres on the Inyo designated as suitable for timber production, i.e., 110,000 acres down to 69,000 acres The reasons for these reductions were found to be withdrawals as listed below. Recommendations for reconsideration of these withdrawals are also shown.

a Lands steeper than 30%, but less than 60%, were withdrawn and involved about 21,000 acres These lands were withdrawn because of potential erosion and expense of harvest Computer runs on the 30-60% category showed deficit sales regardless of the species logged However, it was noted that the 30-60% category was probably too broad to analyze logging costs accurately

Possibly, some lands, especially Jeffrey pine stands in the lower ranges of this slope category, could be logged economically and safely from an environmental standpoint. It is recommended that an analysis be run on the lower slope classes from 30-45% Much of the timberland in the Inyo was said to occur on moderate slopes. It is possible that a significant percentage of the 21,000 acres in the 30-60% category would occur on slopes below 45%. We believe that logging on slopes of less than 45% should be economical and environmentally sound.

b Land in Monache Meadow was withdrawn and amounted to 4,500 acres. If access can be controlled, we suggest that this area be reexamined for possible inclusion into the suitable land base for timber production

c Lands for developed recreation and potential ski areas were withdrawn and amounted to 4,000 acres. The Board of Forestry's Southern District Technical Advisory Committee found that the Inyo was missing an opportunity to use these lands for sustained yield timber harvest through unevenaged management techniques Further, these areas were especially valuable in demonstrating timber harvest techniques and use of the forest resources to the millions of visitors who use campgrounds and ski areas on the Inyo

STATE AGENCIES

It is recommended that these areas be reconsidered for possible inclusion into the suitable land base for unevenaged timber management

5 Unevenaged Management

In general, the PRF called for use of only evenaged management techniques, but we encourage the use of regulated unevenaged management in areas reserved for visual quality, recreation areas, the Monache area, and streamside zones in order to manage these areas and provide protection and maintenance of the biological base

6 Evenaged Management

We are concerned over the use of evenaged management using 20 acre clearcuts in the Jeffrey pine type Some of these pine areas such as the Glass Mountain Management Unit, are located in arid regions with a very coarse and undeveloped pumice soil Large openings could result in microclimate changes which would require large expenditures of funds to regenerate. The Jeffrey area has historically been logged using a selection type of management and it may be advisable to continue use of the unevenaged techniques in the more arid portions of the Inyo

It was noted that the Inyo plan did not discuss any alternatives which used the unevenaged management silvicultural prescription We recommend that if such an analysis has been run on computer models, the information resulting from such an analysis should be revealed in order to determine the effect of timber harvest yields using this method This information should be made public before selection of the final alternative

7 Red Fir

We support the PRF in the proposed management and harvest of red fir areas on the Inyo These areas contain overmature and mistletoe infested timber and, in order to protect the biological base, planned entry should be made over the next decade into these stands Reforestation in the red fir type has not been shown to be a problem on the Inyo in the past using evenaged techniques, but unevenaged management in red fir should also be practiced in areas such as those designated for visual, developed recreation and potential and existing ski areas

8 Firewood

We found that the PRF proposed a reduced firewood harvest over the CUR. The reduction for the first decade was from 13,000 cords per year down to 10,000 cords per year and was further reduced in later decades While some of the reduction in later years was found to be necessary due to factors such as conversion to younger age classes of trees and an end to the current need for thinning activities, the relative reduction in fuelwood might be preventable A negative impact on local economies and the stability of rural areas is inevitable if fuelwood harvests are allowed to fall drastically since the communities such as Mammoth Lakes and Bishop are highly dependent on firewood for home energy needs Pinyon/juniper areas east of Mono Lake may be substituted, for example, for the loss of lodgepole areas which apparently will not require additional thinning in later decades Use of unevenaged management as suggested earlier, would also help increase firewood availability

Coordination of planning with other forest landowners is essential to determine if firewood quantities might be available on BLM or other ownerships in order to keep from creating a serious adverse economic situation for the local communities.

9 Wild and Scenic Rivers

Portions of the Kern and San Joaquin Rivers within the Inyo National Forest are recommended for wild and scenic river status in all alternatives Although we support the inclusion of these portions of the Kern and San Joaquin Rivers where within or bordered by designated wilderness areas, the economic and cultural consequences of this proposal needs to be fully understood by the public before incorporation into the final alternative.

We recommend that full disclosure of the economic and cultural consequences of addition of these rivers to the wild and scenic river systems be made public before approval of the final plan.

10 Budget

Funding is probably the most critical issue in the national forest planning process Each forest has indicated that the proposed plans present only targets that the forest feels

could be attained if funding were available Further, most planners appear to be in agreement that forests do not have any obligation to maintain production at proposed levels if there is insufficient funding It is impossible to determine what the long-term effects will be on the people of the State of California given USFS budget constraints The Preferred Alternative budget of $12 4 MM is $2 4 MM or 24 percent over the Current Alternative, or $2 5 MM (25 3 percent) over the base year This is a substantial increase considering the present budget cutting environment We feel that the Inyo National Forest will not reach full funding of the chosen alternative

It is recommended that the final plan fully explain in detail the intended fall back position and define minimum commodity and non-commodity outputs in the event that the selected alternative is not fully funded Our recommended priorities, given fewer dollars, would be to 1) protect the biological base 2) provide for increased recreational opportunities and 3) ensure a stable flow of commodity outputs We believe that the final plan should reflect these priorities at a reduced budget level

11 Aggregate Review

The forest does not exist to satisfy only the interest of the impact counties and their publics, nor those areas beyond which the forest is readily accessible The impact of the forest has a much larger horizon. Its commodity and non-commodity outputs, when added to the other national forests in California, are in demand and used throughout the state and beyond Demand for forest products, forage, water, and recreational opportunities will continue to increase to the planning horizon The impact counties contain several other national forests including the Toiyabe National Forest headquartered in Sparks, Nevada in the Intermountain Region These Forest Service lands have a significant impact on these counties The inability to review all forest plans simultaneously is a significant limitation because aggregate effects of the final plans could be significant This is a significant major shortcoming of the present forest-by-forest planning process We suggest that in order to resolve this concern, aggregates of plans by economic region be reviewed publicly before final decisions on preferred alternatives are made for individual national forests

Thank you for the opportunity to comment on this draft plan which the Board considers to be a good plan and one of the better plans we have reviewed

Sincerely,

Harold R. Walt

Harold R Walt
Chairman

cc Zane G Smith

STATE AGENCIES

State of California
Board of Forestry
1416 Ninth Street
SACRAMENTO CALIFORNIA 95814

Southern Forest
District Technical Adivsory Committee

December 23, 1986

Dennis W Martin Forest Supervisor
Inyo National Forest
873 North Main Street
Bishop, CA 93514

Dear Mr Martin

Re Inyo National Forest Draft Plan

The Southern Forest District Technical Advisory Committee formed a subcommittee of three members who met with the representatives from the Inyo National Forest on December 8 1986 Following the meeting, the SFDTAC developed a position statement as indicated below

The Inyo National Forest Management Draft Plan has been reviewed by the SFDTAC. Our comments are based on the various land use activities contained in the Inyo National Forest Draft Plan. The comments of the Committee members took into account the interest and concerns that were summarized in the Centennial Action Plan as follows

I Rural economic stability and development,

II Protection and maintenance of the biological base,

III Social pressures on the rural land base,

IV Rights and responsibilities of public and private ownership, and

V. Coordination of planning.

1 Timberland . Preferred Alternative (PRF) calls for a reduction in the annual harvest over the next ten year period when compared to the current (CUR) alternative The comparison is approximately 11 MMBF down to 10 MMBF This proposed reduction also involves a reduction in the number of acres on the Inyo designated as suitable for timber production, i e , 110,000 acres down to 69,000 acres The SFDTAC explored the reasons for this reduction and found the following categories of withdrawals

a) Lands with steepness over 30% and less than 60% were withdrawn and involved near 21,000 acres These lands were withdrawn because of potential erosion and expense of harvest Computer runs on the 30%-60% category showed deficit sales regardless of the species logged. However, the SFDTAC noted that the 30%-60% category was probably too broad to analyze logging costs. Very possibly, some lands, especially in Jeffrey pine in the lower ranges of this slope category, could be logged economically and safely from an environmental standpoint An analysis should be run on the lower categories, especially from 30%-45%. Much of the timberland in the Inyo was said to occur on moderate slopes, so it is possible that a significant percentage of the 21,000 acres in the 30%-60% category would occur in the reaches below 45%.

b) Land in the Monache Meadow area was withdrawn and amounted to 4,500 acres The SFDTAC discovered that this area was being proposed for limited vehicular access by four wheel drivers, horse, and hikers. The reason for this proposal was due to a decision made by the Regional Forester after proposals were made years ago to use the area for geothermal development A coalition of various users of the Monache area and Tulare County Supervisors opposed entry by the geothermal developers. However, the SFDTAC felt that use of the area for timber harvest was quite another matter Entry roads for timber harvest could be blocked off after use and other roads put to bed. The result is that 1 to 1.5 MMBF per year could be added to the allowable harvest on the forest by using the Monache area as well as providing protection and management of the biological base in this timberland area

c) Lands for developed recreation and potential ski areas were withdrawn and amounted to 4,000 acres The SFDTAC found that the Inyo was missing an opportunity to use these lands for sustained yield timber harvest through uneven-aged management techniques. Further, these areas were especially valuable in demonstrating timber harvest techniques and use of the forest resources to the millions of visitors who use campgrounds and ski areas on the Inyo.

In general, the PRF called for use of only even-aged management techniques, but the SFDTAC would encourage the use of uneven-aged management in areas reserved for visual quality, recreation areas, Monache area, streamside zones, and other places in order to manage these areas and provide protection and maintenance of the biological base Additionally, the SFDTAC was concerned over the use of even-aged management using 20 acre clearcuts in the Jeffrey pine type Some of these pine areas such as the Glass Mountain management unit, are located in arid regions with

a very coarse and undeveloped pumice soil Large openings could result in microclimate changes which would require large expenditures of funds to reforest The Jeffrey area has historically been logged using a selection type of management and it may be advisable to continue use of uneven-aged techniques in the more arid portions of the Inyo It was noted by the Committee that the Inyo Plan did not discuss any alternatives which used the uneven-aged management silvicultural prescription The DTAC would suggest that if such an analysis had been run on computer models, the information resulting from such an analysis should be revealed in the Draft Plan in order to determine the effect of timber harvest yields using this method

The SFDTAC does support the PRF in the proposed management and harvest of red fir areas on the Inyo. These areas contain overmature and mistletoe infested timber and, in order to protect the biological base, planned entry should be made over the next decade into these stands Reforestation in the red fir type has not been shown to be a problem on the Inyo in the past using even-aged techniques, but uneven-aged management in red fir should also be practiced in areas such as those designated for visual, developed recreation and potential and existing ski areas

The SFDTAC found the PRF proposed a much reduced firewood harvest over the CUR. This reduction for the first decade was from 13,000 cords per year down to 10,000 cords per year and became worse in later decades. While some of the reduction in later years was found to be necessary due to factors such as conversion to younger age classes of trees and an end to the current need for thinning activities, the relative reduction in fuelwood might be preventable. A great impact on local economies and the stability of rural areas is inevitable if fuelwood harvest are allowed to fall drastically since the communities such as Mammoth Lakes and Bishop are highly dependent on firewood for home energy needs. Pinyon/juniper areas east of Mono Lake may be substituted for example, for the loss of lodgepole areas which apparently will not require additional thinning in later decades Use of uneven-aged management as suggested earlier, would also help increase firewood availability. Coordination of planning with the forest landowners is essential to determine if firewood quantities might be available on BLM or other ownerships in order to keep from creating a serious adverse situation for local economics

The SFDTAC finds, as discussed above, that these are opportunities to increase the annual harvest above the PRF recommendation to a level at least equal to the CUR alternative An increase is necessary to protect rural economic stability Employment at the Inyokern mill could be reduced by the PRF proposed harvest level. It must be realized any potential reduction in timber harvest could have an economic fallout in areas removed from the Inyo including mills in El Dorado/Toiyabe area, central California area, and southern San Joaquin Valley. These impacts need to be analyzed in the Draft Plan before action is taken to reduce timber harvest volumes. It is a responsibility of public ownerships to maintain a healthy timber program in order to support the timber industry which was established on historical harvest levels An aggregate review of the accumulated effects of draft plans on national forests adjacent to the Inyo is essential in order to analyze the overall impact on employment in the lumber industry and receipts of the seven counties that are impacted by decisions made on the Inyo National Forest.

2. Mining and Lands....The PRF suggests a reduction in mining permits when compared to the RPA alternative. This reduction will be from 70 permits down to 50 in the first decade. The Owens Valley has historically been highly dependent on mineral exploration having contained such geological features such as the worlds largest tungsten mine which is located on the Inyo National Forest. The reduction of mining opportunities on the Inyo as shown in the PRF when compared to the RPA was found by the SFDTAC to be due to withdrawals of over 112,000 acres of land into the wilderness category. There are five separate wilderness areas being proposed in the PRF and while three of these located on the west of Owens Valley are supportable as wilderness, the other two located in the White Mountain Range and the Inyo Range, will lock up acres which have a proven geological potential for mineral exploration. The SFDTAC recommends no additional wilderness in these two areas during the first decade until a careful analysis is done of the mineral potential of these two ranges. Since the area is currently maintained as a defacto wilderness, there is no urgency to officially designate the area. Research into the economic potential of developing minerals which may be vital to the United States economy and security should be done in the two proven geological areas before an opportunity to utilize valuable resources is lost by proposing wilderness designations

3. Wild and Scenic Rivers....Portions of the Kern and San Joaquin Rivers within the Inyo National Forest are recommended for wild and scenic river status in all alternatives. The SFDTAC does not support this designation in those areas located outside current wilderness areas. The segment of the San Joaquin River located in the Reds Meadow area and the segment of the Kern River, located in Monache Meadows should not have either wild, scenic or recreational status until a further analysis is made of

future water diversion needs and other opportunities to use the resources in order to provide maximum protection and opportunities to maintain the biological base found in these two river stretches

4 Recreation . The SFDTAC finds that the increase in developed and dispersed recreation use, as well as ski area use suggested in the PRF is supportable and realistic in view of the increasing population in Southern California Much of the local economy is supported by and dependent upon recreation use of the Inyo National Forest. The PRF recognizes this fact and provides ample opportunity to gradually increase this legitimate forest use in order to maintain and stabilize local rural economies. One caution however was noted by the SFDTAC with regards to increased visitor and resident use of the local area This caution involves a developing water shortage in the Mammoth and Owens Valley ares. Expansion of resident populations and transient visitation may have to be limited in the future if new sources of water are not found. Mammoth Lakes already experiences a severe shortage during summer months The Draft Plan does not discuss the impact that the water shortage may have on future expansion of ski areas and campground opportunities.

5 Range . The SFDTAC supports the PRF in its projection of modest increase for grazing permits on the Inyo Local economies are dependent on the range industry and the area has high use for sheep as well as cattle grazing Increases in range opportunities will help improve and maintain the biological base and provide spinoff benefits in brush control and fire hazard reduction.

6 Wildlife and Fishing . .The SFDTAC supports the PRF in its projection of moderate increases in these land use categories since the local economies in the Mammoth Lake and Owens Valley area are dependent on and benefit from increases in hunter and fisherman use days.

7. Other General Comments....In many sections of the Plan, it becomes obvious that the Inyo is operating as an autonomous organization without regard to the cumulative effects that may result from activities proposed on adjacent forests or on the other Forests in California. For example, when the Inyo Plan discusses the proposed drop in firewood availability from the forest, there is a failure to discuss firewood that may be available from other forests or other local sources. The same can be said about the proposed reduction in timber volumes. In order for the Board of Forestry and the general public to be able to comment on the Plan, they really need to be informed of the overall impact of all the Plans on a Statewide basis For this reason, the SFDTAC recommends that none of the Forest Plan be approved until the cumulative effect of all the Plans can be studied.

Additionally, it was noted that the PRF calls for a budget of over $12,000,000 to implement whereas recent budgets on the Inyo have only amounted to $7,000,000. With the realization that future budgets may be even further below current levels, the Draft Plan should discuss what measures would be taken in order to protect the biological base at low budget levels. This information is necessary in order to adequately comment on the PRF.

In summary, the DTAC supported the PRF with the exceptions noted in the discussion above. If the recommendations of the Committee are accepted, there would be an increase in the scheduled harvest volumes over the life of the Plan due to an increased level of harvest in areas currently designated for recreation, ski areas, slopes over 30% and the Monache study area. The result of recommendations made by the DTAC would be to stabilize rural economies, provide better opportunities to maintain the biological base, be more responsive to social pressures and employment, be more responsive to the rights of public and private ownership and would greatly increase the coordination of planning.

Sincerely,

Roy L Killion
Secretary - SFDTAC

By

Norman W Cook
Alternate Secretary

NWC rmd

cc SFDTAC Members

US DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION NINE

ARIZONA
CALIFORNIA
NEVADA
HAWAII
GUAM
AMERICAN SAMOA

CALIFORNIA DIVISION
P. O. Box 1915
Sacramento, California 95809

December 2, 1986

IN REPLY REFER TO

HC-CA

Mr. Dennis W. Martin
Forest Supervisor
Inyo National Forest
873 North Main Street
Bishop, California 93514

File: 434.7

We have reviewed the Draft Environmental Impact Statement (DEIS) and the proposed Forest Management Plan, and offer the following comment:

The "proposed plan" discusses several proposals that would increase the use of forest land (mining, lumber, and public use). However, there is a very minimal discussion of the type of impacts these actions will have to the existing highway system. The California Department of Transportation (Caltrans) have identified several locations where there are some major problems to the existing facilities.

The Final Environmental Impact Statement (FEIS) should discuss the impacts to the existing highway facilities. Also, the FEIS should indicate some type of cooperation between the Forest Service and Caltrans in developing any type of improvement to the highway facility as a result of the "proposed plan."

Sincerely yours,

Michael A Cook
For
Bruce E. Cannon
Division Administrator

✓ = Info X = Action
FS
SECRETARY

DEC 8 1986

424

DEPARTMENT OF THE NAVY
WESTERN DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
PO BOX 727
SAN BRUNO CALIFORNIA 94066-0720

IN REPLY REFER TO

11010
Ser 2032A/P3-052
28 JAN 1987

Forest Supervisor
Inyo National Forest
873 North Main Street
Bishop, CA 93514

Subj: PROPOSED FOREST LAND AND RESOURCE MANAGEMENT PLAN ET AL FOR INYO NATIONAL FOREST

Gentlemen:

Thank you for providing us the opportunity to review the subject documents. We have examined the documents in terms of overall effects on Naval activities in the region of Inyo National Forest. In our view, these documents require no substantive comments.

Sincerely,

C. Thomas Johnston

C T JOHNSTON
HEAD, INTERGOVERNMENTAL COORDINATION SECTION

✓ = Info X = Action
FS
SECRETARY

FEB 2 - 1987

AD
REC
R/W/L/WATRSH
TM/ASFM
L/M
ENG
LMP
PAO ✓
CONTRACT
DISTS

FEDERAL AGENCIES

		Non-energy Mineral Potential Category (MPC)[1]					Energy Mineral Potential Category (MPC)				
		I	II	III	IV	V	I	II	III	IV	V
Total acres of potential		579,789	425,032	1,142,700	0	0	216,257	376,288	1,382,040	173,036	0
	Access Category[2]	Percent of total acres of each MPC affected					Percent of total acres of each MPC affected				
Alt 1	A	12	16	17	0	0	0	0	16	58	0
	B	27	2	4	0	0	1	4	12	7	0
	C	8	2	4	0	0	0	0	8	1	0
	D	53	80	75	0	0	99	95	6	34	0
Alt. 2	A	0	0	16	0	0	0	0	6	58	0
	B	16	2	3	0	0	2	5	8	1	0
	C	29	45	42	0	0	54	58	34	17	0
	D	55	52	40	0	0	45	36	52	23	0

[1]See attachment 2, from DEIS, Wallowa-Whitman National Forest, Oregon
[2]See attachment 3, from DEIS, Beaverhead National Forest, Montana

United States Department of the Interior

BUREAU OF MINES

WESTERN FIELD OPERATIONS CENTER
East 360 3rd Avenue
Spokane, Washington 99202

November 25, 1986

FS
SECRETARY
Info
Action
DEC 1 1986

Mr. Dennis W. Martin
Forest Supervisor
Inyo National Forest
873 North Main Street
Bishop, California 93514

Dear Mr. Martin

SUBJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS) AND FOREST LAND AND RESOURCE MANAGEMENT PLAN, INYO NATIONAL FOREST, CALIFORNIA (Your Reference: 1950)

Thank you for allowing us to comment on the subject plan. Our suggestions follow in order of importance.

1. We recommend that you combine a minerals potential map with a lands availability (legal and management constraints) for mineral location map, thus directly relating minerals availability to mineral potential. The public and your decision-making body will then be better able to analyze the potential impacts on mineral development. The cost of adding an additional map should be small compared with the value the map would have complimenting the plan.

2. Your mineral potential rating and availability rating classifications (figure II-176) are useful; however, we recommend another system. Our office reviews numerous EIS documents and has come across an excellent classification system as shown in attachment 1, Beaverhead National Forest DEIS.

We suggest a modification of this, as shown below, using percentages as opposed to acreages. We feel it is easier to envision the comparison and comprehend the effects each alternative may have on mineral resources. The numbers are the same as the Beaverhead table

The potential classification consists of five parts, with a range from high potential to very low potential based on current knowledge The availability classification consists of four categories, including withdrawn, specific legal protection measures, special management conditions, and standard operation conditions. Combining potential with availability and comparing acreages, an excellent statistical representation of minerals availability would be presented.

3. The Average Annual Outputs by Decade figures (example Figure II-4, page II-70) for each alternative with respect to minerals is not appropriate. Minerals output should be related to minerals production, quantified in tons, ounces, short ton units, etc.

   Operating plans are good indicators of activity level, but do not delineate the stages of development on these active claims. We recommend you break this group of operating plans into appropriate stages of development (i.e., minimal assessment work, intense exploration, ore deposit delineation, production). Also on the same table, the RPA goal seems unrealistic as compared to actual and predicted figures. Please explain why there is such a difficult goal and also why this goal is not being met.

4. Mineral potential is unknown in designated wilderness areas (page II-176, Figure II-32, footnote, subject plan). An attempt should be made to discuss minerals within these areas. Using available information, an idea of mineral worth could still be presented. USBM mineral resource studies of selected wilderness areas (Hoover, John Muir, Golden Trout, High Sierra) should be available at your office. We could furnish you with Minerals Industry Location System (MILS) printouts and production information, if needed, to properly complete this discussion

5. The background section of Minerals· Locatable (page III-47) needs further discussion on history. One condensed sentence does not truly reflect the actual past. Since past mining activity is important and long standing, a detailed discussion is necessary. A figure including mining districts, major past producers, and commodity identifiers could be included In order to suggest length of the expanded section, a comparison to the Recreation section (pages III-61 through III-78) indicates 17 pages as an approximate mark.

6. We recommend that the figures list within the Table of Contents be modified to show tables and figures separately. We found it confusing when looking for the maps (only one is included in the text portion of the subject plan Listing the tables separately would allow quick inspection of actual illustrations.

Should you have any questions, don't hesitate to call us at (509) 456-5350 or FTS 439-7931

Sincerely,

D'Arcy P. Banister, Supervisor
Minerals Involvement Section
Branch of Engineering Studies

Enclosures

FEDERAL AGENCIES

Table II-11

Mineral Evaluation Report

Alternative A

Energy					Non-Energy				
Access Category	Low	Mod	High	Very High	Access Category	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	16,648	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	875,119	357,782	213,140	D	0	856,082	340,999	307,178

Alternative B

Energy					Non-Energy				
Access Category	Low	Mod	High	Very High	Access Category	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

Energy					Non-Energy				
Access Category	Low	Mod	High	Very High	Access Category	Low	Mod	High	Very High
A	128,066	481,154	329,998	165,242	A	0	704,850	267,623	131,987
B	3,835	105,873	223	110,690	B	0	27,091	7,832	75,767
C	10,889	169,777	8,569	11,263	C	0	95,162	29,873	75,463
D	30,246	625,104	37,530	38,993	D	0	315,597	119,704	296,572

Alternative D

Energy					Non-Energy				
Access Category	Low	Mod	High	Very High	Access Category	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	83,286	49,076	138,657
C	22,309	302,479	50,680	24,115	C	0	190,031	68,515	141,037
D	18,685	470,073	78,877	51,294	D	0	305,026	114,207	199,696

Table II - 11 cont

Alternative F

Energy					Non-Energy				
Access Category	Low	Mod	High	Very High	Access Category	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	151,230	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

Energy					Non-Energy				
Access Category	Low	Mod	High	Very High	Access Category	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	697,507	147,083	118,461	D	0	454,037	231,720	312,673

Alternative H

Energy					Non-Energy				
Access Category	Low	Mod	High	Very High	Access Category	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	397,930	154,971	277,586

Alternative I

Energy					Non-Energy				
Access Category	Low	Mod	High	Very High	Access Category	Low	Mod	High	Very High
A	128,405	809,421	330,757	168,615	A	0	848,419	329,759	259,020
B	1,750	66,933	636	943	B	0	6,136	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

Energy					Non-Energy				
Access Category	Low	Mod	High	Very High	Access Category	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	38,655	506,842	170,956	119,536	C	0	437,432	176,320	222,237
D	14,191	428,072	171,359	93,496	D	0	379,203	133,397	194,518

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
BISHOP RESOURCE AREA
873 North Main Street Suite 201
Bishop California 93514

1609
CA-017.11

February 19, 1987

Mr Dennis Martin
Forest Supervisor
Inyo National Forest
873 N. Main Street
Bishop, CA 93514

Dear Dennis,

We have reviewed the Draft Environmental Impact Statement (DEIS) and Proposed Forest Plan and submit the following comments for your consideration:

Proposed Land and Resource Management Plan

III-19 (Minerals). 2nd paragraph should read - "BLM issues all authorizations for post-lease actions with input and concurrence from the Forest Service." Also, supply and demand paragraph needs updating on resource verification.

III-29 (Riparian Areas). We agree that an inventory of riparian habitat on the Inyo N.F. would be beneficial. We suggest this inventory pattern those BLM conducted on lands we administer, for the period 1977-1979 on riparian areas, which included an analysis of habitat condition. We are available to coordinate with your staff on this effort.

III-39-44 (Wildlife). This section states deer herds rely heavily on Inyo N.F. lands for winter range. It should be noted that a portion of the Goodale herd occupies BLM administered lands in a normal winter, while the majority of deer in the Sherwin-Buttermilk and Casa Diablo winter ranges are found on land we administer.

IV-4 (Fish). We suggest wording as follows . . . "ensure that viable populations of native vertebrates and invertebrates are maintained."

IV-24-26 (Minerals). Modify leasable minerals section to clarify the fact that any work must be done in conjunction with BLM.

IV (Management Prescriptions). Management area direction for area 7 is deficient in recognition of geothermal development and subsequent management direction. Additionally, areas 8 and 9 have existing leases and obvious potential. It would follow that these areas should have management area direction specific to geothermal resources. Portions of areas 3, 4, and 5 are also within the KGRA, but don't merit specific area direction regarding future lease actions

In addition to these specific comments, we have numerous concerns regarding wildlife habitat These, however, would be most appropriately discussed at the staff level between our wildlife biologists

Sincerely,

James S Morrison

James S. Morrison
Area Manager

cc: Ed Lynch, BDO

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
CALIFORNIA STATE OFFICE
2800 Cottage Way
Sacramento, California 95825

1795
CA-930 17

MAR 4 1987

CA-7-001555-0

RECEIVED

Zane Smith, Jr
Forest Supervisor
US Forest Service
630 Sansome Street
San Francisco, CA 94111

Dear Mr Smith

We have reviewed the Inyo National Forest Draft EIS and Management Plan. Following are our comments on those documents which have been included in Interior's official response

General Comments

The reports lack a mineral potential map to check with the PRF map showing management prescription (see Attachment 1). This is important because several PRF numbered areas are withdrawn from mineral entry, are proposed to be withdrawn from mineral entry or have limited vehicular access, or no new mineral development (1 to 9, 13 to 17) Numbered areas 9 to 13 have no statement about minerals Only number 18 seems to be really open for mineral development and the mineral potential here is not shown

The document should discuss the relationship between locatable mineral development and surface management decisions Management decisions concerning air quality, visual characteristics, recreation, etc., can significantly impact the ability of a claimant to develop his claim. A discussion should be included as to the types of reports/data (i.e., visual, archeological, endangered species, etc.) which may be required for a certain management area in regard to mineral development. Claimants would then be aware of the Forest Service's surface concerns within that area

Data on page IV-62 (see Attachment 2) are hard to relate in significance to the PRF map and understand if and how mineral development may be impacted.

There are no maps showing mining claims or leases, making it impossible to relate mineral interest to mineral potential to PRF areas (see Attachment 3)

Specific Comments

III-19 2nd paragraph should read - "BLM issues all authorizations for post-lease actions with input and concurrence from the Forest Service." Also, supply and demand paragraph needs updating on resource verification

III-48 - The 3rd paragraph under "Issues, Concerns, and Opportunities" should clarify the fact that it is the BLM which authorizes the development of geothermal resources on National Forest lands through consultation with the Forest Service The Forest Service is not the authorizing agency for geothermal development

Although the document includes a site specific map, Figure III-12, showing the lease areas within the Mono-Long Valley Known Geothermal Resource Area, it would be useful to display the boundaries of the KGRA on a base map to portray the extent of the KGRA The identification of which areas of the KGRA are within the focus of the Forest Plan would be much easier to grasp if the acreage was on a base map. The use of acreage numbers without a map just adds to the complexity of the document package

IV-25, 26 - Modify leasable minerals section to clarify the fact that any work must be done in conjunction with BLM

IV-General - Management area direction for area 7 is deficient in recognition of geothermal development and subsequent management direction. Additionally, areas 8 and 9 have existing leases and obvious potential. It would follow that these areas should have management area direction specific to geothermal resources. Portions of areas 3, 4 and 5 are also within the KGRA, but don't merit specific area direction regarding future lease actions.

We appreciate the opportunity to comment on these documents

Sincerely,

Ed Hastey
State Director

Cedar:
See my attached to original letter

Attachments
As stated

cc:
DM, Bakersfield
WO (760) Room 909 Premier Bldg
USFS (Denny Carlson, Region 5)

FEDERAL AGENCIES

Figure IV-16
Lands Available for Mineral Entry
(M acres)

	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
Lands withdrawn from mineral entry (M acres)						
-Mineral potential high	26.6	26.3	23.5	50.6	10.7	72.3
-Mineral potential medium	34.5	32.4	5.0	78.7	101.6	34.2
-Subtotal	61.1	58.7	28.5	129.3	208.3	106.5
-Mineral potential low	135.0	132.3	55.0	289.1	381.0	194.9
-Subtotal	196.1	191.0	83.4	418.4	589.4	301.3
-Existing wilderness*	565.1	565.1	565.1	565.1	565.1	565.1
-TOTAL	761.2	756.2	648.6	983.5	1154.5	866.5
	- 565.1					
	196.1	61.1/196.1 x100 = 31.2%				
Lands available for mineral entry (M acres)						
-Mineral potential high	108.2	107.5	110.4	84.3	28.1	62.6
-Mineral potential medium	174.5	176.6	204.1	130.3	107.4	174.8
-Subtotal	282.8	284.2	314.4	214.6	135.5	237.4
-Mineral potential low	885.8	888.4	965.8	731.6	639.7	825.9
-TOTAL	1168.5	1172.6	1280.2	946.2	775.3	1063.3
	- 885.8					
	282.7	282.8/1168.5 x100 = 24.2%				

31.2% of total

24.2% of total

*Mineral-potential ratings are not available for existing wilderness.

the percentage of high and medium mineral potential is higher in lands withdrawn from mineral entry than it is from lands available for entry; 31.2% is 24.2%

JR Evans
7-10-87

United States Department of the Interior

OFFICE OF ENVIRONMENTAL PROJECT REVIEW
BOX 36098 450 GOLDEN GATE AVENUE
SAN FRANCISCO CALIFORNIA 94102

March 5, 1987

ER86/1390

Dennis Martin
Forest Supervisor
Inyo National Forest
873 N. Main Street
Bishop, CA 93514

Dear Mr. Martin.

The Department of the Interior has reviewed the Draft Environmental Impact Statement (DEIS) and the Proposed Land and Resource Management Plan (Plan) for the Inyo National Forest, California and has the following comments.

Fish and Wildlife

We find many elements of the overall document favorable and commend the Forest Service for its attention to several important fish and wildlife resource issues. These include continuing the concepts of prescribed burning to manage wildlife habitats and maintaining the health and vigor of brushlands; maintenance of diversity in the forest's ecosystem, including the retention of snags and deadfalls; and the intent to protect riparian systems.

The Plan includes several elements that would contribute to the recovery of threatened and endangered species. The DEIS also addresses "sensitive plant" issues. However, in spite of these strengths, your recommended alternative presents significant problems for candidate and listed threatened and endangered species.

Sensitive plants, in particular, are not given adequate protection in the Plan because population declines of up to 50 percent would be tolerated before corrective measures are implemented. To overcome these and other problems, we recommend that the Forest Service adopt the "Maximize Amenity Values" alternative as described in the DEIS.

The Inyo National Forest has habitat for four listed species and many more candidates for Federal listing. The listed threatened or endangered species include the Paiute cutthroat trout (Salmo clarki seleniris), Lahontan cutthroat trout (Salmo clarki henshawi), American peregrin falcon (Falco peregrinus anatum), and bald eagle (Haliaeetus leucocephalus). The endangered Owens tui chub (Gila bicolor snyderi)

FEDERAL AGENCIES

also occurs within the boundaries of the Inyo National Forest on privately-owned lands. At least 12 candidate plant species occur on the Inyo National Forest along with several candidate vertebrate and invertebrate species

Specific Comments

DEIS S-4 and S-5. The Forest Service's preferred alternative provides for management of fish and wildlife as secondary concerns after demands for recreation, timber harvesting, and grazing needs are met. We are concerned that at best such management would result in decreased public fish and wildlife values over the life of the plan We do not believe that defining the upper limits of production-oriented outputs based on the public's demand provides the safeguards necessary to maintain the forest ecosystem in a viable, functioning form. Because this alternative does not set realistic upper limits on consumptive use of the forest's resources, this may not be the best alternative.

DEIS S-9 and S-10. The DEIS states that "The likelihood of resource damage and reduced recreational quality resulting from increased use would be highest in PRF, RPA, and CEE, this reduction is offset, however, by full development of facilities and standard levels of service." We perceive this statement to mean that lost natural resource values would be mitigated through development of better campsites and roads. We believe that true offsets for losses of resources should include protection, restoration, and enhancement of fish and wildlife habitat. Any proposed off-road vehicle trails should be outlined on maps, with their locations correlated to sensitive biological resources, such as riparian areas and endangered or threatened species habitat

DEIS S-11 and S-12. We support wilderness designation for large tracts of land as an effective means of providing wildlife habitat with relatively low human impacts. The inclusion of particular ecological types and features into these wilderness areas is praiseworthy

DEIS S-14 to S-17. While we realize that it is difficult to put a dollar value on the public's enjoyment of fish and wildlife resources or on the continued existence of a healthy ecosystem (as evidenced by the presence of sensitive animal and plant species) we believe that this section should at least attempt to make the reader aware that these factors do influence the economic health of the forest in many ways.

DEIS II-44. The "Forest-wide Standards and Guidelines" could result in substantial protection for the Inyo National Forest's riparian areas We would be interested in understanding how the Forest Service defines "consistent" resource damage or abuse and "unacceptable" changes in water quality These terms should be specifically defined so that Forest Service employees can objectively determine when criteria are not being met. Also, it is unclear when the location of facilities inside riparian areas would be "absolutely necessary " Finally, we recommend that cattle and sheep grazing be eliminated from all riparian areas. The vegetation

removal and erosion caused by grazing results in serious degradation of streams Fencing and provision of watering areas outside the riparian zone could provide important habitat improvements to the Inyo National Forest's streams. The Forest Service's recognition of the importance of riparian areas is well-stated in the DEIS. We believe that clarification of these issues could lead to even better management practices.

DEIS III-31. Although the Owens tui chub does not currently occur on Forest Service lands, it is possible that some permitted activities on the Inyo National Forest (e.g., geothermal development) may affect the existing populations Also, suitable reintroduction sites may occur on Forest Service lands (e g , Little Hot Creek).

DEIS III-33. The document states that hydroelectric development within the Inyo National Forest is expected to increase with possible significant effects on the fisheries and riparian habitat of the Forest We believe that the Inyo National Forest should consider developing a Forest-wide hydroelectric power management plan that could lead to a better assessment of the cumulative impacts of these projects. Also, coordinated review of individual Federal Energy Regulatory Commission (FERC) applications with Interior could increase opportunities to provide better habitat protection through FERC's processes.

DEIS III-48 AND III-49. Geothermal plants have the potential to produce significant amounts of effluents. Plans should be developed to mitigate the disposal of any brines and cooling tower blowdown generated by such power plants.

DEIS IV-114. Although the DEIS reports that range management affects sensitive plants, this document fails to include "grazing pressure" as an indicator or a consequence of this activity Given that Figure III-21 on page III-86 of the DEIS states that "grazing" was mentioned as a potential conflict for Abronia alpina, Astragalus monoensis, Cryptantha roosiorum, and Trifolium dedeckerae, we believe that grazing pressure should be thoroughly discussed in this chapter and fully addressed in Figure IV-30 on page IV-116.

Plan III-31, paragraph 3. The proposed Plan reports that the Inyo National Forest harbors 18 sensitive plant species, eight of which occur on Forest Service land. Although the Plan and page III-85 of the DEIS note that no federally-listed plants grow on the Inyo National Forest, these documents claim that two plant species were proposed. Based on those plant taxa listed in Figure III-21 on page III-86 of the DEIS, we conclude that 12 Federal candidate plant species (see Federal Register 50 39526-39584, 1985) occur on the Inyo National Forest of which one species (Dedeckera eurekensis) likely will be dropped (moved to category 3C) when the list is revised. More importantly, no proposed plants exist near or within the borders of the Inyo National Forest. Lupinus dedeckerae should be referred to in the FEIS as L. padre-crowleyi.

Plan III-31, paragraph 4 Although not to diminish the work of the California Native Plan Society, we maintain that the primary stimulus behind the Forest Service's protection of the candidate (sensitive) flora is the Endangered Species Act of 1973 As indicated on page IV-33, the objective of the Plan is to prevent these candidate plants from becoming federally-listed species

Plan IV-2, paragraph 11. The proposed guideline for managing habitats of the threatened fish would allow 10 percent of the streambank to be trampled and chiseled by livestock. The existing populations of Paiute cutthroat trout and Lahontan cutthroat trout in the Inyo National Forest are confined to short stream reaches that support small numbers of fish. Gross livestock impacts of the allowed magnitude could further suppress population numbers. The short stream reaches that now support threatened fish species should not be subject to major livestock impacts until population numbers have recovered from their current low levels. When recovery is well underway, potential interactions with livestock should be evaluated on a case-by-case basis through the normal Section 7 consultation process We do not believe that the 10 percent "trampling and chiseling" guideline is consistent with recovery plan objectives for these two threatened trout species and recommend that a much stronger standard be developed

Plan IV-33, paragraph 4. Regarding the four "Forest-wide Standards and Guidelines" for sensitive plants, we offer no objections to #1 and #3. However, #2 implies that it is appropriate for Forest Service activities to eliminate sensitive plants and their habitat as long as these actions to not "cause sensitive plant species to drop below viable levels " Given the absence of data on minimum viable population levels for those plants listed in Figure III-21 of the DEIS, we assert that no adverse effects to sensitive plants should be permitted at this time. Regarding #4 on page IV-33 of the Plan and #5 under wildlife on page II-46 of the DEIS, this standard or guideline should be changed to permit study as long as such activity does not adversely affect the species under investigation Scientific studies should not be restricted to any greater degree than any other activity. Page V-10 of the Plan, notes that "any detectable decline in populations" of threatened, endangered, and sensitive wildlife would require further action Page V-8 of the same table, however, reports that adverse changes up to 50 percent would not effect a similar response for sensitive plants. Aside from implying, absent any supporting data, that sensitive plant populations on the Inyo National Forest are more resilient than their animal counterparts, this standard accords second class protection to candidate plants This standard should be changed to the standard used for wildlife

Plan A-1, paragraph 4 The Fish and Wildlife Service is now developing a draft recovery plan for the Owens tui chub A technical review draft will be released in Fiscal Year 1988

Plan A-2, paragraph 6. We support the call for a resource implementation plan for the Sensitive Plant Program by 1987. Moreover, we agree with page A-4 of the Plan that the sensitive flora should be thoroughly inventoried and permanent monitoring markers established for all sensitive plants

Summary Comments

Generally, we believe that the resolution of issues involving actions that may adversely affect listed species is best achieved through the normal Section 7 consultation process on a project-by-project basis when site specific information is available concerning potential project impacts Therefore, we recommend that the Forest Service initiate formal consultation on those components of the selected alternative that may adversely affect listed species at the time such projects appear on your planning horizon. With respect to recovery actions, we recommend that the Plan be made consistent with the recovery plans that have been developed for the listed species that now occur, or historically occurred, on the Inyo National Forest.

One area of the plan where we anticipate conflicts may develop with respect to threatened and endangered species management concerns the funding allocated for obtaining base line information and monitoring population trends. We believe that the funding allocated in the Plan is grossly inadequate to implement a trend analysis program.

The rarity of most listed or candidate species dictates that extensive and prolonged surveys be undertaken that are by their very nature expensive to carry out Unreliable data are obtained through less intensive studies We strongly advocate that significantly higher levels of funding for monitoring of sensitive plant and wildlife resources be allocated in the final 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.

Before the Forest Service commits itself to a plan that has high potential for seriously altering habitat conditions for several Federal candidate listed, threatened and endangered species, we recommend that a greater commitment 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 demonstrate that listed or candidate species are currently in a declining or depleted status, land uses that would exacerbate the situation should be avoided until recovery is well underway.

National Parks

Yosemite National Park

We question the advisability of any proposed ORV trail through the Inyo National Forest This is based on the potential adverse impacts that

could result from the proposal, especially those affecting Sierra bighorn and mule deer that seasonally inhabit both Park and Forest lands.

In the event of such a trail being constructed, we believe that the continued well-being of various populations of threatened Sierra bighorn would be sufficient justification to design an interruption or break in the trail, or route it east to the vicinity of Highway 395 wherever it would otherwise go near existing or potential bighorn populations This would be especially true for bighorn winter ranges.

We would recommend such an adjustment to protect the Lee Vining-Lundy Canyon and the Wheeler Ridge populations. To the south, to insure the continued well-being of the Mts Baxter, Williamson, and Langley populations, we recommend any such trail be routed east to the vicinity of Highway 395 from Birch Creek south to Carrol Creek

Our interest in these populations is based on the fact that all but the Wheeler Ridge herd summer, in part, within Yosemite or Sequoia and Kings Canyon National Parks and the latter herd also will probably do so when its population increases sufficiently. Further, the only population that produces a surplus for reintroduction purposes is the Mt. Baxter herd.

We are pleased that your Alternative PRF would increase Forest Wilderness by 20 percent and one such increase would be on the east side of Highway 120 from the park-forest boundary at Tioga Pass to near Ellery Lake Further, we endorse your decision to preserve the Hall Natural Area adjacent to Yosemite

Currently and historically, bighorn have shown a strong affinity for the Mt. Warren-Tioga Peak area. To enhance the well-being of the recent bighorn reintroduction, we suggest that you consider recommending that area for Wilderness status as is shown in your alternative AMB.

Your Plan states that implementation of Alternative PRF would result in a two percent decrease in mule deer habitat. Since many of the deer that summer along the Sierra Crest within Yosemite inhabit the Inyo Forest in spring and fall, we urge you to consider maintaining Forest deer habitat at least at current levels adjacent to Yosemite.

We are experiencing ever increasing mountain bike usage on and off park trails and in wilderness, where such use is prohibited. Consequently, if you develop such trails on the Forest, we would like to work with your planning staff to ensure that the resulting trails do not become routes into park wilderness.

Sequoia-Kings Canyon National Parks

The portion of the Inyo National Forest bordering these parks and the Devils Postpile National Monument is almost all wilderness. The wilderness uses on these Forest areas are similar to and generally

compatible with park uses. In any case, there appear to be no uses proposed in the preferred alternative that would have any significant effects on park resources, values or uses. Therefore, our comments will be general and referenced to the Plan.

Inyo National Forest wilderness use guidelines and limitations are, with a few minor exceptions, identical to the parks'. In fact, the Forest, through a cooperative agreement, issues wilderness permits for entry into all of the east side trail heads. We have established an excellent cooperative relationship with the Inyo and other surrounding National Forests on wilderness management matters

The Mt. Baxter herd of Sierra bighorn sheep spends a significant portion of the summer season in Kings Canyon National Park and the primary ewe/lamb range is in the park. This is not noted in either the Plan or the DEIS Further, there is a cooperative agreement between the National Park Service, California Department of Fish and Game, and Inyo National Forest for the management and reintroduction of Sierra bighorn sheep to various locations in the southern Sierra Nevada. Both of these points should be noted in the final document since they have an influence on what the Forest can do regarding management of Sierra bighorn sheep.

We support and would be most willing to cooperate in your management efforts toward enhancement of peregrine falcon, bald eagle and goshawk habitat and numbers.

Because of topography and associated vegetation, there is little potential for fire management activities on the Forest to influence these parks. Therefore, we have no comment on the fire management direction in the Plan relative to Sequoia and Kings Canyon National Parks. However, we note that there is no fire management plan at present for the Reds Meadow area next to the Devils Postpile. We would like to have input to the development of the fire management plan for this area.

We note that the Plan emphasizes the continued reliance on the shuttle bus system for the Reds Meadows/Devils Postpile area. We support the continued operation of this system at its present level to minimize parking congestion and traffic problems on the road.

The concentrated recreation area development at Horseshoe Meadow in management area 19 is likely to increase backcountry use into the southern reaches of the Kern Plateau of Sequoia National Park, especially in the winter. This potential effect is not mentioned in the DEIS.

In addition to the above comments pertaining to Sequoia and Kings Canyon and Yosemite National Parks, you may wish to contact the staffs of both parks regarding air quality monitoring and research. Both have extensive experience and ongoing activity in this field.

Wild and Scenic Rivers

In our responses on the Sierra and Sequoia National Forest Plans, we have expressed support for Wild and Scenic River designations for the South Fork Kern River and the Middle Fork San Joaquin River. The same support applies to those segments on the Inyo National Forest.

The North Fork Kern River was the subject of a separate Congressionally-authorized study during which we supported designation We are concerned that in those segments of the South Fork Kern River within the Inyo National Forest, the DEIS indicate that the maintenance of the current grazing levels could have adverse effects on stream qualities. However, there is no proposal to eliminate this grazing impact if the river is designated. We recommend exploring this alternative. The same would apply to Segment 3 with respect to continued ORV use--particularly stream crossings. Again, the DEIS should discuss possible elimination of this impact.

With respect to the Middle Fork San Joaquin River, the portion of the river that flows through Devils Postpile National Monument should be considered concurrently with the Forest portion for designation. We recommend that the Forest have the lead in any necessary study or draft legislation to effect this designation and the Sequoia and Kings Canyon National Parks staff will be happy to assist at your request. Based on a preliminary review of the river segment contained in the monument, the classification would be as follows

1. North monument boundary to a point about 100 yards below the visitor center - Scenic

2. From 100 yards below the visitor center to the south monument boundary - Wild

Water Quality

The statement and plan demonstrate the need for timely inventory and study of the groundwater resources of the Inyo National Forest--particularly of the areas subject to rapid and extensive development. Knowledge of baseline data on groundwater resources could then be used to develop a strategy to reduce impacts from the increased use of groundwater.

The statement indicates that mining of ground-water is anticipated Knowledge of the recharge and hydraulic characteristics of the aquifer(s) would aid in establishing appropriate levels for groundwater withdrawal and sustained use to aid in the management of the groundwater resources.

The plan and statement should at least consider the feasibility of reconnaissance-scale groundwater studies during the plan period, possibly in conjunction with other Forest management activities.

The statement does not address wastewater, sewage, or solid waste disposal The final environmental impact statement should discuss the types and operational efficiency of wastewater and sewage disposal facilities in the Forest and assess the potential for impacts from such facilities on the human environment, particularly on ground-water and surface-water resources. Solid-waste disposal practices should be discussed and the potential for impacts assessed, including those from any permitted municipal or county sanitary landfills within the National Forest.

Mineral Resources

General Comments

The reports lack a mineral potential map to check with the PRF map showing management prescription This is important because several PFR numbered areas are withdrawn from mineral entry, are proposed to be withdrawn from mineral entry or have limited vehicular access, or no new mineral development (1 to 9, 13 to 17). Numbered areas 9 to 13 have no statement about minerals. Only number 18 seems to be really open for mineral development and the mineral potential there is not shown.

The document should discuss the relationship between locatable mineral development and surface management decisions. Management decisions concerning air quality, visual characteristics, recreation, etc., can significantly impact the ability of a claimant to develop his claim A discussion should be included as to the types of reports/data (i.e., visual, archeological, endangered species, etc.) which may be required for a certain management area. Claimants would then be aware of the Forest Service's surface concerns within that area.

Data on page IV-62 are hard to relate to the PRF map and understand if or how mineral development may be impacted.

There are no maps showing mining claims or leases, making it impossible to relate mineral interest to mineral potential to PRF areas

Specific Comments

III-19. 2nd paragraph should read - "BLM issues all authorizations for post-lease actions with input and concurrence from the Forest Service " Also, supply and demand paragraph needs updating on resource verification

III-48. The 3rd paragraph under "Issues, Concerns, and Opportunities" should clarify the fact that it is the BLM which authorizes the development of geothermal resources on National Forest lands through consultation with the Forest Service. The Forest Service is not the authorizing agency for geothermal development.

Although the document includes a site specific map, Figure III-12, showing the lease areas within the Mono-Long Valley Known Geothermal Resource Area, it would be useful to display the boundaries of the KGRA

on a base map to portray the extent of the KGRA. The identification of which areas of the KGRA are within the focus of the Forest Plan would be much easier to grasp if the acreage were on a base map The use of acreage numbers without a map adds to the complexity of the document package

IV-25, 26 Please modify leasable minerals section to clarify the fact that any work must be done in conjunction with BLM.

IV-General. Management area direction for area 7 is deficient in recognition of geothermal development and subsequent management direction. Additionally, areas 8 and 9 have existing leases and obvious potential It would follow that these areas should have management area direction specific to geothermal resources Portions of areas 3, 4 and 5 are also within the KGRA, but don't merit specific area direction regarding future lease actions

We appreciate the opportunity to comment on these documents

Sincerely,

Patricia Sanderson Port
Regional Environmental Officer

ccs Director, OEPR (w/orig. incoming)
State Dir., BLM
Reg. Hydrologist, GS
Reg. Dir., NPS
Reg Dir., FWS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
215 Fremont Street
San Francisco Ca 94105

21 MAY 1997

Zane G. Smith, Jr.
Regional Forester
Pacific Southwest Region
USDA, Forest Service
630 Sansome Street
San Francisco, CA 94111

Dear Mr. Smith:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) titled INYO NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN, INYO, MONO, TULARE, MADERA AND FRESNO COUNTIES, CALIFORNIA AND MINERAL AND ESMERALDA COUNTIES, NEVADA. 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 projected Forest activities may result in degradation of riparian areas, water quality and beneficial uses. Further discussion is needed on how conflicts between proposed activities and protection of the Forest's resources will be resolved. Additionally, the DEIS fails to adequately address potential air quality impacts and does not identify how air quality objectives will be achieved. A summary of EPA's comments and classification will be published in the Federal Register.

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 David Powers, Federal Activities Branch, at (415) 974-8193 or FTS 454-8193.

Sincerely yours,

Charles W. Murray, Jr.
Assistant Regional Administrator
for Policy and Management

Enclosure (6 pages)

cc: Oliver Sapousek, Inyo National Forest

Water Quality Comments

1. The DEIS and Forest Plan indicate that the Best Management Practices (BMPs) listed in the Forest Service Handbook and Appendix F of the Forest Plan are the means for protecting water quality in the Inyo National Forest. 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 Forest 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. EPA supports the preferred alternative's restoration goal of watershed improvements at an average rate of 350 acres per year (DEIS p. II-61). However, given the existing or threatened erosion damage to wet meadows (23,400 acres) and impacted streams (140 miles) in the Forest, we recommend adoption of the more ambitious watershed restoration goal (470 acres per year) proposed by three of the other alternatives. A watershed improvement needs (WIN) list should be appended to the Forest Plan. The WIN list should identify the size, location and restoration priority of each impacted watershed.

3. The FEIS should address compliance with the California Antidegradation Policy. This policy states 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 uses 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 13(a.2)). The FEIS should describe how Standards and Guidelines, BMPs and other measures will ensure consistency with the Antidegradation Policy for Forest activities (e.g., road and trail construction, grazing, mineral extraction, dam construction/operation).

4. Hydropower projects may result in development of a resource to replace several types of resource losses. Some resource losses may never be fully mitigated. An example is the replacement of cold water fishery habitat with lake fishery habitat. Additionally, reduced flows resulting from hydropower project diversions may have a detrimental effect on water quality for parameters such as temperature and dissolved oxygen. This may constitute changing existing beneficial uses and the possible lowering of standards for turbidity, temperature and dissolved oxygen in otherwise high quality waters. In such cases the Antidegradation Policy applies and requires an antidegradation analysis to support the lowering of standards and the changing of beneficial uses.

5. EPA strongly supports the Forest managers' efforts to reestablish resident trout fisheries through negotiation of increased flows from hydropower projects (Standard and Guideline (S&G) #4 for fish). However, the benefits resulting from this S&G may be offset by S&Gs for energy which encourage development and authorization of new hydropower projects. Although hydropower projects are required by energy S&Gs to be compatible with instream values and water-dependent resources, the DEIS (p. III-83) states that "[e]xisting hydroelectric projects have conflicted with riparian values in the past, and proposed new projects would conflict severely with with such values if fully developed." Given the 33 hydropower applications pending in the Forest, the FEIS should describe in detail the process which will ensure that mitigation provisions proposed by Federal Energy Regulatory Commission (FERC) licenses will adequately maintain riparian habitat and the fisheries it supports.

6. The FEIS should discuss how the cumulative impacts of hydropower development in the Forest will be addressed. Although environmental assessments (EAs) are conducted for individual FERC projects, they may underestimate impacts which do not seem evident on a given stream reach but which are significant when added to the incremental impacts occuring over the entire watershed. EPA strongly recommends that the Forest managers require hydropower EAs to consider the potential impacts both above and below project sites. We believe that the scope of impact assessment in EAs should be watershed or basin-wide.

7. Page II-70 of the DEIS equates leasable minerals with total power plants. The FEIS should explain this. The estimated annual output by decade indicates that the total output of power plants will increase from one during the first decade to six during the fifth decade. Does this mean six power plants for the last ten years or six power plants for the fifty year period?

8. Appendix D of the Forest Plan proposes a good evaluation form for measuring stream channel stability. It is not clear, however, how the evaluation form will be used to achieve streambank and channel protection goals. The FEIS should describe how the form will be used by forest managers in protecting and rehabilitating the Forest's streams.

9. Excellent information and parameters for fisheries management are provided in Appendix E of the Forest Plan. The FEIS should describe how this information will be used in assessing and mitigating the impact of forest management activities (hydroelectric projects, mining, logging, etc.) on fisheries.

10. Page III-47 of the DEIS states that "... more than 3,000 mining, mill site and tunnel site claims are recorded for Forest lands... and approximately 40 new mining claims are filed each year." The FEIS should identify the administrative and enforcement procedures which ensure that the extraction, closure and post-closure phases of mining operations do not have adverse impacts on water quality and beneficial uses.

11. Page II-156 of the DEIS indicates that under the preferred alternative the number of acres allocated to range decreases by 38,000 acres from the current alternative. The number of animal unit months (AUMs), however, increases under the preferred alternative by over 5,000 AUMs from the current alternative during the first decade. The FEIS should explain how this will be accomplished and how water quality and beneficial uses will be maintained given the projected intensified use on a reduced resource base. If the implementation of range management practices (DEIS p. III-58) is needed to accomodate increased grazing outputs, the effect of a reduced budget on grazing levels and/or grazing impacts should be discussed.

12. The FEIS should discuss the monitoring program(s) which will ensure that proposed livestock management requirements (e.g., BMPS, S&Gs, grazing plan conditions) are successful in protecting and improving the condition of the Forest's meadows and riparian areas.

13. The Inyo National Forest predicates its timber yield and yield production costs on the selection of the Preferred Alternative of the 1983 Vegetation Management for Reforestation DEIS (DEIS p. 2-39). The types of herbicides proposed for use in the Inyo National Forest and the number of acres on which those herbicides will be used annually should be discussed in the FEIS. In addition, the FEIS should discuss the process for developing environmental documents such as cumulative impact analyses of herbicide projects and site-specific environmental assessments. This discussion should include the processes for public notification, comment and appeal. Finally, the FEIS needs to discuss S&Gs for the protection of municipal water supply watersheds.

14. EPA commends the reduction in off-road vehicle (ORV) open areas. The FEIS should discuss measures which will be implemented to minimize erosion from ORV use in remaining open areas and on designated roads and trails. Monitoring which will assess water quality impacts from ORV activities should also be discussed.

15. Page III-108 of the DEIS states that "[e]rosion prevention plans for each ski area have been partially implemented, but soils are still eroding, and water quality does not yet meet State of California Water Quality goals in some instances." Water quality may be further impacted if additional ski areas are developed or existing ski areas are expanded in the Forest. EPA recommends that stringent S&Gs be developed for ski area development and operation to help ensure that California's water quality standards are not violated.

<u>Air Quality Comments</u>

1. The DEIS fails to address actual impacts from Forest activities. Although it describes the <u>relative</u> impacts of alternatives, it does not provide information on projected emissions or ambient air pollution concentrations. The FEIS should provide this information, particularly for ski resort development/expansion and related growth and for geothermal and mineral development. Because of the air quality concerns associated with Class I areas in the Forest and the need for analysis of cumulative impacts, it is possible that EISs will be required for future site-specific developments. We would appreciate the opportunity to comment on any future NEPA documentation for projects within the Forest.

2. The air quality S&G on page II-40 of the DEIS is to "Meet or exceed all applicable State and federal regulations". The DEIS and Forest Plan do not, however, identify how this will be achieved. The FEIS should describe how existing and projected air quality impacts will be minimized and/or mitigated and how air quality standards and criteria will be met.

3. The FEIS should discuss how the Forest's 268,430 acres of wilderness will be managed to protect Class I air quality increments and criteria and how visibility in the Forest will be maintained or improved.

FEDERAL AGENCIES

BOARD OF COUNTY COMMISSIONERS
ESMERALDA COUNTY, NEVADA

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STAFF
PATTI J SHEPPEARD
(702) 485-3406

March 3, 1987

Forest Supervisor
Inyo National Forest
873 North Main St
Bishop, CA 93514

Dear Sir

We have recently been apprised of the Proposed Land and Resource Management Plan for the Inyo National Forest which includes nearly 50,000 acres of Esmeralda County land. We are concerned with the direction that this Proposed Management Plan is taking with respect to public access and the multiple use concept as applied in the Inyo National Forest.

The people of Esmeralda County and their duly elected officials, the Esmeralda Board of County Commissioners are on record as being opposed to wilderness designation in the State of Nevada (Resolution Deeming All Areas of Esmeralda County to be Inappropriate and Unsuitable for Wilderness Designation 5/15/84) In the Forest Service's PRF (preferred) Management Plan, 6,200 acres of Nevada land in Esmeralda and Mineral Counties is recommended for wilderness designation (DEIS Appendixes C-75) We would like to reemphasize our opposition to any wilderness designation in Esmeralda County

In addition we feel that the PRF Plan has other implications which will negatively effect the economic well-being of the County's residents and the recreational opportunities which they have enjoyed until this time in the White Mountains We would like to address those individual recommendations, contained in the PRF alternative for the White Mountains on pages Plan IV 121-123, to which we are opposed.

We are opposed to the designation of 237,874 acres of the White Mountains as Limited Access. The residents of Esmeralda County have traditionally used the White Mountains as a recreational area for hunting, fishing, camping and four wheel driving We have witnessed in recent years the elimination of at least two access roads on the east side of the Whites (Furnace Creek and Leidy Creek) which were frequently used by local residents We feel that the Limited Access designation will lead to further road closures and eventually the elimination of any vehicular access to the east side of the Whites Since the Inyo Forest is the only Forest in Esmeralda County, and the White Mountains are the only accessible fishing and camping areas available locally, and the residents of Esmeralda County have traditionally been the most frequent users of this recreational resource, we recommend that the Limited Access designation be changed to an Open Roaded designation at least for the entire east side of the White Mountains

While the expansion of the Paiute Trout recovery program to include all of Cottonwood Basin and Cabin Creek may be desirable from a research or environmental standpoint, we feel that again the PRF plan is providing an unneccessary hardship on Esmeralda County residents who use the Whites as the only accessible trout fishing area available to them Since the expansion of the recovery program would necessitate the closure of those waters to all fishing and eliminate the best two, of a very limited number of native trout fisheries in the Whites, we feel that the recovery program could be better served in other areas of California where the fish is at least a native (it is not in the White Mountains having been originally planted there in 1946 and replanted in 1966) and where there are many more recreational fishing resources than in the Whites

The closure of the McCleod Camp Road would eliminate vehicular access to a primitive campsite and the best fishing in the Whites which has again been frequently used by Esmeralda County residents. No documentation or need for this closure has been provided

The mineral industry provides for close to half of the economic base in Esmeralda County. We feel that the Limited Access and other restrictive designations (Wilderness, Bighorn Sheep, RNA) for nearly 80% of the Whites will inhibit the exploration for and development of mineral resources in the White Mountains which are described by the Forest Service as the most heavily mineralized mountain range in California (Plan IV-120) While their are only two active mines on the east side of the Whites (contrary to the Forest Service's contention that none are currently producing (DEIS Appendixes C-71)), we feel that the elimination of this potential mineral resource from active exploration by the Limited Access and Wilderness designations could ultimately impair

COURTHOUSE P O BOX 536 GOLDFIELD NEVADA 89013

the economic well-being of Fsmeralda County

The cattle ranching industry provides another large portion of the economic base in Fsmeralda County. Again the restrictive designations in most of the Whites will have a deleterious effect upon a significant number of the cattle ranchers who depend upon summer range in the White Mountains as an essential element in their cattle management programs In particular, the exclusion of nearly 20,000 acres of existing cattle allotments for bighorn sheep habitat enhancement, when no studies have been conducted or any documentation provided which would demonstrate a need for this exclusion, would provide a totally unneccessary hardship upon two separate Nevada cattle permittees and could possibly render their cattle operations economically unviable.

The restrictive management policies mandated by the PRF alternative will also have a deleterious effect upon the economic well-being of the only public service facility located in Fish Lake Valley, the local store and service station. The store depends upon increased activity during the summer and fall seasons by hunters, fisherman and sightseers (primarily four wheel drivers) to carry them through the slow winter season The elimination of vehicular access to the east side of the Whites would have a direct negative dollar impact upon this rural store and its surrounding community These restrictive management policies would also impede the growth of this small community which looks to continued expansion of the population through lot sales based upon a healthy agricultural and mineral industry and the easily accessible hunting and fishing in the White Mountains

We would support an Open Roaded designation for all those areas in the Whites which are designated Limited Access in the PRF alternative That area designated as wilderness in the PRF alternative should be the only Limited Access designation in the Whites as it is currently unroaded and could remain so under that designation while still being fully utilized as a grazing and mineral resource Hunting, fishing, camping and sight seeing could continue on in harmony with the mining and cattle industry as they have for the last fifty years. Long time residents of Fish Lake Valley will attest that the White Mountains have changed very little if at all under the past nonrestrictive management policies and they see no reason to change them.

We suggest that the continued implementation of the multiple use concept in the White Mountain District of the Inyo National Forest would be the policy that would be most

readily accepted by the residents of Fsmeralda County and would have the most beneficial effect upon the economic well being of our county In short, we support the RPA Alternative as the Land and Resource Management Plan for the White Mountain District of the Inyo National Forest

Respectfully

BOARD OF COUNTY COMMISSIONERS OF FSMERALDA COUNTY

Leo L. Vaughan II, Chairman

Frank E. Smith, Vice Chairman

Henry B. Dahlstrom, Member

cc File

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Brent Wallace
Clerk of the Board

COUNTY OF INYO
BOARD OF SUPERVISORS
P O DRAWER N
INDEPENDENCE CALIFORNIA 93526

March 4, 1987

Forest Supervisor
Inyo National Forest
873 N. Main Street
Bishop, CA 93514

SUBJECT: INYO NATIONAL FOREST MANAGEMENT PLAN

Dear Sir:

The Inyo County Board of Supervisors has reviewed and discussed the Proposed Land and Resource Management Plan for the Inyo National Forest We consider this Plan to be an extremely important document as it relates to the economic well-being of Inyo County and its citizens. The Forest's attraction to both the summer and winter visitor provides the primary economic base of many of the Owens Valley communities. This, plus the budget/payroll and forest receipts of the Inyo National Forest affords numerous employment opportunities - both directly and indirectly.

The Board supports the Preferred Alternative's emphasis on additional higher quality recreational development while still providing for other compatible uses and environmental protection. While the Board supports this alternative, there are some general and specific comments it wishes to address. These comments are as follows

WILDERNESS Two additional wilderness areas are proposed within Inyo County (Table Mountain and the Inyo Mountains). The Board has no objection to the Table Mountain addition to the John Muir Wilderness area but questions the Inyo Mountains Wilderness proposal at this time. The Inyo Mountains are among the most heavily mineralized mountain ranges in California. A detailed analysis of its mineral potential should be completed prior to any formal recommendation as wilderness.

In addition, the proposed Inyo Mountains wilderness area should be evaluated in conjunction with the BLM's California Desert Plan wilderness study areas (WSAs) and Senator Cranston's wilderness/national park proposals for Inyo County. The overall inter-relationship of these three plans (FS, BLM and Cranston) should be considered prior to any formal recommendation.

Lastly, the area between Badger Flat and Papoose Flat, including the areas around Squaw and Side Hill Springs should definitely be excluded. This area contains numerous roads and is utilized for cattle grazing, hunting and other recreational activities. The road between Badger Flat and Papoose Flat provides a loop road connecting the communities of Big Pine and Independence.

TIMBER: Even though the Preferred Alternative proposes only a slight reduction in present timber harvest from 10.5 to 10.0 MMBF in ten years, the Board strongly encourages the maintenance of existing timber harvesting in the Inyo National Forest (and the Sequoia National Forest). This will help to ensure the continuous operation of the Inyo-Kern sawmill at existing levels in the future.

USE PERMITS: The Preferred Alternative, as well as all the other alternatives, proposes continuation of recreation residence special use permits unless a future use determination identifies a higher public need. This determination will be made after public input. The Board strongly endorses this policy of public input when evaluating residential use permits in Inyo County

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FACILITIES: Under the Preferred Alternative, the Board wishes to suggest that closer coordination and communication be maintained between the Forest Service and the County and the local citizens regarding the operation of forest service facilities. Specifically, the opening and closure dates of local campgrounds and any temporary closures are of local importance and concern

Thank you for your consideration of our comments.

Sincerely,

ROBERT CAMPBELL, Chairman
INYO COUNTY BOARD OF SUPERVISORS

jw

Office of the BOARD OF SUPERVISORS

COUNTY OF MONO

COURTHOUSE BRIDGEPORT CALIFORNIA 93517

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FS		
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March 6, 1987

TO: Dennis Martin, Inyo Forest Supervisor

FROM: Mono County Board of Supervisors

RE: Inyo Forest Plan

Attached is Mono County's response to the Proposed Land and Resource Management Plan for the Inyo National Forest. We greatly appreciate the opportunity to review and comment on the Plan, and we look forward to meeting with you to clarify and resolve some of the issues brought out in our comments. In preparing our comments, we have consulted with Mammoth-June Mountain Ski Area, the California Department of Fish and Game, the Mono Lake Committee, the Town of Mammoth Lakes, certain Special Districts, our Planning Commission, the June Lake Citizens Advisory Committee, Mono LAFCO, and our Resource Policy Committee. As the comments indicate, our primary concern is that the Forest recognize the local planning process in the development and implementation of its own plans, and that together we work to preserve the recreational integrity of the forest and surrounding areas.

We recognize that our comments are made without benefit of the extensive studies reflected in the Forest Plan documents, and that certain issues will have to be discussed and clarified. We consequently request that prior to the final revision of the Plan, the County be included in meetings with other concerned parties to work out areas of conflict. In general, however, we are pleased with your planning efforts and believe that your staff should be commended for preparing such a thorough and comprehensive set of planning documents. We also greatly appreciate your personal interest in the issues and concerns of our County, and we look forward to a continued cooperative effort in the revision and implementation of the Inyo Forest Plan.

Sincerely,

Tim Alpers,
Chairman
Mono County Board of Supervisors

SB/sc

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CHAPTER I INTRODUCTION

B. Relationship with other environmental documents

Page I-1 Some reference should be made to local plans and supporting environmental documents that contain policies regarding community expansion and other Forest Service related issues:

- Mono General Plan
- June Lake Loop General Plan
- Mono Plan (soon to be Mammoth Lakes General Plan)
- Long Valley Area Plan
- Wheeler Crest Area Plan
- Mammoth/June Lake Airport Land Use Plan
- Area Plans for Benton Hammil. and Chalfant Valleys

These plans should serve as guiding documents to the Forest Service when considering local needs and land use issues.

Page I-4 The last paragraph of this section should include language that the joint preparation of CEQA and NEPA documents between the FS and local jurisdictions should be pursued whenever feasible.

Page I-5 D.Amendments, Revisions, and Appeals
Mono County is in the process of updating the June Lake Loop General Plan and portions of the County-wide General Plan. Certain changes in the update could require corresponding changes in the Forest Plan. The second sentence of the third paragraph of this section should be amended to read "revision may also be proposed in the interim if conditions, demands, or local plans have changed enough to affect forest programs set forth in the approved plan".

CHAPTER II

Page II 3 Economic Assessment

An additional indicator should be added: 'Do Forest Service programs have an economic impact on local jurisdictions and service providers". Both the Plan and EIS fail to address forest policy impacts on local service infrastructures the ability of local communities to accommodate increased activity generated from the forest and the availability of a private land base to service visiting forest users.

Page II-7 Social Assessment

- The land ownership pattern of an area can directly affect the development pattern of a community and thereby spatially enhance or detract from the community's social interations and cohesiveness. An additional indicator should be added. How can the forest plan enhance the social integrity of local communities through the land adjustment process.

- Some of the permittees on the forest also function as the primary employers for local communities. The lack of affordable private land near the employment sites, however, has created a jobs/housing imbalance, and resulted in substantial commutes for much of the local work force. Local jurisidictions have also been unable to accommodate the fluctuating housing demand of seasonal employees, and housing overcrowding and overpayment have resulted. The following indicator should consequently be included:

  o How can the forest assist in meeting the local housing demand generated from activities on the forest?

Page II-5 Diversity

Include grazing as a land use that threatens to reduce diversity in the second indicator.

Page II-6 Facilities

The following indicators should be added:

- There is a need to coordinate with local fire districts when planning structural developments on the forest.

- There is a need to work with local communities and agencies when establishing administrative facilities in or near community areas

A survey conducted in 1985 by the June Lake Citizens Advisory Committee indicated that there is a need for public showers hike trail and ice skating facilities in the June Lake Loop. The same survey also supports the indicators that identify a need for more hiking and nordic ski trails.

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Page II-9 Geology

- The first indirator should be revised to read "There is a potential demand for groundwater as a domestic water source for Mammoth Lakes and June Lake".

- The third indicator should be revised to include avalanche events.

Page II-9 Lands

The following should be added:

- What additional demand for private land will result from planned forest recreation activities between June Lake and Mammoth Lakes?

- Should the forest work with local communities to acquire private lands identified as valuable open space areas?

- Should the forest pursue acquisition of lands that are threatened by hazards originating on forest lands?

Page II-11 Protection

The following issue/concern and indicator should be added:

- How should avalanche hazards originating on the forest be mitigated?

- Allow the placement of avalanche retention, diversion and dispersal structures on the forest.

- There is a need to work with Cal Trans and Mono County to develop an avalanche mitigation strategy

- There is a need to expand the backcountry avalanche forecasting system to include threatened community areas.

- There is a need for the forest to acquire private lands threatened by avalanche hazards originating on forest lands.

Page II 12 Recreation

The following indicators should be added:

- Substantial Alpine Ski Area expansion could create a need for the development of a new community between Mammoth Lakes and June Lake.

- Substantial alpine ski area development could create impacts on communities other than June Lake and Mammoth Lakes

- Would the designation of portions of the Inyo Forest as a National Recreation Area enhance recreation opportunities?

Page II-15 Timber

The following indicator should be added:

- Consider the conflict between high level timber management and other values such as scenic corridors and concentrated recreation areas.

Page II-15 Special Interest Areas

The following indicator should be added:

- The forest should evaluate the potential of gaining National Recreation Area status for portions of the forest, and should consider which areas would be appropriate for the designation.

Page II-16 Watershed

The following indicator should be added:

- There is a need for the forest to recognize that the water demands of the local communities that support activities of the forest should have a priority of use over the domestic water demands of communities outside the forest's primary zone of influence.

CHAPTER III

Page III-7 Air Quality Management Emphasis

It should be noted that there is an opportunity to coordinate with local jurisdictions to minimize off-forest air quality impacts such as wood stove smoke and dust from dry lakes and receding shorelines.

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Page III-8 Cultural Resource Management Emphasis

It should be noted that the opportunity exists to coordinate historical and prehistorical preservation efforts with local jurisdictions and historical groups through the preparation of local historic preservation elements.

Page III-9 Energy (Geothermal, Hydroelectric, Wind)

It should be noted that Mono County is in the process of securing a grant to fund the preparation of an Energy Element for the County's General Plan. Policies developed from the study may be appropriate for application to forest as well as private lands.

Page III-11 Facilities

The fourth paragraph of this section is inaccurate. Current management direction for some forest highways is inadequate for the danger of snow slides and appropriate mitigation, including emergency access routes, has yet to be sufficiently addressed.

Page III-15 Geology, Supply and Demand

- A discussion of avalanche hazards on the forest should be included in this section. It should also be noted that Mono County has retained a snow consultant to identify avalanche hazards to private developments in the County. The potential exists for the Forest Service and Cal Trans to contribute to the study and expand its scope to include access routes and development within the forest.

- The discussion of groundwater should mention that the June Lake Community may also have a demand for groundwater, unless additional surface rights can be secured by the Public Utility District from the Forest or the City of Los Angeles.

- Forest Plan Management emphasis should be revised to include the need to inventory avalanche hazards in occupied areas of the forest.

Page III-17 Lands

When establishing priorities for land disposal to private ownership, the forest should give precedence to lands identified in local general plans for community expansion. When establishing priorities for land acquisition, the forest should give precedence to areas identified in local general plans as valuable open space or to areas identified as marginal developable due to natural hazards such as avalanche.

Page III 19 Geothermal

- The last sentence of the first paragraph under supply and demand should be revised to read: "Although shallow surface testing has occurred, no deep exploration wells have yet been drilled so the extent and quality of the resource **as well as the potential groundwater impacts of geothermal development on areas such as Hot Creek,** has yet to be determined.

- The second sentence under "Forest Plan Management Emphasis" should be revised to read: "Additional geothermal proposals will be analyzed on a case-by-case basis, **and will include cumulative impact analysis on such issues as groundwater, deer migration, noise, air quality, recreation and visual impacts.**

III-22 Protection (Fire Management)

Under Forest Plan Management emphasis please add: The Forest Service fire mission is wildland fire protection". The Forest however, also contains structures that require structural fire protection. Although local fire districts will respond to structural fires on the forest through mutual aid or interagency agreements, most fire districts have little input in the development review process of new structural developments on federal lands. Certain developments on the forest - such as geothermal - have significant fire protection considerations that should be reviewed by the local structural fire protection agency prior to construction. The forest should consequently formally include the local fire districts in the review of all structural development proposed for the forest to ensure adequate design and mitigation for fire protection impacts.

III-23 Forest Plan Management Emphasis

Please add: Specific guidelines will also be developed to ensure adequate structural fire protection on the forest.

III-24 Range

Mono County's economic livelihood relies on local recreation and the natural amenities that attract visitation. Although the County receives economic benefits from range activities through receipts act payments from the forest, it is doubtful that these range benefits adequately compensate the local economy for adverse impacts to riparian and wildlife areas and their

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recreational value. It is consequently suggested that the forth and fifth sentences of the second paragraph under "Forest Plan Management Emphasis" read: Range Management practices that prevent cattle from affecting specific fawning areas will be instituted. Grazing in riparian areas will be changed or eliminated to prevent or repair damage to riparian resources.

III 26 Recreation-Alpine Skiing

The reference to a county preference for Sherwin Bowl in this section should be deleted. Although the County is generally supportive of additional ski area development, neither the Plan nor EIR provide adequate information or analysis to support the Plan's proposed sequence of ski area development. The County is not opposed to development at Sherwin, it is, however, opposed to having Sherwin's development preclude the orderly expansion of June Mountain and adjacent areas. A thorough analysis should be conducted of each potential ski area's recreational value, their economic benefits and imparts to local jurisdictions, their potential impact on local service capabilities and community character their environmental impact, the availability of water and a private land base to accommodate increased domestic demands from each area, and each areas potential to be integrated into a regional recreational scheme that offers both winter and summer recreational opportunities. Also, as stated in a previous resolution from the County Planning Commission, a cummulative impact assessment of potential future ski area development should be performed. Until such an analysis and assessments are completed, it may be prudent for the forest to utilize the General Plans of June Lake and Mammoth Lakes to identify areas of priority for ski area expansion evaluation. Both plans are in the process of being updated and will contain policies regarding ski area expansion.

III-27

The county concurs with the dispersed recreation management emphasis, but would discourage the expansion of day use amenities at the expense of permittee housing near community areas.

III-28

Need legend for chart

III-33 Timber

Please add to end of third paragraph: There is also a need to consider setting aside portions of the red fir and jeffrey forests between Mammoth and June Lake as a special interest area or for passive recreational and interpretive purposes under the auspices of a National Recreation Area designation

The County concurs that certain land with existing grazing use, high recreational value, wildlife habitat value, and scenic value may not be appropriate for full-scale timber management, and that there are no local sawmills or communities that rely on forest timber outputs for economic stability in Mono County. In general the County would discourage high level timber management that conflicts or compromises the integrity of recreational, wildlife habitat, or scenic values. The County also discourages timber harvesting in all areas where it is not cost effective.

III-35 Visual Resources

The Forest Plan Management emphasis should note that there is an opportunity to coordinate with local planning efforts to maintain and enhance the visual quality of the area.

III-37 Supply and Demand

The last paragraph in this section should point out that the demand for water in June Lake will also likely grow quickly as additional ski area development occurs, and that it may be necessary for the forest to transfer certain water rights to local communities to provide for the local growth generated from forest activities such as ski area expansion.

III-37 Forest Plan Management Emphasis

This section should identify preferential consideration for the municipal water needs of local communities over those needs of communities outside of the forest's primary zone of influence. The management emphasis should also identify the forest's willingness to assist local communities such as June Lake and Mammoth Lakes in securing adequate water resources for domestic water demands at buildout.

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CHAPTER IV

IV-4

o *Economic/Social*
Mono County strongly supports this goal

o *Air Quality*

Please Revise: National Forest system lands and adjacent areas are managed in a coordinated manner with BLM, local jurisidictions, and the City of Los Angeles, to maintain air quality that complies with all applicable regulations:

o Cultural Resources

Please Revise: Identification, evaluation, protection, and interpretation are conducted continuously and in cooperation with local historical groups and policies to serve as an integral part of forest management.

o Facilities

Please Revise: An efficient forest transportation system integrated with local systems, administrative sites, and other facilities are in place and maintained at least to minimum standards appropriate for planned uses, safety of users and protection of resources, and with due consideration of local community needs.

IV-5

o Geology

Please Add "Avalanches" to the geologic processes listed.
Also Add: "An avalanche mitigation strategy is implemented with the cooperation of Cal Trans and Mono County."

o Lands

Please revise second sentence to read: Specific activities to accomplish this goal are: Special uses, administration, electronic site management, utility corridor management, rights-of-way management, withdrawals and landownership adjustments conducted in accordance with local plans, and property boundary resurvey and monumentation.

Protection

Please Revise: A cost-effective fire management program is provided in cooperation with BLM, the State of California, and local fire protection districts that minimizes resource and structral losses and serious or long-lasting adverse effects of wildlife.

Range

Please Revise: A sustained yield of forage is provided, range condition is improved to a satisfactory condition or better, and.....

Recreation

Please Add: .... is provided in accordance with local plans and in a manner that minimizes adverse impacts on local communities.

IV-6

Visual Resources

Please Add: .... are maintained or enhanced in cooperation with local jurisdictions.

Watershed

Please Add: .... And non-consumptive users of water, as well as to ensure that local communities that support forest activities have sufficient water supply to meet their reasonable needs at buildout.

Forest Objectives IV-8 thru IV-16

In general, this section could benefit from a discussion of the significance of the RPA goals and how they relate to the proposed Forest Plan objectives. Also, a glossary or additional footnotes are needed to clarify forest terminology and thereby enhance the tables readability for the general public.

Forest-Wide Standards and Guidelines

IV-18

Cultural Resources - Overview

Please Add: 4. Work with local jurisdictions and historical groups to develop integrated historical preservation policies.

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IV-20

Energy

Please Add: 5. Investigate the potential for new energy developments to provide affordable power to forest facilities and local communities.

Facilities

1. Please Insert: .... consistent with forest goals and objectives and local plans for the lands served....

5. Please Revise: .... coordinate forest highway projects with affected agencies, including safety improvements such as emergency access routes and avalanche sheds.

7.e. Please Revise: ...provide new facilities where need can be justified and/or where promoted by local plans.

IV-21

9. Please Add: or when promoted in local plans.

10. Please Insert: ... level of development, local plans, and the forest goals.....

14. Please Insert: ... whenever possible without endangering the safety of users, before developing.....

Fish - threatened and endangered

4. Mono county strongly supports guideline #4 as well as the Mono Lake Committee's effort to prohibit any flow depletions during severe winter conditions, and to restore a minimum flow that is at least the mean historical monthly flow for the protection of fisheries and riparian resources. It should also be noted that a recent survey of the June Lake community indicates an extremely high support for retaining minimum flows in Rush Creek.

IV-23

Geology

Please Add: 4. Conduct avalanche hazard mapping in conjunction with Cal Trans and Mono County, and assess mitigation feasibility for endangered roads and built areas.

Lands

Landowner Adjustments
1. Highest Priority

C. Please Add:... and lands threatened by avalanche hazards

Also, Please Add: e. lands identified in local plans as valuable open space and appropriate for exchange.

IV-24

Disposal of Lands

- o Please delete "provided that suitable private land is not available" from priority #1.
- o Please Add: 4. Lands needed for the orderly expansion of local communities, as reflected in local general plans.
- o Please Add: 5. Lands needed to serve additional forest recreational uses, such as alpine skiing.

Rights-of Way Grants

2. Please Add: Give priority to those lands adjacent to community areas.

IV-25

Special Uses

1. Please Insert.....with established forest and community goals...

2. c. Please Revise: Private uses that will meet community needs identified in local plans.

- o Please Add: d. private (exclusive) uses

Leaseable Minerals - Oil, Gas, and Geothermal

2. Please Add: Include cumulative impact analysis on such issues as groundwater, deer migration, noise, air quality, and recreational and visual impacts where the potential for multiple energy developments exists.

IV-27

Please Add: 5. Coordinate with local fire protection agencies in fire suppression planning. Include local fire districts in the development design and review of new structures on the forest.

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Require intensive developments on the forest such as geothermal to mitigate fire protection impacts.

Please Add: 6. In cooperation with Mono County and Cal Trans implement an avalanche mitigation program consisting of: 1) structural mitigation in starting and runout zones, 2) avalanche monitoring for appropriate developed areas. 3) land acquisitions of hazardous areas.

Range

6. Please Add" If incompatibilities between livestock and known ley mule deer fawning areas cannot be resolved, discontinue livestock use.

IV-28

Recreation Residences

1. Please add after the first sentence: In community areas such as June Lake, utilize the local general plan to determine future use.

Developed Recreation - Private

2. Please Add: Coordinate Master Plan review with local jurisidictions to ensure 1) adequate provisions for employee housing 2) that adequate community infrastructure and resources are available to accommodate related impacts, 3) that the plan coincides with local general plan direction. 4) that the opportunity is presented to integrate proposed improvements with local community needs and projects.

IV-29

Developed Recreation - Public

Please Add: 8. Reference local plans when identifying priorities for public recreation facilities. Consult with local agencies prior to developing facilities near community areas.

Interpretive Services

4. Please Add "Coordinate with local jurisdictions in the development of interpretive plans for areas adjacent to communities."

IV-34 Timber

There is a general concern that certain timber harvest areas may conflict with recreation, wildlife, and visual values. The County consequently favors DFG's suggestion that timber harvesting within 100 feet of a watercourse be deferred. The County also supports the Mammoth Lakes Planning Commission position that before entry into the red fir areas east of the San Joaquin Ridge is considered, the Forest Service should do more research to assure that adequate restocking within five years is possible. Also, the cost effective requirements for high level timber management should also apply to moderate or modified timber management. (See also, II-61 of EIS)

IV-36 Visual Resource

4. Please Add the following to highways affected by A and B:

- State Highway 120 (west and east of U.S. 395 to Tioga Pass and to the Nevada border).
- S. 203 (Fish Slough Road)
- S. 204 (Chidago Canyon)
- S. 303 (Benton Crossing)
- S. 410 (Lundy Lake)
- R092 (White Mountains, Bristlecones)

IV-37 Water

1. Please Insert: ... and coordinate with state, local, and federal agencies.....

3. Please Revise: Strive to convert all National Forest system water uses into the name of the Forest Service or into the name of local community water service agencies within the forest's primary zone of influence.

Please Add: 21. Cooperate with local agencies in evaluating local groundwater characteristics and potential for domestic use.

IV-53 Proposed Wilderness

Mono County supports the direction of the Forest Plan that designates six of the eight "further planning areas" for non wilderness uses. The County also supports the small portion of proposed wilderness at Tioga Lake. The modified boundary of the proposed wilderness in the White Mountains that excludes most of the areas possessing mineral and other development potential

COUNTY ELECTED OFFICIALS

is also supported by Mono County. This support, however, is conditioned on the availability of additional information that clearly documents the area's wilderness value and varifies the lacl of mineral potential for the area.

IV-61 Mono Basin Scenic Area

Please note that due to the interrelationship between the scenic area and surrounding forest lands, a re-evaluation of certain forest policies for adjacent areas may be necessary following completion of the scenic area management plan.

IV-73 Concentrated Recreation Area

Under "Recreation" please add: Develop environmental threshold carrying capacities to define the capability of an area to accommodate additional development.

Also, please add the following to the forth recreation directive: Include nordic, bike, and mountain bike trail systems where feasible.

Under "Protection" please add: Mitigate avalanche hazards for occupied areas.

IV-75 Existing Alpine Ski Area

Please Add under "Recreation": Coordinate the expansion and improvement of ski areas with the development policies of local communities. Encourage improved parking and base lodge facilities to enhance the quality of the alpine ski experience.

Please Add under "Protection": Mitigate avalanche hazards that threaten access routes to ski areas.

IV-76 Potential Alpine Ski Area

Any reference to a sequence of evaluating potential ski areas should be included in this prescription. As stated previously, the County believes that further study is necessary before a particular order of development can be advocated. Until such a study and cummulative assessment is conducted, the forest should utilize local general plan policy to determine which potential ski areas should be evaluated first.

Please add the following "Developed Recreation" directive: Allow for snowplay activities and facilities.

Facilities - Please Revise: Locate roads so as to access the area for potential ski area development, with due consideration of avalanche hazards and emergency access.

Also, Please Add: Work with local jurisidictions to ensure adequate housing for employees: require employee housing as part of future ski developments.

Lands - Please Add: Determine the private land needs associated with the development of a potential alpine ski area. Coordinate with local jurisidictions in planning base facilities and related development.

IV-77

Please revise the first "Wildlife" directive to read: Locate base facilities and other development outside of main deer mitigation corridors.

Please add the following under "Timber": Allow timber production only where it has been documented to be cost effective.

IV-80 Nordic Ski Area

Please add the following under "Timber": Allow timber production only where it has been documented to be cost effective.

Please add to third "Recreation" directive: ....other management activities, such as snowplay facilities in the area...

Please add to the sixth "Recreation" directive: Allow ORV and mountain biking.....

Please add the following recreation directives: Encourage the development of a hut system between June Lake and Mammoth Lakes. Encourage the conjunctive use of base facilities for nordic and alpine purposes.

IV-82 Limited Access

Please Add to "Protection": Mitigate avalanche hazards to adjacent concentrated recreation areas.

IV-87 Mono Basin

An overview of Mono Lake's recent history, and a brief discussion of water diversions and their current and potential impacts to the area's scenic, wildlife, recreational and air quality values should be included. Mono County supports the Mono Lake Committee's position that the Forest Service must acknowledge that the future of Mono Lake has and will have direct,

unavoidable impacts on the management of the forest and that the Forest Service should exert its pre-existing littoral and riparian rights to achieve approximate natural flow conditions in Mono Basin streams that will ensure a lake level that can support a healthy ecosystem.

IV-90 Lee Vining

Please add the following "Protection" management policies:

- o Cooperate with Cal Trans and Mono County to delineate avalanche hazards that endanger existing or potential developed sites and access on Highways 120 and 395 and S. 410 in Lundy Canyon. Develop an appropriate avalanche mitigation strategy.

- o Consult with the Lee Vining or Mono City Fire Protection Districts in the design and review of proposed structural development on the forest.

Please add the following "Recreation" policies:

- o Coordinate the recreational development of the Lee Vining and Lundy Canyons with the development of the existing Lee Vining/Mono City community.

- o Consider the increased recreational and service demands that may result from increased visitation to the adjacent Scenic Area and nearby June Mountain Ski Area when programming recreational improvements.

Please add the following to the first policy under Visual Resources: Develop a similar viewshed analysis for U.S. 395 within this management area.

IV-91

It should be noted that Mono County strongly supports the second policy under "watershed".

IV-92 Waller Parker

Please add DFG's statement "Portions of this management area are important as summer range to the Casa Diablo deer herd" to the "Description" section.

Please consider extending the concentrated recreation area designations along Waller, Parker, and Rush Creeks to the scenic area in order to increase recreational use of these areas, and to help recover degraded riparian and wildlife habitat.

Mono County supports the viewshed analysis proposed for this area

as well as the watershed direction of returning water to portions of the Rush Waller, and Parker Creeks.

IV-94 June Lake Loop

The "Description" section should include an expanded discussion of the potential for ski area growth and its impacts on the June Lake community. The avalanche hazards to winter recreationalists should also be discussed. The June Lake Citizens Advisory Committee (CAC) concurs with the Mammoth-June Ski Area's position that "while it is possible to expand June to 7,000 skiers at one time (SAOT) in its present boundaries, it would not be the most desirable experience for the skier with all parking and lift access required to be at the current location". The CAC also believes that such concentrated ski area development would also not be the most desirable experience for the community, for the town's circulation system is inadequate for such a high level of use. The CAC supports dispersing the additional skiers to Hartley Springs, and Yost Creek, thereby providing additional access points that are not subject to avalanche closures. The June Lake CAC also supports the position of the Town of Mammoth Lakes that the Forest Plan's 39,000 SAOT should be considered as a projection rather than a limit on ski area development. The forest should reference the policies of the June Lake and Mammoth Lakes General Plans in determining a priority for potential ski area evaluation studies.

IV-95 Recreation - June Lake Loop

Please delete the first management direction and insert: Allow for the dispersement of June Mountain skiers to the Hartley Springs and Yost Creek areas if ski area expansion studies conclude that it is environmentally acceptable. Both Yost Creek and Hartley Springs should be designated as an existing alpine ski area.

Begin the second directive with the wording: In conjunction with local community planning efforts, prepare.....

Please add an additional directive: Interface ski lift facilities and transportation systems with the community. Encourage innovative transportation systems, such as people movers, that minimize impacts to air quality and the local circulation system.

Please add to the third directive: Interface trail systems with community development: include opportunities for mountain bike and nordic trails.

Please delete "and #17" from the first sentence of the forth directive. Also replace "RX #17" with "the Yost Lake area" in

COUNTY ELECTED OFFICIALS

the second sentence.

Please add "Promote the use of a portion of the bike trail as a winter emergency access route" to the fifth directive.

Please add a "protection" directive that reads* Cooperate in the development of a snow shed along 158 to improve winter recreation access. Also cooperate in the development of an emergency access route and an avalanche mitigation and monitoring program for the Loop.

Please add to the first directive under "Visual Resources": Coordinate viewshed policies with those of the June Lake General Plan.

Please insert...scenic resource and design element guidelines....in the forth visual resource directive.

Please add a "Lands" directive: Cooperate with the June Lake community in the exchange of land in the Oh' Ridge/Pinecliff area for community uses such as community recreational facilities, school facilities, and light industrial space. Also add a directive that states: Proposed land exchanges to private ownership within the Loop will require local approval of a "specific plan," as defined in the California Government Code, prior to exchange.

Also add a directive: Cooperate with the local community to ensure adequate housing for added ski area employees resulting from ski area expansion. Consider requiring employee housing as a condition for ski area expansion.*

Also add a directive: In order to assist in meeting local housing needs, renew all recreational residence permits that are not threatened by natural hazards. Allow year-round use of permittee housing where safe.

In order to reduce the impacts of timber management on the recreational, visual, and wildlife values of the Loop, please change the "High Level Timber Management" designation near Reversed Peak to "Modified Timber Management".

The June Lake CAC strongly supports the third and forth watershed directives.

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* Note: June Lake is ill equipped to meet state requirements for affordable housing. June Lake has the highest average housing sales price in the unincorporated portion of the County, yet also has the lowest median income of all communities in the County. The community will require assistance from the Forest Service to ensure adequate housing for new residents resulting from ski area expansion.

Page IV-97 Glass Mountain

Please add proposed Department of Fish and Game wording to the "Description": "an important migration corridor exists along the southern slope of the Glass Mountains. Various locations within this area provide summer range for deer".

Consider designating a ski area base facility location as a concentrated recreation area.

Page IV-98 Recreation

Please replace the High Level Timber Management (HLTM) designation west of 395 with an Existing Alpine Ski Area designation as illustrated in the Mammoth-June Ski Area comments. Also designate the remainder of the HLTM area south of Hartley for a Nordic Ski Area. Develop a recreation composite plan to inventory, coordinate, and program the full summer and winter recreation potential for this area. Also, in order to avoid recreational and visual impacts along 395, Mono County supports the Town of Mammoth Lakes position that the remainder of the area designated for High Level Timber Management in this management area that is situated south of Indiana Summit be redesignated for Modified Timber Management.

Please add to the second directive: Re-evaluate the use of and consider the need to upgrade the campground if ski area expansion in this area is approved.

Please add: Consider the potential for utilizing the numerous logging roads east of 395 for specific recreational uses such as mountain biking, equestrian, and snowmobiling. All unneeded roads should be obliterated and rehabilitated. Travel should only be allowed on designated roads. Road use and camping restrictions should be strongly enforced.

Please add the following directive under "Wildlife": Maintain value to deer of existing winter range, summer range, and migration corridors.

IV-103 Upper Owens River

Please change the High Level Timber Management designation on both sides of 395 to Modified Timber Management designation. Also change the High Level Timber Management designation near the White Wing Work Center to a Nordic Ski Area designation.

Please change the "Nordic Ski Area" designation to "Potential Alpine Ski Area" as illustrated on the attached map.

Please add the following directives under "Wildlife": Maintain value to deer of existing winter range, summer range and migration corridors.

COUNTY ELECTED OFFICIALS

IV-112 Mammoth

Please revise the "Range" designation on Doe Ridge in the far eastern portion of the management area to reflect the direction of the Mono County General Plan and the Mammoth/June Lake Airport Land Use Plan. Also, please add the following "Protection" directive: Consult with the Long Valley and Mammoth Lakes Fire Districts in the design and review of proposed structural development such as geothermal, on the forest. Require appropriate fire protection mitigation.

Please add to "Geology": Encourage nonwater-consumptive geothermal development over water consumptive geothermal development. Ensure that such development does not adversely impact the Hot Creek Fish Hatchery or the Hot Creek Gorge, and adequately mitigate the cumulative impacts of geothermal on recreation, wildlife, noise, air quality, and visual resources. Require adequate screening of pipelines, such as berming. Any geothermal development should comply with the policies of the County Energy Element.

Please add to the first "Visual Resources" directive: Work with local jurisdictions to develop design standards for development at or adjacent to the airport.

IV-117 Convict McGee

Please add the following "Protection" directive: Cooperate with Cal Trans and Mono County to delineate avalanche hazards that endanger existing or potential developed sites and access on Highway 395. Develop an appropriate avalanche mitigation strategy that includes the expansion of the back country forecast system to cover developed areas.

Please add the following "Recreation" directive: Coordinate major recreational expansions or improvements with the Long Valley community.

Please add the following "Wildlife" directive: Allow no new roads, road improvements, or other habitat alterations that would adversely impact deer holding areas or migration routes.

Please add the following "Lands" policy: Pursue land exchanges into private ownership if identified for exchange in the Long Valley General Plan.

Please change the designation at Tobacco Flat from "Range Emphasis" to "Mule Deer Habitat Emphasis".

IV-119 Benton-Casa Diablo

Mono County strongly supports the watershed directive to return

water to the Owens River Gorge.

IV-125 Rock Creek-Pine Creek

Please add the following "Lands" directive: seek acquistion of private lands within identified avalanche hazard areas.

Please add the following "Protection" directive: Cooperate with Mono County to identify avalanche hazards that endanger existing or potential developed sites and access along Lower Rock Creek Road. Expand the Forest's avalanche monitoring program to include the Wheeler Crest/Lower Rock Creek Road area.

Appendix A: Needed Resources Implementation Plans and Inventories.

A-1 Please add Avalanche Management Plan under "Protection".

A-2 Please add under "Recreation":

- Potential Ski Area Assessment Plan
- Coordinate with local jurisdictions and general plans in the preparation of recreation residence future-use determination plan.

A-3 Please revise second geology inventory to include avalanches

Appendix B

The County strongly supports the identification of long-term effects on groundwater resources in the Long Valley Caldera.

As a general comment regarding implementation plans, inventories, and research and technical data needs, the listing of future research should be prioritized and presented with set time frames.

Also, as a general comment regarding the Appendix, it is suggested that the glossary of terms in the EIS Appendices also be included in the Plan's Appendix for easy reference.

As a general comment regarding the Plan and EIS, all policy language contained in the EIS should be incorporated into the Plan. The present format is difficult to use and can result in the reader gaining only a partial understanding of the Forest Plan's intent.

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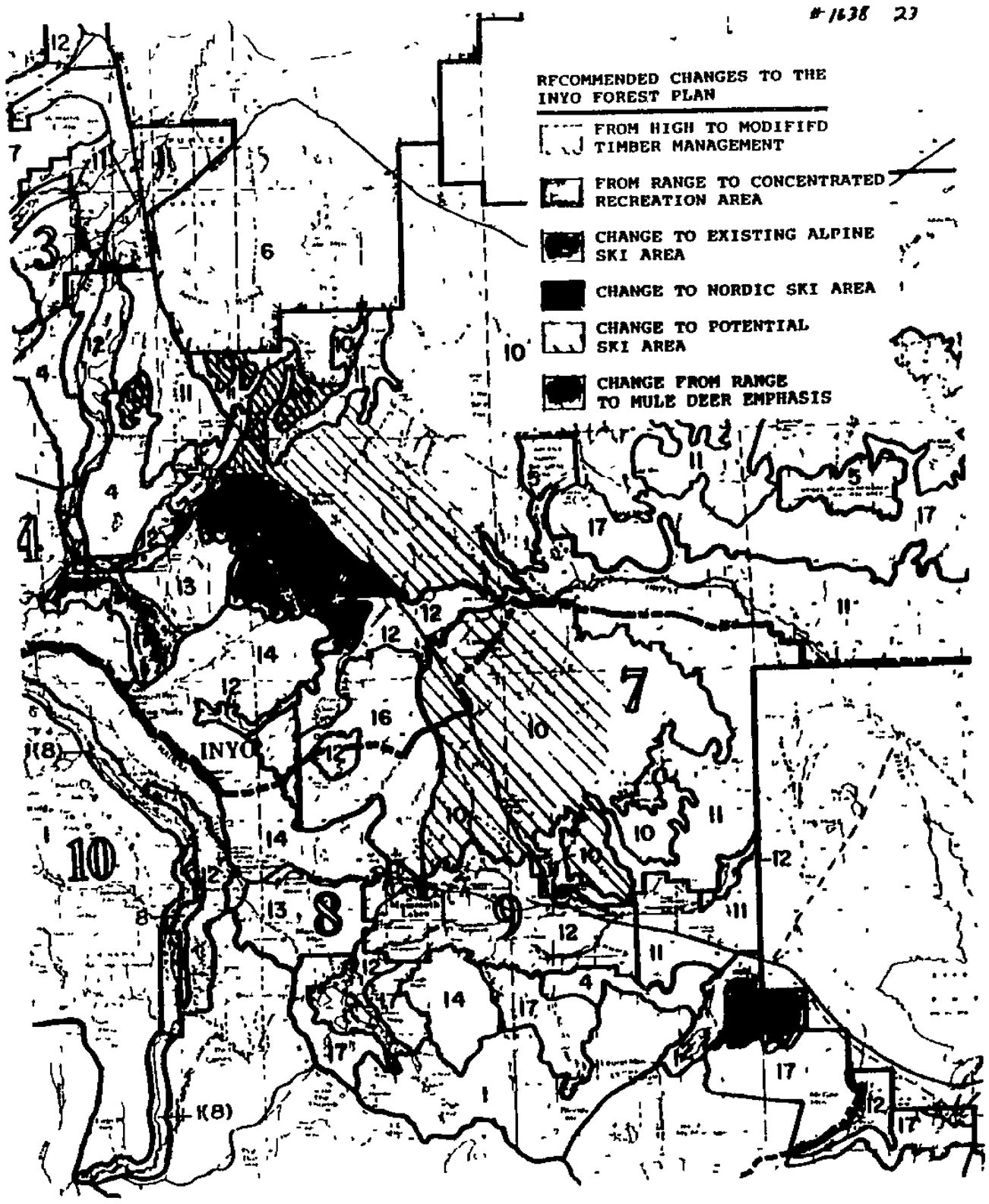
#1638 23
RECOMMENDED CHANGES TO THE INYO FOREST PLAN
FROM HIGH TO MODIFIED TIMBER MANAGEMENT
FROM RANGE TO CONCENTRATED RECREATION AREA
CHANGE TO EXISTING ALPINE SKI AREA
CHANGE TO NORDIC SKI AREA
CHANGE TO POTENTIAL SKI AREA
CHANGE FROM RANGE TO MULE DEER EMPHASIS
INYO

SIERRA COUNTY

BOARD OF SUPERVISORS
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Downieville, California 95936
916/289-3295

THB JM jc 3/50
cc Members, Board of Supervisors
Inyo County Board of Supervisors
Mono County Board of Supervisors
Red Emmerson, Sierra Pacific Industries
Gordon Van Vleck, Secretary for Resources
Western Timber Association
CSAC
The Mountain Messenger
Sierra Booster

March 31, 1987

United States Department of
Agriculture - Forest Service
Inyo National Forest
Forest Supervisor
873 North Muir Street
Bishop, CA 93514

File Inyo Plan
Correspondence

Attn Mr Dennis Martin
Forest Supervisor

Dear Mr. Martin

Thank you for the opportunity to provide comments on the Inyo National Forest Plan.

We understand that the Inyo National Forest Plan presents six (6) alternatives and you have received extensive comment on the preferred alternative

The purpose for this Board offering comment on the proposed plan is due to the existence of the Sierra Pacific Industries mill located adjacent the City of Loyalton, Sierra County. This mill is the primary employer within Sierra County and depends on timber from Inyo National Forest as an important part of its total timber supply.

The Board of Supervisors therefore supports the position statement developed by the Alliance for Environment and Resources (attached) as it would assure a continued supply of timber from the Inyo Forest This would better serve this County's primary industry and employer which in turn serves the people of Sierra County.

Thank you for the opportunity to comment.

Sincerely,

SIERRA COUNTY
BOARD OF SUPERVISORS

Jerry McCaffrey
Chairman

✓=Info X=Action
FB
SECRETARY
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AO
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POSITION STATEMENT

INYO NATIONAL FOREST PROPOSED LAND AND RESOURCE MANAGEMENT PLAN
INYO NATIONAL FOREST INDUSTRIAL PLANNING COMMITTEE

The Inyo National Forest Industry Planning Committee, the local representatives of NER, has examined the Inyo National Forest Proposed Land and Resource Management Plan, and has developed the following position relative to the Proposed Plan

This position supports sound forest management, multiple use, economic stability, voices concerns on certain aspects of the Inyo Land and Resource Management Plan, and expresses support for the efficient, economic, and environmentally sound use of our natural resources

This position supports the RPA alternative, incorporating the following modifications:

1) Range management land allocations and management prescriptions from the Preferred alternative;

2) Watershed Improvement land allocations and management prescriptions from the Preferred alternative.

3) Potential alpine ski area land allocations and management prescriptions from the Preferred alternative;

4) Manage the San Joaquin (5047) and Glass Mountain (5054) "non-wilderness" (release) areas as in the Preferred alternative;

5) No special designation for the South Fork of the Kern River and San Joaquin River

Timber

The Inyo National Forest has a capable, available, and suitable timberland base of 110,701 acres, capable of supporting an allowable sale quantity of 16 9 MMBF in the first decade (increasing to 19 8 MMBF by the 5th decade), and a long-term sustained yield capacity of 29 9 MMBF Presently, the forest manages this timberland base at an allowable sale quantity of 11 4 MMBF. Actual timber volume sold in recent years has averaged 10 5 MMBF per year, (DEIS III-96).

The Inyo National Forest has proposed to limit timber management to 69,200 acres (4% of total Inyo National Forest acres) and decrease allowable sale quantity to 9 75 MMBF, which is less than current allowable sale quantity and actual timber volume sold This is despite a very high demand for Inyo National Forest timber All timber offered for sale in the last decade has sold, no sales have been turned back, and there is relatively little timber under contract (DEIS III-97) Current evidence indicates that the demand for sawlogs will increase in the foreseeable future. We feel there is no justification for any reduction in the level of timber production. In fact, increases seem to be warranted.

We support intensive timber management on the largest available timber base (110,701 acres), attaining RPA outputs through sound silvicultural practices applied on a site-specific basis.

Among our concerns with the factors that reduce the timberland base and allowable sale quantity are:

a) All timberlands with slopes greater than 30% (21,000 acres) were removed from timber harvest because of potential erosion and high logging costs A forest service econometric model showed that all timber on slopes over 30% would be logged at a loss. We feel the range of all slopes over 30% is too broad a category to analyze logging costs. It is likely that some lands in the lower range of this slope category could be logged economically, efficiently, and in an environmentally sound manner with current ground based logging systems On the steeper slopes, and other areas where ground based systems may not work, a variety of aerial systems may be available. Current and future economics will determine if these areas can be harvested. Past economic conditions should not be the factor that drives these acres out of the timberland base.

COUNTY ELECTED OFFICIALS

b) 4,500 acres of timberlands in the Monachi Meadows areas were withdrawn because it was felt increased access would be detrimental to other resources We believe this area should be kept in the timberland base and brought into a more productive and manageable condition through timber management Potential problems could be mitigated by selected road closures Limited access will keep human disturbance of key deer habitat to a minimum Mule deer would benefit through increased habitat capability indirectly from the management of timber Improved access during timber sale activities could help accomplish watershed improvement projects needed in the area to improve conditions in wet meadows, which are currently eroding, creating sediment problems.

c) Restrictions on, and withdrawals of, developed recreation areas and potential ski areas also decrease the timberland base and forest management intensities The most severe restriction is the proposal in the Preferred Alternative to manage eight thousand acres of timberland for nordic skiing. Timber management under the nordic skiing management prescription will be limited to the point of exclusion, due to the strict VQO of retention as related to marked ski trails and timber harvest activities Nordic skiing and timber management can be compatable when proper attention is given to silvicultural prescriptions and logging methods. Dual use offers an excellent opportunity for public education and interpretive programs regarding timber growth and yield. This could be particularly enlightening to visitors, in view of the fact that the great majority of the Inyo's recreational users come from south of Bakersfield where more than 75% of the lumber used in California is consumed

We generally agree with the proposed management prescriptions and land allocations for potential alpine ski areas. This is particularly true in the Mammoth Escarpment management area, where all areas with real potential will

available for development. The Potential Alpine Ski Area management prescription recognizes that timber management and alpine ski area development are compatible when proper silvicultural systems are applied.

According to the plan, the San Joaquin Ridge is at the bottom of the priority list for development, and may not be developed until all other potential sites have been (DEIS-68). Therefore, we feel that timber management can proceed here under the prescription for potential alpine ski areas, and not sit idle for years

There is an opportunity to manage timber stands in developed recreation areas The Inyo plan states that (DEIS III-92) ..."a high concern is the need to improve the health and vigor of timber stands in areas with recreation management emphasis Many timber stands in recreation areas show evidence of stress from several factors, including pests and overstocking. Such stands will be highly susceptible to increased pest-related damage unless brought under management.. " Current management is to remove hazard trees only. "...The forest has the opportunity to manage timber in recreation areas. Silvicultural prescriptions can be written to improve the health and vigor of these stands and to maintain them in good conditions for the future " We agree with this statement and hope the Inyo takes an aggressive approach here.

d) Visual constraints will directly limit timber management on 6,596 acres of capable, available, and suitable timberland with the Preferred alternative M.I R.'s have been assigned to all alternatives that will limit timber management to partial retention of 4,207 acres along all scenic highways. In addition, the Preferred alternative proposes these same restrictions on an additional 2,389 acres along sensitivity level 1 roads and trails. This is a small part of the total Inyo Forest, but a large percentage of the timberland base. Harvesting in these areas will have a small impact on total Inyo visual quality, but a huge impact on the timber sale program. We can agree with the M I.R. visual constraints

COUNTY ELECTED OFFICIALS

ing State Scenic Highways, recognizing the social benefits to local communities and visitors, as long as a management prescription can be written that will improve the health and vigor of these stands to maintain them in good condition for the future. However, we feel that the additional 2,189 acres along level 1 roads and trails should be managed with a timber emphasis

e) Wildlife diversity constraints applied to provide old growth seral stages will limit timber management of 6,587 acres of capable, available, and suitable timberlands. This additional restriction seems unwarranted, since 62,506 acres of capable and suitable lands, much of it in older seral stages, have already been preserved in wilderness and R.N.A. areas. An additional 514,000 acres of incapable and unsuitable timber acres have also been preserved in the same way. We will support a maximum of 450 acres of older growth habitat for goshawks, because we feel enough of this type of habitat is already available to meet the intent of preserving old growth seral stages.

Fuelwood

Fuelwood is in very high demand, yet the Inyo has proposed an alternative which will decrease the availability of fuelwood. Most fuelwood is a direct product of timber management activities on timberland acres. The more the timber land base and timber harvesting are restricted, the more acute fuelwood shortages will be. Local residents support the timber sale program in part because they know timber harvesting and pre-commercial thinning supply a great deal of their fuelwood. The RPA alternative with its land allocations and timber management intensities is the only alternative which can even come close to meeting fuelwood demand. We support a plan that will keep the maximum acres in the timber land base and a constant supply of sawlogs and fuelwood consistent with demand, with the possibility of supplementing fuelwood supplies from the pinyon-juniper stands. We don't support the transfer of wood production from sawtimber to fuelwood programs

cial and Economic

The Inyo plan states (DEIS III-91) that the Inyo National Forest is not a significant contributor to Regional timber targets. While the total timber output may not be as large as some other forests, like the Plumas, the ASQ on the Inyo is an important part of the composite timber supply picture in the western U.S. Inyo timber is in high demand and any short fall here will place increased pressure on other public and private sources of timber. The Inyo has the biological capacity to produce timber and must contribute its fair share.

The statement in the plan (III-33) that says "there are no local sawmills or communities that rely on forest timber" is disturbing. Obviously there are sawmills within the forest's impact area that do rely upon its sawtimber output. This is reflected in the very high demand and stumpage prices 3 to 4 times advertised rates. Affected mills include Sierra Timber Products, Gardnerville, NV; Sierra Pacific Industries, Loyalton, CA; Louisiana Pacific Corporation, Inyo-kern, CA; Natsel-Ovlatt, Folsom, CA, to name a few. Assuredly, the Inyo is not the sole source, but total timber supply is an aggregate of several partial sources, each critical to maintaining the total.

Local communities benefit directly from the 25% receipt payments to local counties. In 1985, 34% of the 25% receipts for local schools and roads came from timber sales. The timber land base, which comprises only 6% of the forest contributed 34% of these 25% receipts. 1986 figures are very similar. Obviously, any reduction in the timber program and timber land base will directly affect the local communities.

In addition, the Plan states (III-33), "local communities are almost entirely dependent on the forest as a source of commercial and personal use fuelwood," a great deal of which is generated by timber management activities.

COUNTY ELECTED OFFICIALS

Recreation

We agree that recreation is a major resource on the Inyo National Forest, and that recreation demand is likely to continue to increase. We believe that management for recreation potential need not be an "either/or" situation, and that timber management can, in some instances, be used to enhance the recreation resource We generally support developed recreation and alpine skiing as proposed in the Preferred alternative We also feel the land allocations of the RPA alternative will best serve the general public for a wide range of dispersed recreational opportunities, including wilderness experiences (on 30% of the Inyo), hiking, nordic skiing, ORV use and others

Wilderness

With more than 30% of its land base already designated as wilderness, the Inyo simply does not need anymore Congress has already allocated those areas with distinctive wilderness characteristics. It must be recognized that the demand for all the multiple uses and commodities is likely to increase in the future, and that exclusionary allocations above these levels cannot be consistent with legislative direction We believe that at 30% you may have already exceeded that level.

We hope the Forest Service is not influenced by the small vocal minority and national "special interest" wilderness groups who promote the benefits of more wilderness. If more people knew the real costs of more wilderness in terms of lost jobs, resources, and the personal liberty to use our national forests, there would be very little support for wilderness additions.

Minerals

The proposed reduction of mining opportunities is due largely to withdrawal of lands for wilderness Such withdrawal is not justified until there has been

more careful analysis of mineral potential within the lands proposed for withdrawal the national demand for minerals is increasing As a result, a greater emphasis must be placed on exploring for and developing minerals on public land Depletion of current reserves, and a national desire to reduce dependence on foreign supplies are among the reasons why lands with mineral potential should not be withdrawn from prospecting and development. Lands that have geothermal potential should be kept available for development Because local demand for aggregate will increase as local sources are depleted, sites with this potential should remain available for future development.

Wild and Scenic Rivers

We support the RPA land allocations and management prescriptions, but feel that designation of the South Fork of the Kern River as a Wild and Scenic River will restrict access to, and hamper the RPA intent to manage the area east of the river. Similar designation of the San Joaquin River should not be made until a further study is made of future water diversions and other opportunities to use resources

Range

We support the Preferred alternative for its levels of range management and outputs These increases in range management opportunities will serve the needs of the cattle and sheep industries. Mule deer will benefit from these range management activities by getting priority on key fawning areas and winter range

Watershed Management

We feel the Inyo should implement the watershed improvement needs plan at an average rate of 350 acres per year as proposed in the Preferred alternative We recognize this as an opportunity to increase wildlife habitat quality, rangeland, and reduce the impact of sediment from eroding wet meadows

COUNTY ELECTED OFFICIALS

The Inyo should coordinate landownership objectives with community planning and forest management objectives to provide for community growth associated with increased alpine ski area capacity. We do not promote the idea that the federal government acquire any additional private land. There currently exists an acute public/private landownership ratio in Inyo and Mono counties where 97% of all land is owned by some governmental jurisdiction.

Summary

We support the RPA alternative incorporating the modifications mentioned above. Such a plan will preserve the multiple use concept on the Inyo National Forest and ensure that our limited resource base will be available to meet the current and future demands for natural resources and supply jobs for local communities, the state, and country.

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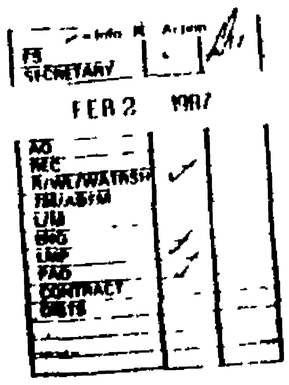

January 30, 1987

Dennis W. Martin, Forest Supervisor
Inyo National Forest
873 North Main Street
Bishop, CA 93514

RE: Proposed Inyo National Forest Land and Resource Management Plan and Draft Environmental Impact Statement

Dear Mr. Martin:

The Tulare County Board of Supervisors has reviewed the proposed Forest Plan and finds that the County will not be adversely impacted by its implementation. However, we would like to apprise you of the County's consistent opposition to restrictive designations for any segment of the Kern River, within Tulare County, under the Wild and Scenic River Act.

The attached letter to U.S. Senator Alan Cranston, sets forth several points of concern. These points clearly state the County's reasoning for opposing legislation that would place either the North or South Fork under the Wild and Scenic River Act.

Sincerely,

TULARE COUNTY BOARD OF SUPERVISORS

Ben E. Webb, Chairman

BEW:RT:kc
xc: Building and Planning Department

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VISALIA CA 93291

✓ = Info X = Action

FB	✓	
SECRETARY		

FEB 2 - 1987

AO		
REC		
R/WL/WATRSH	✓	
TM/ASFM		
L/M		
ENG	✓	
LMP	✓	
PAD		
CONTRACT		
CBSB		

January 30, 1987

Dennis W Martin, Forest Supervisor
Inyo National Forest
873 North Main Street
Bishop, CA 93514

RE Proposed Inyo National Forest Land and Resource Management Plan and Draft Environmental Impact Statement

Dear Mr. Martin,

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The attached letter to U S Senator Alan Cranston, sets forth several points of concern These points clearly state the County's reasoning for opposing legislation that would place either the North or South Fork under the Wild and Scenic River Act

Sincerely,

TULARE COUNTY BOARD OF SUPERVISORS

Benny E Webb

Ben E Webb, Chairman

BEW·RT ke
xc Building and Planning Department

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Chief Clerk

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2800 WEST BURREL

October 10, 1986

Senator Alan Cranston
U.S. Senate
Washington, D.C. 20510

Dear Senator Cranston:

The Tulare County Board of Supervisors has recently reviewed and discussed the various legislation introduced before Congress since December 1985 on the designation of the North and South Forks of the Kern River under the Wild and Scenic River Act.

On behalf of the Board of Supervisors, we would like to go on record as being opposed to any designation of the North or South Forks of the Kern River under the Wild and Scenic River Act.

This continues to be consistent with our position taken on this issue in 1982. In our letter dated January 19, 1982, to the Sequoia National Forest, following review of their "Draft Environmental Impact Statement and Study Report-North Fork Kern Wild and Scenic River Study", we indicated our opposition to the Forest Services' selected Alternative A (preferred alternative - full designation) and supported Alternative E, no designation. We believe, at this time, as we did then, that designation, not only of the North Fork, but now of the South Fork as well, would not be in the best interest of the citizens of Tulare County, based on the following·

1. The upper 47.5 miles of the North Fork Kern River (segments 1 and 2) is contained within either the Sequoia National Park or the Golden Trout Wilderness area. As such, management practices for this portion of the river will not change if this portion of the river is designated under the Act.

2 The majority of the 72.5 mile stretch of the South Fork Kern River determined eligible for wild and scenic river status is situated within either the South Sierra or Domelands Wilderness areas, and as such, management practices for these portions of the river will not change if these portions of the river are designated under the Act

3 Designation of any portions of the North Fork Kern outside of Wilderness areas will prohibit future major water improvement projects from being constructed on the river Although construction of the Elephant Knob Reservoir has been determined to be infeasible at this time, it is inappropriate to preclude consideration of this and other such water projects in the future The development of water resources for both energy and agricultural irrigation purposes is of major importance to the well-being of the citizens and economy of Tulare County and surrounding areas.

4. The Study Report prepared in 1982 by the Forest Service states that a 15% increase in visitor use is anticipated to occur after the North Fork Kern is designated. The expected additional visitor use will increase demands upon public services, including police protection and road maintenance, the costs of which are normally borne by Tulare County. In its review in 1982, the Board noted that the Forest Service Study Report anticipates increases in local revenues to result from the additional visitor use. However, as the majority of the developed camping facilities are situated in Segment 4, (the 17.3 mile stretch below the Johnsondale Bridge), it is likely that most visitors to that segment will purchase goods in Kernville (Kern County), as it is the nearest existing community with shopping facilities. This will substantially limit the revenues to be realized by Tulare County, probably to the extent that increased service costs will not be offset.

5. The general public, including property owners in Tulare County, who would be affected have not been afforded due process through public hearings on the matter of designating the South Fork Kern River, as was done on the North Fork back in the early 1980's Similarly, opponents to the recent legislation for the North and South Forks have apparently not been allowed equal time in Washington, D C to speak before Congress on this matter

On behalf of residents in Tulare County who will be affected by pending and possible future Wild and Scenic River legislation for any rivers in Tulare County, we would respectfully request that such proposals for amendments to or inclusion of river segments under the Wild and Scenic River Act be subject to the public hearing process, in order that you may know the voice of the people you represent on this sensitive issue

Sincerely,

TULARE COUNTY BOARD OF SUPERVISORS

Clyde R. Gould

Clyde R Gould
Chairman

CRG-MB:ke
xc: Building and Planning Department
Senator Pete Wilson
Congressman Bill Thomas
Congressman Chip Pashayan
Kern County Board of Supervisors

COUNTY ELECTED OFFICIALS

Senator John Garamendi

March 13, 1987

Mr. Dennis Martin
Forest Manager
Inyo National Forest
873 North Main
Bishop, California 93514

Dear Dennis:

The recent Inyo National Forest Draft Plan outlines that the San Joaquin Ridge is being considered under the criteria as a potential alpine ski area.

In support of this proposal, I want to point out that the federal RARE II bill in recent years also identified the San Joaquin Ridge as a potential ski area.

I recognize the importance of this recreation area to the counties of Mono and Inyo as well as the entire State.

I support the consideration to designate the San Joaquin Ridge as a potential alpine ski area.

Sincerely,

John Garamendi

JG:dcs

cc: Pam Rake

STATE CAPITOL ROOM 4081, SACRAMENTO 95814 (916) 445 2407
DISTRICT OFFICE 31 E CHANNEL STREET ROOM 440 STOCKTON 95202 (209) 948 7930

LIST OF RESPONDENTS

NAME	ID NUMBER
ABBEY, PAUL R. II	3753
ABBOTT, ALICE	2037
ABERNATHY, M.B.	1154
ABLER, KEN	3232
ABRONSON, C.J.	3247
ACCORDINO, BEVERLY J.	1380
ACOSTA, RENE	3914
ACTON, SANDRA	31
ADAIR, PHYLLIS	4117
ADAMS, L.	3656
ADAMS, TOM	4183
ADDIS, TOM	3924
ADELMAN, SIDNEY R.	62
ADLER, ELISA	1865
ADLER, I.	3602
ADLER, JAMES E. & RUTH A.	293
ADLER, KEN	884
ADLER, MARSHA	3811
ADLER, SEYMOUR	3253
AGREN, CARL	4271
AHLBORN, J. DANIEL	1570
AICHELE, JON R.	1590
AINLEY, DAVID G.	1749
AKAWIE, RICHARD	2119
ALBRECHT, REINHOLD	714, 715
ALBRIGHT, DOUG	3907
ALDERSON, EDITH	976
ALESHIRE, LINDA	3120
ALEXANDER, KAREN	1529
ALEXANDER, MARLENE	3815
ALISON-YOUEL, BARBARA	811
ALL KNIGHT REALTY	924
ALLAN, KERRY A.	2024
ALLAN, MARK	4140
ALLAWAY, TOBY L.	234
ALLBRANDT, MELVIN	3633
ALLBRITTON, PAUL	459
ALLDAY, JUDITH	3192
ALLEN, ELDRID R.	3872
ALLEN, JIM	1157
ALLEN, KEITH	1405
ALLEN, LAUREL	1568
ALLEN, PAUL J.	1277
ALLEN, SAM	4421
ALLEN, STEVEN R.	771
ALLEN, SUSAN	2024
ALLIANCE FOR ENVIRONMENT & RESOURCES	2179
ALLING, RONALD D.	2021
ALLISCAL, SHELLY A.	4460
ALLISON, CINDY	1157
ALLISON, MARGARET W.	1168
ALLISON, ROD	810
ALMOND, STACEY	2024
ALMOUR, DON	3955

NAME	ID NUMBER
ALPER, ANN	1491
ALTAFFER, W.	813
AMERICAN ALPINE CLUB	1928, 2152
AMERICAN MOTORCYCLE ASSOCIATION, DISTRICT #37	379
AMERICAN MOTORCYCLE ASSOCIATION	68
AMERICAN RECREATION COALITION	1796
AMES, ROBERT	693
AMESBURY, BRUCE	999
AMISH, REBA	434
AMNEUS, THOMAS	1654
AMSDEN, N.	4087
ANDERSON, ANDREW	762, 4111
ANDERSON, BILL	1581
ANDERSON, BILLY	4391
ANDERSON, BYRON	1424
ANDERSON, CHARLOTTE	3529
ANDERSON, CINDY	824
ANDERSON, ED	356
ANDERSON, ELIZABETH	1871
ANDERSON, GLENN E.	3856
ANDERSON, H.L.	120
ANDERSON, JANE	4390
ANDERSON, JASON	1069
ANDERSON, JUDY	1605
ANDERSON, MARK	1869
ANDERSON, MARY ELLEN	4109
ANDERSON, PETER	2024
ANDERSON, RAYMOND E.	3849
ANDERSON, SHEILA	1640
ANDERSON, STACY	3110
ANDERSON, TOM	3582
ANDERSON, VIDAR	1195
ANDES, ALEX	1692
ANDETTZ, JAMES	3191
ANDRE, JIM	1180
ANDRE, MARK	484
ANDREWS, PRESTON K.	1904
ANNIS, JIM	2011
ANTHONY, A.	3988
ANUBHUTI, SATYA	1460
APPLEGATE, DEKE	3459
APPRILL, JAMES	3117
ARCHIBALD, WILLIAM E.	3116
ARCULARIUS, HOWARD	1881
ARDITTI, SARA	2066
ARMISTEAD, DONNA L.	2069
ARNDALL, GLEN & JUANITA	490
ARNOLD, DICK	1415
ARNOLD, LINDA	906
ARNOLD, MRS. R.	903
ARNOLD, W.G.	4407
ARRE, STEVE	3065
ARRIGO, MARY	338, 964
ARSENAULT, DENNIS	3326

NAME	ID NUMBER
ARTHUR, VIRGINIA	1470
ASHER, JAMES	764
ASHLEY, M.F.	4303
ASIMONT, SCOTT	3975
ASKEVOLD, RUTH A.	2036
ASTER, PAUL	923
ATKINS, ARTHUR	865
ATKINS, MARGO	767
ATKINSON, AL	1119
ATKINSON, CLIFF	4458
ATKINSON, LAURENCE T.	1619
ATKINSON, RALPH L.	1157
AUDUBON SOCIETY	1411, 1562
AUDUBON SOCIETY - EASTERN SIERRA	1923, 2210
AUDUBON SOCIETY - NAPA-SOLANO	1032
AUDUBON SOCIETY - SACRAMENTO CHAPTER	1983
AUDUBON SOCIETY - TULARE COUNTY	1738
AUTRY, BOB	1756
AVAY, GEORGE	2024
AVEDIKIAN, ED	3766
AVIGNON, MAJOR	2118
AVILA, EILEEN	840
AVILA, LUCY	867
AVILA, MERLE	839
AXON, DARREN	1640
AYAKATUBBY, GARY L.	3483
AYERS, ROD	2196
AYRE, SAYWARD J.	1532
BAAS, MIKE, SUSAN & ROBERT	911
BABB, CLARA	968
BACKES, MICHAEL J.	469
BACON, B.N.	3179
BADGLEY, T.M.	542
BAGGETT, L. RICHARD	1505
BAGLEY, MARK	1589
BAILEY, TAMMIE & GORDON	2024
BAILS, TERI	1157
BAILY, SCOTT	443
BAIN, SCOTT A.	3744
BAINS, WILLIAM H.	1893
BAIRD, MARK L.	879
BAKER, BILL	1389
BAKER, DOUGLAS L.	2024
BAKER, GLENN M.	850
BAKER, MARK	1640
BAKER, NANCY	3177
BAKKE, ODD W.	1436
BALBOA SKI CLUB	395, 1812
BALDWIN, JERRY	1929
BALES, TERI	1888
BALINT, SUSAN E.	94
BALL, GARY & BETTY	2101
BALLENGER, CLARENCE R.	1342
BALLENGER, JUNE	1301

NAME	ID NUMBER
BALOG, MARIANNE N.	1975
BALOPOLE, MARGE	138, 1768
BANDFIELD, STACEY	564
BANES, MICHAEL E.	3880
BANHART, BRUCE	1498
BANKA, BILL	458, 1790
BANTA, CLIFF & JUNE	996
BANTA, DON	1764
BANTAH, SYLVIA	2024
BARAGER, STEVE	1592
BARBEAU, C.L.	3890
BARBEE, JOHN	531
BARBER, HARLAN	1283
BARD, C.	1640
BARIBAULT, SUSAN	3462
BARIBAULT, W.H.	3469
BARKER, ROBERT EDGAR	724
BARLOW, MR. & MRS. ARTHUR	415
BARNES, D.A. CLARK	892
BARNES, LARRY J.	180
BARNES, MICHELLE	638
BARNES, MYRA E.	1974
BARNES, RICK NEIL	3846
BARNES, ROBERT I.	1512
BARNHART, BRUCE	1474
BARRETT, MAXINE	3139
BARRETT, ROBERT W.	3893
BARRETT, THOMAS	3701
BARRIE, CAROLINE	3692
BARRON, DAVID	166
BARRON, JUDY	3760
BARROW, BOB	1595
BARRY, W.J., TUOLUMNE MINWOK TRIBE	2054
BART, FRANCES	3356
BARTH, ARTHUR W.	4169
BARTLETT, BOB	2110
BARTLETT, DON	2024
BARTON, JANE M.	3508
BARTON, JOHN A.	4093
BARTON, KENNETH R.	4065
BARTON, LAVERNE	1130
BARTOS, PAUL R.	188
BARTSON, ANDY P.	1018
BASS, GUS D.	4125
BATCHELDER, GEORGE	796, 902
BATES, DENNIS E.	815
BAUCH, STEVEN B.	4188
BAUER, GERHARD	3859
BAUER, LORRAINE M.	3986
BAUER, M.	1916
BAUERFEIND, STEVE	1640
BAUM, RUDY M.	270
BAUMEISTER, E.	3748
BAUMWOHL, DAVID	732

NAME	ID NUMBER
BAXTER, DAVID G.	1021
BAYHI, MICHAEL	154
BAYS, PETER	1805
BEADER, E.E.	869
BEAKLEY, CONSTANCE	3897
BEALE, ELLEN J.	1321, 3574
BEAN, BETTY	1506
BEAN, CRAIG	1640
BEAR, ERIK	4044
BEBER, BENJAMIN & SUE	4352
BECHARIELL, SHAN	4470
BECKEL, DARRIN	1640
BECKER, DONALD	4105
BECKER, PHYLLIS	4184
BECKLER, HOWARD	3965
BECKLEY, THOMAS E.	614
BEDEU, BERNARD	40, 1774
BEEBE, RICHARD D.	1608
BEEKHOF, C.W.	3353
BEEKHOF, EVELIN	3094
BEESON, RICHARD D.	563
BEGGS, MICHAEL	3902
BEGLAN, DIANE	4417
BEHM, EDWARD G.	3668
BEIDERBECKE, S.M.	882
BEILY, SHELLY	2024
BEITLER, JENNIFER	1068
BELDEN, PAUL C.	4149
BELEC, RENELLE	1054
BELL, PAMELA	451
BELL, RICHARD & KAREN	1378
BELL, SANDRA	3554
BELLAMY, ED	2073
BELLI, MINDY & DENNIS	214
BELLONA, WILLIAM F.	1468
BELT, BRUCE G.	1175
BELT, KATY C.	1532
BEMER, TED	1535
BENCHENES, BRIAN J.	3565
BENDARZEWSKI, JERRY A.	200
BENDETT, CHARLOTTE	4377
BENDETT, JEROME	4378
BENEDICT FAMILY	3226, 3227
BENELL, ROBINA M.	4007
BENGOCHIA, MIKE	576
BENGOCHIA, TONY	534
BENIER, SUSAN J.	747
BENIOFF, LEORA	2034
BENIOFF, MILDRED	1788
BENIS, KEARA	255
BENJAMIN, CHRISTIAN	3740
BENJAMIN, SHELDON	4182
BENNER, JOAN	1252
BENNETT, ALEX	121

NAME	ID NUMBER
BENOIT, BOB	2063, 5031
BENSON, JOHN	1039
BENT, ROBERT	3174
BENTLEY, ROGER	31
BENTON, C.H.	4045
BENZ, JAMES R.	4457
BERAN, JUERGEN P.	838
BERAN, LINDA	863
BERENDT, HENRY A.	2165, 2215
BERENS, LARRY	2088
BERGER, MICHAEL	3136
BERGER, R.J.	3997
BERGER, TERI	3535
BERGMAN, A.J.	588
BERGMAN, JACQUELINE	565
BERGSTROM, BOB	997
BERKELBACH, BOB	4357
BERKLEY, PATRICIA L.	1417
BERKOWITZ, SHELLY	1623
BERKOWITZ, WALTER	1700
BERLIN, FRANK	4346
BERNARD, JOHN W.	413
BERNARD, KATIE	3833
BERNARD, R.G.	125
BERNARDI, STEVE	1908
BERNING, RANDOLPH	3040
BERQUAM, JAMES V.	3711
BERRY, THOMAS P.	1472
BESOZES, JAY	301
BESSERT, BILL	2024
BETTKER, MARILYN	561
BETTS, MIKE	1750
BEUTHIN, TOM	4414
BEVERIDGE, JOANNA	3357
BEVERIDGE, TOM	3096
BEYER, CURTIS M.	3821
BIANCO, CARL	545
BICINIEBI, MARGARET	2024
BICKLE, KURT	4126
BIDDLE, SUSAN	4496
BIENER, KATRINA	392
BIERMAN, JENAFER	3601
BIGLEY, DANIEL J.	1601
BIHM, RICK J.	476
BILLINGS, ROBERT D.	391
BILODEAU, JAMES P.	3953
BINGHAM, ELISABETH	1732
BIRIMISA, LYNNE	4068
BIRMINGHAM, K.G.	1200
BISHOP CHAMBER OF COMMERCE	2090, 2191
BISHOP, CHRIS	3586
BISHOP, SHANNON	1038
BISSON, KENNETH	3221
BITTNER, ANTHONY JR.	3791

NAME	ID NUMBER
BLACK, JOHN K. JR.	719
BLACK, BEVERLY S.	3100
BLACK, GERALD E.	3739
BLACK, STEPHEN D.	3361
BLACK, TRACY	1880
BLACKMAN, VERN C.	291
BLACKWELDER, R.	3211
BLACKWELL, MARA	1784
BLACKWELL, MARIA	1696
BLANCHARD, DEAN	1553, 3204
BLANCHARD, SCOTT	4162
BLANCO, RICHARD M.	3301
BLANSET, DERK	1925
BLAUER, STEVE	3070
BLAYLOCK, JAMES P.	600
BLISS, THOMAS A.	131
BLOCH, N.E.	4011
BLOCK, S.M.	4108
BLOMQUIST, CARL A.	4227
BLOOM, ABE	3490
BLOOM, ANNIE	3713
BLOOM, SANDY	4133
BLOOMBAUM, MILLIE	2027
BLOOMENSTEIN, JULIE	1640
BOATWRIGHT, DONALD W.	3252
BOBO, DICK	1288
BOCKS, SPENCER W.	3287
BOEHM, JOHN, GREGG & BRENDAN	4211
BOEHMER, HOWARD W.	4116
BOERGER, MARGARETE	3151
BOGAARD, JOE	1229
BOGGESS, WILLIE	1528
BOHANNAN, BILL	3591
BOHANNAN, GINNY	3578
BOHM, G.	1459
BOLLENBACHER, D.& M.	1334, 1337, 1364, 1373
BOLLINGER, JANA	1441
BOLT, ROBERT	3129
BOLTON, TOM	4415
BOMBORDE, BRUCE	66
BONCUTT, FREDERICA S.	71
BOND, JERALD F.	4204
BONEY, BETTY L.	4112
BONNER, CLIFF	475
BONNER, HELEN	1965
BONNY, CHARLES	1722
BOOM, CLARK	4189
BOOSE, RANDY	581
BOOTH, RICHARD W.	1995
BOOTHWER, JEFF	2024
BOPP, JULIA ANN	1285
BORHANI, TRACY E.	10
BORNE, GENE	601
BORTNISK, BARRY	1702

NAME	ID NUMBER
BOUCHERIE, JOHN	702
BOUJIKIAN, MANAS	4364
BOUSKA, EDWARD L.	648
BOWDEN, DIANE	779
BOWLES, SUE	1734
BOWMAN, G.M.	3862
BOWMAN, JIM	3029, 3076
BOYD, BARBARA	2024
BOYD, LESLIE A.	2024
BOYD, MOLLY	669
BOYD, RALPH	3593
BOYER, KAREN & KENT	3719
BOYER, S.H.	798
BOYLE, GARY	2111
BRADBURY, BARBARA	3428
BRADBURY, BOB	3349
BRADEN, D.P.	2026
BRADLEY, NEIL A.	597
BRADY, ED	203
BRADY, OTIS	1025
BRADY, VICKI & MIKE	1826
BRAINARD, ELLIOT F.	666
BRALVER, PETER J.	112
BRAUN, PATRICIA	3499
BRECKELL, J.	3742
BREED, MARTHA H.	946
BREHM, DAVID	463
BREHMER, EDWIN	85
BREITSTEIN, KEN	3126
BRENNAN, KEVIN	4178
BRENNER, GARY L.	159
BREWER, TERRY A.	789
BRIAN, MIKE	4394
BRIDGES, GEORGE A.	1662
BRIEF, HOWARD	3858
BRIELL, WARREN E.	2005
BRIGHAM, DONNA	890
BRIGHT, ERIC	1064
BRINKMAN FAMILY	566, 567
BRITT, SHARON	2097
BRITTON, DONALD A.	1847
BROBERG, CAROL	1572
BROCK, STEVE	3313
BRODBECK, JACK D. SR.	928
BRODBRING, BRIAN	1993
BRODERICK, CRAIG J.	3563
BRODRICK, MARK W.	654
BRODRICK, SANDRA LEE	665
BROEN, JON	4018
BROMLEY, TONYA	3176
BRONSON, T.F.P.	3646
BROTHER, BIRD	450
BROUGHER, STEVEN R.	167, 1484
BROUGHTON, BEVERLY	1028, 3959

BROWER, ROBERT 3264
BROWN, A. & E.; ENVIRONMENTAL ANALYSTS 1631
BROWN, ANNEMARIE 3044
BROWN, BETTY S. 3310
BROWN, BRYCE 1627
BROWN, CHARLES G. 1542
BROWN, CRAIG A. 3580
BROWN, EARL V. 31, 350
BROWN, ED 2024
BROWN, EUGENE 471
BROWN, FREDDIE 1201
BROWN, GEORGE 3091
BROWN, J.A. 3045, 6001
BROWN, JOHANNA 3388
BROWN, LEONARD H. JR. & SHIRLEY 1842
BROWN, LINDA 1586
BROWN, LORETTA 2024
BROWN, MELINDA 1640
BROWN, SUNSHINE 1449
BROWN, TOM W. 4446
BROWN, WILLIAM 580
BROWNING, LINDSAY D. 3394
BROWNING, W.H. 1511
BRUBAKER, S.A. 4436
BRUCKER, WILLIAM A. 3873
BRUFF, GREGG L. 470
BRUNICARDI, STENO 4255
BRUINSMA, RICHARD 174
BRUNKE, FREDRIC 1448
BRUNO, MATTHEW 3930
BRYAN, H.L. 3064
BRYAN, KATHY 4474
BRYAN, R.L. JR. 1531
BUCK, BYRON M. 3731
BUCK, STEVE 4473
BUCKLEY, DAVID 1618
BUCKMAN, DAVID L. 628
BUCKMAN, HOWARD 517
BUCKNAM, LINDA 310
BUE, TIM 4480
BUEHLER, DENNIS 2181
BUHLER, JOHN 3157
BUHLER, KERRY 3663
BUJOLD, WAYNE 663
BULL, CHARLES E. 975
BULPITT, EDWARD R. 1492
BUMBAUGH, ROBERT 660, 917
BUMGARNER, CHARLOTTE 1157
BUNTIC, ROBERT 748
BUONGIONO FAMILY 4128, 4129
BURDETTE, EMILY 1809
BURDICT, DARREL C. 2024
BUREAU OF LAND MANAGEMENT, BISHOP AREA 176
BURGER, DALLAS O. 54

NAME	ID NUMBER
BURGHER, CAMILLA	2042
BURK, PETE & JOYCE	177
BURKE, A. BERNARR	3002
BURNHAM, JEREMY R.	1331
BURNHAM, P.A.	3058
BURNS, ROBERT	1157
BURNS, ROLLAND F. II	130
BURNS, STEVEN RAY	3650
BURNSTROM, JOHN	3178
BURRELL, DAVID C.	716, 949
BURRILL, GERALD M.	1297, 4048
BURROUGHS, D.H.	4219
BURSIK, MARCUS	411
BURTON, JACQUELINE M.	2024
BURTON, JOE	3964
BURTON, JOHN	2024
BUSCH, RALPH B. JR.	4220
BUSHMAN, DEE	515
BUSHMAN, JACQUES	516
BUSHMAN, RON	3450
BUSSE, LILLIAN A.	256
BUTCHER, SCOTT	102
BUTLER, R.W.	1427
BUTLER, SCOTT	3049
BUZZY, BILL	160
BYAM-BOJAAK, MELISSA	1330
BYRON, ROBERT T.	4332
CALIFORNIA DEPARTMENT OF FISH & GAME, REGION #5	2190
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD	1939
CAGA, JEANINE	1136
CAGLE, BETTY ANN	3416
CAGLE, GALYN	3415
CALDERA, MANAEL	769
CALDWELL, BILL	2024
CALDWELL, ELAYNA	3320
CALDWELL, KATHLEEN	883
CALDWELL, MARGARET R.	1218
CALEF, OTIS	942
CALIFORNIA SPORTFISHING PROTECTION	1269
CALIFORNIA ASSOCIATION OF 4WD CLUBS	46, 1807
CALIFORNIA BOARD OF FORESTRY	49, 181
CALIFORNIA CATTLEMEN'S ASSOCIATION	2193
CALIFORNIA DEPARTMENT OF FISH & GAME	17
CALIFORNIA NATIVE PLANT SOCIETY	1108, 1431
CALIFORNIA SAVE OUR STREAMS COUNCIL	1015
CALIFORNIA SNOWMOBILE RIDERS ASSOCIATION	101
CALIFORNIA TROUT	2183
CALIFORNIA WILDERNESS COALITION	2160
CALIFORNIA-NEVADA SNOWMOBILE ASSOCIATION	53
CALLER, EVIAN & GABRIELA	6002
CAMPBELL, BARBARA	908
CAMPBELL, BRUCE K. JR.	1772
CAMPBELL, DON C.	2024
CAMPBELL, DOROTHY E.	119

NAME	ID NUMBER
CAMPBELL, FRANKLIN H.	6003
CAMPBELL, JOE	1157, 1888
CAMPBELL, KATHLEEN M.	1998
CAMPBELL, KENNETH F.	2024
CAMPBELL, ROBERT E.	3375
CAMPBELL, SCOTT L.	3980
CAMPBELL, STAN	1678
CAMPBELL, TONY	4033
CAMPHAUSEN, FRED	925
CANADA, MARY	4155
CANALLAND, MAUREEN	2024
CANNING FAMILY	2024
CANNON, BEN	4146
CAORN, STEFEN R.	1341
CAPPELLO, PHYLLIS LYNN	4375
CAPPS, ALAN	539
CARDINA, THOMAS J.	3269
CARL, JOE	1888
CARLSEN, GARY, ANNE & CARA	3784
CARLSON, BROOKE	3466
CARLSON, MARVIN	3496
CARLSON, ROY	3472
CARLTON, ALAN	1348
CARNEY, BILL	221
CARPADAKIS, ANN S.	1762
CARRARCO, THERESA	6004
CARREIRO, GEOFFREY M.	4317
CARRINGTON, R.	927
CARRINGTON, WOODY	1494
CARROLL, ELLEN	1852
CARTA, PETE	3803
CARTER, FRED W.	4059
CARTER, RAYMOND T.	2012
CARTMELL, ROBERT W.	985
CARTWRIGHT, RAY	3961
CASE, DESMOND	3874
CASE, STEVE	4246
CASELIUR, BILLIE & SCOTT	2024
CASEY, PETER M.	4156
CASPER, BERNARD G.	4243
CASSADY, MARLENE LEMON	2024
CASSIDY, KEVIN	5007
CASSTEEL, SINDONA	1454
CASTALDO, J.R.	3258
CASTER, EDWARD	2018
CASTER, KEN	1640
CATANZARO, GENE	3816
CATHCART, CATHY	803
CATHERMAN, DARRELL & NANCY	460
CATHERMAN, J.	634
CATHERMAN, LISA	584
CATLIN, RUTH & CRIS	1178
CATLIN, TIM	1563
CAUDILLO, ANTONIO B.	951

NAME	ID NUMBER
CAULFIELD, JAMES D.	3981
CAULFIELD, NANCY F.	989
CAYSE, BRUCE	1152
CEREDA, ED	3046
CHABOT, MARGARET	1748
CHAFFERS, SHIRLEY	599
CHALE, CHRIS	695
CHALMERS, LINDA	3039
CHANDLER, ANNIE	422
CHANDLER, PAULINE A.	4216
CHANDLER, RAY E.	620
CHANDLER, STEVEN W.	425
CHANDOR, STEBBINS B. JR.	4490
CHANG, CHRISTEL	3162
CHANNEL, SHELLY C.	1211
CHAPMAN, DEBORAH	504
CHAPMAN, PEREY C.	799
CHASE, TOM & NORENE	1031
CHECO, JAMES W.	2125
CHEW, FREELAND	4197
CHINN, JAMES	3634
CHOLKO, FRANCIS K.	1280
CHOMKO, WILLIAM P.	3435
CHORMICLE, WES	794
CHRISTENSEN, E.G.	1234
CHRISTENSEN, J.M.	1640
CHRISTENSEN, JACK	107
CHRISTENSEN, SCOTT	1556
CHRISTENSON, D.L.	3068
CHRISTIANSEN, DAVE	1084
CHRISTIE, HELEN	1778
CHRISTMAN, A.B.	1215
CHRISTOPHERSON, E.J.	2024
CHRZANOWSKI, R.	4053
CHU, LAURIE N.	3304
CHUNG, PAUL	704
CHURCH, DONALD E.	1353
CHURCH, GAIL	3311
CHURCH, JAMES	858
CHURCHILL, GORDON	3225
CIAFARDONI, THERESA	1463
CLANCY, ANNE P.	3295
CLARK, BRIAN	1176
CLARK, GARY R.	70
CLARK, GAYNNE	212
CLARK, JOHN	4130
CLARK, KATHRYN	3538
CLARK, LINDA R.	4085
CLARK, MARK D.	965, 1222, 1481
CLARK, RENEE E.	1661
CLARK, SHARON R.	891
CLARK, SHELLEY SPAULDING	1161
CLARK, STEPHEN	1361
CLARK, TIM	846

NAME	ID NUMBER
CLARK, WARREN	3054
CLARKE, E.	387
CLARKE, SI	3344
CLARKE, SUSAN	3827
CLAUS, FLOYD J.	4241
CLAVIN, DOROTHY P.	393
CLAYTON, JAMES E.	19
CLELAND, DESTON & DOROTHY L.	457
CLELAND, DUKE	1184
CLELAND, KEN	1420
CLEMENT, MARTIN	3504
CLEVENGER, JOANN	737
CLEVENGER, VERN	1968
CLINE, ROBERT	31
CLUTTER, RONALD	3354
COAS, STEVE	535
COATS, DAVID	2024
COATS, J.H.	3122
COBBETT, GEOFF	705
COBER, LAURENCE	1165
COCHRAN, CLAUDIA	1082
COCKS, STEVE & PEGGY	1848
COE, PAUL	3124
COHEN, COLLEEN	2024
COHEN, CRAIG	680
COHEN, MICHAEL A.	4223
COHEN, ROBERT M.	3745
COKER, JOYCE	1731
COLBERT FAMILY	4400, 4401, 4402, 4403, 4404
COLBY, JACK	3223
COLE, MR. & MRS. ROBERT	1115
COLEMAN, BARBARA	723
COLES, ALAN	1490
COLES, THOMAS L.	3007
COLES, TIMOTHY	3132
COLGAN, BRIAN	1640
COLLIER, VIRGINIA	173
COLLINS PINE COMPANY	1646, 1647
COLLINS, DALYA	3077
COLLINS, JOHN S.	3702
COLLINS, ROSEMARY	3700
COLTON, SYLVIA	23, 1988
COLTRIN, BETTIE	4324
COMASTA, JOSEPH R.	197
COMERON, JAMES T.	31
COMO, JIM	782
COMPTON, CAROL	1681
COMPTON, PAT	204
CONCERNED CITIZENS FOR PUBLIC LANDS	283, 1258
CONDER, JUSTIN	1037
CONE, PATRICK	1743
CONKLIN, MIKE & ROBIN	31
CONLEY, KEN	836
CONLEY, MRS. FRAN	1281

NAME	ID NUMBER
CONLY, MR. & MRS. EDWARD	2016
CONN, RICHARD B.	797
CONNABLE, KATHALINE	149
CONNOLLY, PATRICK	209
CONSOL, SHARON	205
CONTIERAS, MARTY	1888
COOK, GREGORY & DELLA	3768
COOK, JEFFREY	2162
COOK, SHARON	1704
COOLEY, CHRIS	4410
COOMER, KATHLEEN	3903
COOPER, BARRY	3294
COOPER, CANDICE	2024
COOPER, SCOTT J.	4142
COOPER, TOM	969
COPELAND, JAMES	1151
CORINGTON, RUSS	1640
CORLISS, GREY	3224
CORNNAN, CLARK B.	3659
CORONADO, ROD	302
CORTEZ, DON R.	4454
COSSETTE, K.	2166
COSTANZO, CHRISTIE	2049
COSTELLO, PATRICK	1364
COSTRUH, GEORGE	2168
COTEY, HELEN C.	578
COTRONEO, CHARLENE	866
COTRONEO, K.	864
COTTER, CHARLES W. & LOIS N.	783
COUEY, WILLARD & ROSE	1742, 1747
COULES, DENNIS	1971
COULON, BILL	827
COULTER, K.B.	3863
COURTLAND, DIANE	1838
COUTRE, PHILIP R.	3470
COUTTS, R.D.	4413
COVENEY, JOHN J. III	2136
COVINGTON, RUSS	4386
COWAN, BARRY	1430
COWAN, PAUL M.	1205
COWAN, RICHARD S.	2094
COX, ALBERT A.	1873
COZAD, CHRIS	1473
CRAIG, MARION R.	1545
CRAMER, RUSSELL M.	3710
CRAMER, STEVE	3276
CRANE, ANDREW	6005
CRANE, YVONNE	3869
CRANOR, CHUCK	970
CRAVEN, CHRISTOPHER	870
CROCKETT FAMILY	775
CROCKETT, DAVID	4350
CROCKETT, DAVID L.	4213
CROKER, CAROLYN	1909

NAME	ID NUMBER
CROSSLEY, JEAN	1902
CROSSMAN, HEATHER	2140
CROUCH, JAMES	187
CROUCH, ROY	510
CROWE, TOM	1591
CROWELL, KATHLEEN	773
CRUMPTON, EVELYN	3403
CRYSTAL, CRAIG F.	2024
CUCURA, CONSTANCE	3629
CUCURA, EDITH	4078
CUCURA, JOHN	3484
CUCURA, PAUL	4066
CUDY, PEARL	2024
CUEVAS, JOHN R.	292
CULNAN, JAMES	1630
CUMBERLAND, MICHELE	3201
CUMMINGS, GEORGE	1717
CUMMINGS, JOHN	826
CUNDER, MILTON	4258
CUNNINGHAM, JOHN	801
CURISSO, VIVIEN	1888
CURLESS, BILL	171
CURRIE, ROBERT L.	1752
CURRON, ROSE	4143
CURRY, ROBERT R.; UNIVERSITY OF CALIFORNIA	1279
CURTIS, CHARLES	1628
CURTIS, M.J.	854
CURTIS, MATTHEW E.	1816
CURTIS, RHONDA	3159
CURTIS, WILMA A.	2030
CURWEN, ELWYN A.	3556
CUSHEN, JERRY & LORAINE	4025
DAGAN, MILDRED	3133
DAHLGREN, DICK	1418
DAIRIKI, NED & JANICE	1783
DALEY, RICHARD	3134
DALLADAS, M.	3205
DAMAN, WALTER	3813
DAMMON, J.R.	1344
DANICOURT, PENNY	1137
DANIELS, MARK	3581
DANIELS, RUSS L.	1076
DANYON, GREGORY J.	2012
DAPPER, TERRY	3340
DARLING, ERMA	5004
DASS, THIA	1864
DAUGHERTY, JAMES O.	3008
DAVIDSON, D.A.	3983
DAVIDSON, PATRICK	3024
DAVIS, JEFF & ANNETTE	3845
DAVIS, JIM	3127
DAVIS, JOHN	55
DAVIS, LAUREN	278
DAVIS, MARION	3537

NAME	ID NUMBER
DAVIS, RICHARD D.	532
DAVIS, ROBERT P.	3972
DAVIS, SUZI C.	4494
DAVISON, TIM A.	4047
DAWBER, BRAD	4051
DAWBER, LYNDA	3592
DAWDY, KENNETH	87
DAWS, JIMMY	3272
DAWSON, CHRIS	3693
DAWSON, DAN	1640
DAY, J. MICHAEL	622
DE BONA, MAURICE JR.	652
DE DECKER, MARY	134
DE FABRY, S. MARK	1694
DE GROOT, SHIRLEY	407
DE JAGER, BILL	152
DE YOUNG, DAVID	1398
DEANDE, ROBERT	547
DEARING, WENDY	1640
DEDEAUX, MARY LYN	938
DEEP SPRINGS COLLEGE	230
DEEP SPRINGS COLLEGE, GEOFFREY POPE	1643
DEFENDERS OF WILDLIFE - CALIFORNIA	90
DEGIORGIO, GARRETT	3333
DELANEY, J.S.	3277
DELANEY, JOHN	3203
DELSUN, M.	1992
DEMARET, KEN	3371
DEMATTIO, MARGARET	3889
DEMOTTO, MICHAEL H.	506
DENNISON, EUGENE	2024
DEPARTMENT OF THE NAVY, ENGINEERING	132
DERKHT, ROBERT	1275
DES BAILLETS, A.D.	1313
DESERT SURVIVORS	1664
DESMOND, PAUL	2071
DESMOND, SHARON	4411
DESPARS, RON	3378
DESSAUER, DOROTHY	183
DESSUOTT, LINDA N.	441
DETLING, VAL	3090
DEVEREAUX, J.	4200
DEVOL, DAVID E.	3667
DEVORE, TIM	571
DEWALD, CHARLES	4384
DEWEESE, MICHELE	1083
DEWEY, DONALD	3099
DEWEY, KRISTI	3367
DIAMOND, BOB & JEAN	1744
DIAMOND, CHRIS	1618
DIAZ, FREDERICK E.	3631
DICKERSON, GARY	4462
DIDION, WILLIAM DAVID	3365
DIETRICH, JOSETTE M.	1510

NAME	ID NUMBER
DIETZ, GLENN	3274
DILLARD, JOE	983
DILLINGER, WILLIAM C.	1010
DILLON, DIANE M.	1836
DIMMICK, STEVE & CINDY	2024
DIMOND, ANN M.	1026
DIMSTER, DAGMAR	3807
DINGER, GLENN R.	3775
DISHION, STACI	1041
DITTMER, HAROLD L.	954
DIXON, CURT	4316
DJ'S SNOWMOBILE ADVENTURES	1104, 1105
DOBBS, DAN V.	4294
DOBLER, DON	3238
DODD, BRETT & LANDFIELD, SUSAN	986
DOLLICK, SUSAN	3840, 3857
DOMAILLE, DENNIS	1728
DOMAILLE, JANE	1727, 4479
DOMINICK, ROBERT	110, 1421
DOMOKOS, D. MICHAEL	3051
DONAHUE, MR. & MRS. KEVIN	2025
DONAHUE, RITA I.	1393
DONAHUE, W.F. JR.	3848
DONAHUGH, BETH	1640
DONALDSON, A.N.	3940
DONALDSON, JAMES	4091
DONALDSON, NORM	4009
DONNALD, CHIP	3104
DONNELLY, DAVE	1618
DONNELLY, DEE A.	3584
DONNELLY, JEAN	1404
DONNELLY, JOHN	3289
DONNELLY, MICHAEL J.	4043
DOOLEY, MICHAEL	2024
DORCETTE, KAT	1888
DORE, PHILLIP	1957
DORFLINGER, DOUGLAS	3605
DOSCH, HOWARD L.	497
DOSKER, SANDY	690
DOSTRE, PAUL E.	509
DOTY, LINDA	1618
DOUCETTI, KAT	1157
DOUGHERTY, CINDY	1057
DOUGLAS, RUTH	1781
DOULE, MATT	3562
DOVERSPIKE, ROGER	3689
DOWNER, CRAIG C.	311
DRAKE, HOWARD O.	3900
DRAKE, STEVE	1640
DRAZAN, DON W.	3050
DRBOUSEK, MARY	512
DREISBACH, D. GORDON	4267
DRESHER, MELVIN & MARTHA	2112
DRISKEL, R.E.	3915

NAME	ID NUMBER
DRIVER, WILLIAM T.	2081
DRLIK, TANYA & MUEHLECK, GEORGE	1582
DU FRANE, ANN	3095
DUBE, KRISTEN BUHLER	3941
DUBE, PAUL J.	5028
DUBE, PHILLIP S.	3686
DUENZEN, DANA	4234
DUFF, FLORENCE	742
DUFFY, JERRY	330
DUITS, CONNIE	2024
DULCO, STEVE	3241
DUNAWAY, DOUGLAS	3638
DUNBAR, J.W.	4355
DUNHAM, DAVID D.	3622
DUNKAN, DAN	1827
DUNLOP, K.	2113
DUNN, DAVID	141, 345
DUNN, MINNIE	1123
DUNN, MR. & MRS. ARTHUR	1127
DUNNE, DEBBIE REDFERN	3923
DUPUIS, PHIL	3275
DURANT, DIANE M.	4282
DURENBERG, MARJORIE	1867
DUROUX, CATHERINE E.	799
DURST, CAROL A.	3783
DURYEE, SHIRLEY A.	2111
DUYSEN, LARRY R.	349
DUZY, KENNETH	1171
DWYER, LAWRENCE A.	1027
E.C. POWELL FLYFISHERS	281
EARLS, PAULINE A.	3750
EARTH FIRST - EASTERN SIERRA CHAPTER	140
EASTMAN, DONALD N.	615
EASTMAN, LISA	4075
EATON, DAVID	48
EATON, DR. AND MRS. JOHN H.	921
EAVES, DOROTHY	1895
EAVES, ELIZABETH T.	2053
EBENKAMP, JERRY	4077
EBERSOLE, LEWIS GENE	466
EBNER, GREGORY P.	2019
ECHGELMEIER, BETTY	388
ECKERT, GREG	818
ECKERT, ROBERT	36
ECOLOGY CENTER OF SOUTHERN CALIFORNIA	39, 61
EDDY, DORIS	3408, 3414
EDELSON, DAVID B.	1649
EDELWEISS SKI CLUB	1241, 1242, 1243
EDINGTON, JOHN	4287
EDWARD, CARROLL E.	656
EDWARDS, E.L.	525
EDWARDS, FRANCINE	3528
EDWARDS, LINDA LEA	453
EDWARDS, ROGER N.	3019

NAME	ID NUMBER
EGAN, RALPH A.	1640
EGGEN, ERIC	3097
EGGEN, FRED	3359
EGGEN, HELEN	3358
EGLE, DANIEL A.	682
EICHARDART, PAUL	1157
EKSTROM, TODD	182
ELANDER, ELEANOR	111, 1407
ELCONIN, KENNETH	3167
ELDER, CATHERINE M.	271
ELFSTEN	4244
ELKIN, HUGH W.	3725
ELLERBY, JERRY	20
ELLIOTT, AUDREY	210
ELLIOTT, D.	1536
ELLIOTT, GARY W.	3868
ELLIOTT, GRADY S.	540
ELLIOTT, GREGORY B.	4055
ELLIOTT, GREGORY LEE	677
ELLIOTT, PAT	1055
ELLIS, DEBBIE	1061
ELLIS, JEFFREY P.	2131
ELLIS, LEON	3434
ELLIS, PATRICIA	3716
ELNES, TOM	4042
ELOWE, ALLEN H.	236
ELY, SHANNON	1640
ENGEL, JUNE	3674
ENGEL, PETER	3115
ENGEL, STEVE	3485
ENGLISH, JACKIE	1972
ENGSTROM, TED	1356
ENTIN, DAVID	5027
EPHIC, JACQUELINE	4237
EPPING, GARY	538
ERICKSON, BOB	1457
ERICKSON, ROBIN L.	1496
ERLICH, ROBERT	128
ERNIE'S TACKLE SHOP, MIKE & E. LOGUE	327
ERNSTMEYER, DON	3081
ERSBAK, CLAUS	3327
ERWAY, DUANE	3948
ESMERALDA COUNTY BOARD OF COMMISSIONERS	486
ESPINOSA, JOANNE	1712
ESPOSITO, RAMONA	3474
EVANS, CARL	4103
EVANS, CHARLES R.	1325
EVANS, JAMES K.	3729
EVANS, LINDA	1198
EVANS, MELANIE	1318
EVANS, PATRICIA	1350
EVANS, R.L.	3014
EVANS, RUSSELL L.	346
EVAUSEN, ALLEN R.	616

NAME	ID NUMBER
EWEN, WELLINGTON A.	3285
FABRE, STEPHEN	1815
FAGER, RICHARD	3510
FAHY, WES	3898
FARMER, LOREN	1240
FARNETTI, JUDY	4147
FARNETTI, THOMAS	4319
FARRELL, MARY	3103
FARRIS, DANIEL	1767
FAUBUS, ELLIS J.	1495
FEATHER, MARTIN	324
FEDERATION OF FLY FISHERS	1776
FEDOR, GARY	2171
FEDOR, JEANIE	1919
FEGER, JANIE	1520
FELANDO, ANTON	3795
FELDIMAN, ROBERT	1996
FELDMAN, ERWIN	3078
FELDMAN, HAROLD	4293
FELDT, CARL	1157, 1888
FELIX, GEORGE M.	280
FELKER, DAVID	5009
FELLA, HENRY	721
FELLOWS, WAYNE B.	1669
FENDON, GERALD A.	1094
FENDON, RANDALL	1189
FERGISON, ADELE	409
FERGUSON, HAROLD	1530
FERGUSON, MARC & CHRIS	1534
FERGUSON, MARY	1518
FERGUSON, RUSSELL	2074
FERGUSON, THOMAS & BEATRIX	1581
FERN CREEK LODGE	1209
FERRIS, PATRICK A.	1434
FERRY, LYLE L.	623
FERTIG, RALPH R.	115
FETHERSTON, B.	3461
FETHERSTON, GAIL R.	1986
FETTERS, HAROLD M.	2142
FETZER, GEORGE H. & DEBORA K.	1884, 3309, 3407
FEY, R. WALTER	64
FIEBIGER, DIETER	4098
FIEBIGER, MARLENE	4100
FILAK, CARRIE	743
FILLER, DORIS	4082
FINDLING, MELANIE	269
FINE, JERRY	1179
FINN, JOHN M.	3514
FINN, MICHAEL	3573
FIORE, MICHAEL T.	3798
FISCHER, ALDA I.	4376
FISCHER, JOHN	736
FISHER, BRENDA	1233
FISHER, CATHY	3085

FISHER, DAN 3231
FISHER, PATTI 3074
FITTS, W.A. 1157, 1888
FITZPATRICK, MARK 727
FLAHERTY, JIM 514
FLAHERTY, MADELYN 1351
FLAVIN, CHARLES 22
FLAVIN, PATRICK 21
FLEMING, DONNA 3012
FLEMMING, OTIS 1640
FLEWELLING, KIP 2154
FLINT, DAVID J. 4250
FLIPPEN, LYNDA 2024
FLOWER, WILLIAM L. 75
FLOYD, JASON 698
FLYNN, GARY; MAYOR OF MAMMOTH LAKES 922, 1891
FOCUS ON THE FAMILY, MIKE YORKEY 1187
FOGEL, MARSHALL B. 4305
FOGEL, RICHARD 1369
FOGEL, MARIETTA 4278
FOGER, CATHLEEN 3808
FOGLESONG, WAYNE C. 4266
FOLEY, TIMOTHY C. 1819
FONTAINE, GARY 3453
FOOTLOOSE AND WINTERSPORT 1017
FORBES, BOB 1760
FORBES, GEORGE T. 568
FOREMAN, MARSHALL L. 2092
FORES, RICHARD B. 1013
FORNE, JOHN 335
FORNEY, RANDY 4334
FORSGAARD, KARL 1554
FOSTER, BRADLEY S. 816
FOSTER, GORDON T. 1236
FOSTER, ROBERT J. 1745
FOWLER, GEORGE S. 552
FOWLER, SEAN 3318
FOX, ARCHIE & BARBARA 2024
FOX, JIM 4306
FOX, LINDA 653, 659
FRANCIS, BURKE 3927
FRANCIS, MARC 2045
FRANKLIN, THEODORE 1707
FRASER, CHARLES H. 1670
FREDENDALL, DORIS H. 358
FREDERICK, J.D. 4366
FREDERICK, R. 3722
FREEBURN, JOYCE K. 1317
FREEMAN, CHERI 1640
FREEMAN, RANDALL 3400
FREESTED, W.C. 3936
FREILICH, LARRY 341, 2185, 2203
FRENCH, BERT 3681
FRENCH, RICHARD 1640

NAME	ID NUMBER
FREUDENTHAL, SHERRY	3200
FRIEDRICHS, EDWARD C.	3665
FRIEL, HENRY J.	14
FRIENDS OF THE INYO	2170
FRIMMEL, FRANK G.	3323
FRIMMEL, MARIA E.	3296
FRINCKE, ANNE	3886
FRINCKE, RICHARD	2145
FRITZ, ROBERT J. JR.	3824
FRONTINE, MICHELE	1640
FROST, ROGER D.	3321
FRUITT, VIRGINIA A.	4199
FRY, THOMAS K.	383
FRYXELL, DONALD C.	1276
FUELLING, THOMAS N.	4106
FUJISAKI, MISAKO	3749
FULKENSON, DAN	217
FULLER, JOHN A. & YVONNE	1114
FULTON, MARK	3030
FUNTSCH, JOHN A.	3618
FYKE, JAMES	3164
GAABO, ALAN	4139
GABRIEL, ALFREDO	3854
GACHO, STEVE	1640, 4382
GADDY, DENNIS W.	2024
GAFFNEY, BRIAN	44, 266
GAGE, MIKE	1599
GAINER, WELDON	772
GAINES, DAVID	1548
GALAZ, ROBERT L.	3960
GALAZ, VALERIE	4233
GALBREATH, CHRISTINE	4432
GAMBINA, RALPH J.	3604
GAMBLE	1640
GAMMELL, H.W.	3173
GANONG, BARBARA L.	4312
GANONG, R.A.	3717
GANZ, EDWARD	3236
GARAMENDI, JOHN	1978
GARCIA, CANDY	4331
GARCIA, GILBERT	3933, 3978
GARDNER, ANN MARI	4115
GARDNER, BERT	4356
GARDNER, DAVE	4405
GARFIELD, HAROLD T.	4288
GARNER, ROBERT	1549
GARRETT, DICK	3817
GARRETT, JIM	3850
GARRIGUE, GARRY F.	3550
GARRIGUE, MARTHA L.	3597
GARRISON, STUART H.	4299
GASE, GARY M.	1936
GASTELUM, JOE M.	4440
GASTON, LYLE K.	2157

NAME	ID NUMBER
GAUTLER, MARIAN & MELVIN	960, 1366
GAXIOLE, LYDIA	893
GEBHARDT, DAVID G.	3479
GEDANKEN, JAY	3757
GEDDY, ELAINE	2024
GEDVILLAS, TED	1733
GEERDES, ELAINE	3312
GENERAL TELEPHONE COMPANY OF CALIFORNIA	1287
GENETTI, CATHY	4
GENSON, KATHERYN	3328
GERENRAICH, KEN	3218
GERL, BOB	438
GETTLEMAN, MEL	206
GETTY, LEONARD	1001
GETTY, ROBERT C.	3555
GHIGLIERI, DENNIS	2091
GIEMAN, GERALD	1640
GILBARD, LAURA N.	3495
GILBARD, STEVEN I.	3493
GILBERT, ARTHUR C.	340
GILBRAITH, JACK J.	4313
GILCHRIST, BETTY	2195
GILCHRIST, GUY R.	619
GILL, HELEN	3974
GILL, JAMES M.	31
GILL, JIM	915
GILL, JUNE M.	494
GILLEM, CHRIS	963
GILLEN, AMY	1477
GILLILAND, ROBERT J.	3860
GILMORE, PETER	1618
GILROY, GREG	1640
GIRCH, ROBERT M.	3016
GITLEN, HOWARD	3770
GITT, A.P.	326, 4119
GIULIANI, DERHAM	431, 910, 971
GIWKEL, L.F.	4272
GLADDING, C.W.	3487
GLADISH, DEBBIE	2024
GLADSTONE, D.	3248
GLASS, BURTON S.	3619
GLAZOV, JORDAN	740
GLEICHER, ALAN	3256
GLENDE, RONALD L.	685
GLENN, RAY	3549
GLOVER, E. ANNE	4398
GLYN, BILL	1640
GOBERMAN, ISIDORE	3244
GODDARD, MRS.	373
GODDY, DENNIS SR.	2024
GODFREY, MICHELE	888
GOEMKAN, MARTI	1157
GOETHALS, LESLIE A.	961
GOETZ, LARRY	2159

NAME	ID NUMBER
GOFORTH, DWAIN	991
GOFORTH, GREG	585
GOITLANDIA, RAY	1721
GOKA, JANICE L.	3302
GOLDBERG, DAVE	191
GOLDBERG, JAN	1464
GOLDBERG, PAUL	701
GOLDEN, CHERYLINN	3712
GOLDER, STEVE	4481
GOLDMAN, RON	246
GOLDSMITH, MARTIN	937
GOMER, BOB & WINNIE	1146
GOMEZ, ART	1640
GOMEZ, GARY	1640
GOMEZ, PABLO D.	4361
GONSETT, JUDITH	3207
GONSETT, R.& G.	3160, 3615
GOOD, JOHN	749
GOOD, MADALENE K.	1247
GOOD, RICHARD L.	554
GOODALE, DON & JOE	926
GOODALL, CHRISTINE	2151
GOODELL, D.	802
GOODMAN, LAWRENCE	4070
GOODMAN, MARTY	31
GOODWIN, MARY KAY	4269
GOOLH, PAT	202
GOPSON, KIM	1640
GORBET, JAMIE	2
GORDON, DOUG	5029
GORDON, MARK	1640
GORE, GEORGE	3998
GORMAN, MICHAEL J.	1237
GORMAN, TED	4191
GORSKI, MARGARET	1099
GOSSARD, FOSTER E.	3506
GOTTLIEB, JOYCE	3761
GOULD, RICHARD	3121
GOULLER, SEAN	1640
GRABER, ELIZABETH GOODRICH	2138
GRAEF, URSULA	579
GRAHAM, MICHAEL	1626
GRAMCKO, BONNIE & JAMES R. SR.	909
GRANT, SHERI	3968
GRAUSS, PHILLIP E.	3709
GRAVES, D.H.	3018, 3027
GRAVES, GLENN W.	3793
GRAVES, LEROY J.	1886
GRAY JANICE	500
GRAY, CHRIS	759
GRAY, DAVID S.	65
GRAY, DAVID S.	15
GRAY, DUANE W.	4242
GRAY, HOWARD	2146

NAME ID NUMBER

GRAY, JOSEPH C. 643
GRAY, LINDA 1381
GRAY, MARGARET F. 1924
GREALEAF, B.B. 2024
GREEN, GLORIA 251
GREEN, HELEN A. 1841
GREEN, HILTON A. 3720
GREEN, JOSEPH A. 3544
GREENBERG, ALVIN 1514
GREENBERG, STANLEY 4062
GREENLEAF, ANNA 2061
GREENLEAF, JAMES O. 632
GREENSFELDER, SARA 16
GREGG, PATRICIA A. 529
GREGG, BRUCE R. 528
GREGORY, CARL D. 58
GREILICH, SUSAN 2077
GRENOBLE, DALE E. 3746
GRIBBEN, MARGARET J. 4368
GRIFFIN, ARTHUR 3520
GRIFFIN, BURTON 4295
GRIFFIN, DENNIS 3143
GRIFFING, TOM 317
GRIFFITH, LEE V. 313
GRIFFO, LINDA B. 5032
GRIJALVA, ELLEN WOOD 95, 398
GRIMA, ALEX 1946
GRIMES, STEVE 4468
GRIMM, ROBERT 4308
GRIMSLEY, JERRY D. 1394
GRIMSLEY, MARY L. 1203
GRINDELWALD SKI CLUB, GLEN FRYELL 6006
GRISEL, TONY 2024
GROENVELD, DAVID P. 6007
GROSS, ELIZABETH 4074
GROSS, L. 488
GROSS, ROBERT 4020
GROSSMAN, FRANKLIN B. 445
GUALTNEY, BARRY 1640
GUERNSEY, LYNDA J. 1157
GUERNSEY, TIMOTHY 1157
GUERRE, PATRICK J. 544
GUESEL, LORAINE 2024
GUFFEY, RODGER W. 3060
GUIDRY, PRISCILLA L. 3908
GUIDRY, RAYMOND J. 3630
GUIDRY, RON 3397
GUITON, LEONARD A. 3963
GULLIKSEN, JAN 804
GUMM, TIMOTHY 819
GUNTER, NICK P. 1204
GUSTLIN, PHILLIP R. 984, 3286
GUSTLIN, SUSAN I. 1551
GUTIERREZ, RICK 862

NAME	ID NUMBER
GUTIERREZ, RITVA	4090
GUY, BARBARA	1157
GUZMAN, BERNIE	1221
GWINN, JENNY	4380
GWINN, MARGARET H.	1523
HAASE, W.	3125
HABURA, DREW	694
HADDEN, DAVID RODNEY	416
HADENFELDT, DENNIS	1938
HADLEY, HENRY L.	3627
HAGE, DAVE A.	2024
HAILEY, S.W.	3088
HALEY, JACK W.	3346
HALL, CAROLYN	1149
HALL, KERRY	689
HALLAND, MR. & MRS. KENNETH	1335, 3587
HALLEE, MARK	483
HALVERSON, LORRAINE	1022
HAMDEN, DAVID, MARILYN & ROBERT	1256
HAMELTON, K.L.	2024
HAMILL, PATRICK S.	4249
HAMILTON, O.T. JR.	1769
HAMILTON, PHIL	4016
HAMILTON, STEVE	3727
HAMILTON, TONY	3199
HAMILTON, VICTORIA	2209
HAMMAN, J.G.	2024
HAMMOND, GERALD E.	3498
HAMMOND, RIC	1403
HAMMOND, TAMMY	347
HAMMONS, ARTHUR	4006
HAMPTON, BRUCE	423
HANAUER, FRANKLIN A.	4138
HANCOCK, JIMMY	1049
HAND, LINDA M.	2024
HANDS, KATHY	6008
HANEY, TOM	3249
HANFORD, LYNNE	3625
HANFT, STEVEN M.	3026
HANKINS, DONNA	1086
HANKS, FRED	3906
HANN, LARRY	4343
HANNA, JOSEPH W.	3237
HANNAH, JAMES & JENNY	1888
HANNAH, JOE	1157, 1888
HANNAH, JUDIE	1157, 1888
HANNAH, SHERMAN A.	31
HANNAN, CHARLOTTE M.	1624
HANNAN, JOHN C.	1569
HANSEN, DON	3263
HANSEN, J.W. JR.	3864
HANSEN, KATHLEEN A.	1314
HANSEN, MARCY	2116, 4127
HANSEN, SHIRLEY	3838

NAME	ID NUMBER
HANSON, H.E.	1918
HANSON, LLOYD B.	2056, 3669
HANSON, SCOTT J.	994
HANSON, T.A.	4036
HARBESON, CHARLOTTE	933
HARCOURT, F.L.	851
HARDEBECK, JEAN	1085
HARDER, THOMAS J.	2038
HARDIN FAMILY	1399, 1408, 1757, 1758
HARDY, DAVID	2000
HARDY, JEAN	213
HARDY, MICHAEL A.	2133
HARFMAN, JOHN C.	31
HARGREN, CONNIE	6009
HARLAN, BETTY	785
HARLAN, JAMES G.	1210
HARMAN, JAMES L. & SHARON B.	974
HARMON, ROD	3612
HARMS, LISA	1087
HARPELL, GAYLE	3735
HARPER, JOHN D.	1711
HARRINGTON, BRUCE	3769
HARRINGTON, JAMES G.	1164
HARRIS, BEATRICE	1888
HARRIS, BRUCE	3230
HARRIS, DAVID L.	1096
HARRIS, ERIC JON	4040
HARRIS, HELEN N.	4000
HARRIS, J.A.	2123
HARRIS, JOE	3153
HARRIS, ROBERT D.	828
HARRIS, SARA	60
HARRISON, GARY	738
HARRISON, RAYMA	1537
HARRISON, ROBERT	3922
HARRYMAN, R.	3467
HART, JOYCE	1698
HARTMAN, DENNIS	3112
HARTMAN, FRANCES	1157
HARTMAN, G.V.	587
HARTMAN, JANE	886
HARTRY, ROY	3764
HARTWEG, PAMELA	2109
HARVEY, JOHANNA	1941
HARVEY, PETER	3451
HARVEY, WILLIAM	1958
HARWOOD, WENDY	651
HASSLER, SUE	4259
HASTER, MONTE	365
HAWKINS, COLE	108
HAWKINS, DALE W.	228, 990
HAWKINS, HOWARD V.	33
HAWLEY, BRIAN N.	1740
HAYDEN, DENISE M.	3545

NAME	ID NUMBER
HAYDEN, GREGORY	4107
HAYDEN, MARILYN	2120
HAYE, STAN	1911
HAYES, BILL	1357
HAYES, JOHN B.	1687
HAZEL, RON	1814
HEARD, HOWARD	1680
HEARST, MICHAEL C.	3929
HECKMAN, DONALD	3193
HEDRICK, WILLIAM	4443
HEFFERLY, GERALD E.	3787
HEFTER, GERALD	2066
HEFTER, LOUISE	2066
HEID, MARY KAY	3762
HEID, THOMAS L.	1392
HEIDEMAN, ROBERT C.	4438
HEIDENWAG, BRUNO	4060
HEIMLER, JAMES	26
HEIN, MARTIN	593
HEINRICH, PETER	4489
HELLER, CLARENCE	1927
HELM, FRANK M. JR.	1897
HENDERSON, DR. & MRS. ROBERT	3664
HENDRY, ALEXANDER D.	3730
HENERY, BILL	1338
HENKES, HOWARD J. & MARJORIE	156, 1004
HENN, LIN	4416
HENN, RANDY	3424
HENRY, ANNETTE	1640
HENRY, BILL	143, 4482
HENRY, CONSTANCE	4027
HENRY, JACQUELINE	3588
HENRY, K.	247
HENRY, MARY ANN	381
HENRY, MICHAEL & CINDY	3594
HENRY, RONALD A.	382
HERBOLD, A.	4437
HERBOLD, VIRGINIA M.	4341
HERBST, DAVID B., PH.D	1271
HERCKT, JUDY A.	3946
HERENDEEN, PAUL	3123
HERLIHY, WARREN & ZOE	1034
HERMAN, RONALD	3786
HERNANDEZ, RONALD S.	691
HEROLD, BETTY	3455
HERRING, ROBERTA	612
HERRON, RUTH	3830
HERSEE, LEIGH	4052
HERSON, PAT	3374
HERTZ, LISA	2024
HERTZOG, STEPHEN	4095
HERZOG, MICHAEL J.	3707
HESLEP, CHRISTY L.	1056
HESS, BRIAN	859

NAME	ID NUMBER
HESS, JOHN	1467
HEWITT, RICH	1029
HEYLEK, GERALD E.	4365
HICKEY, ED	1959
HICKIE, LIANNE	88
HICKMAN, ISABELL K.	254
HIEATT, CHRIS	3141
HIEATT, KIM	3142
HIGERTY, MICHAEL B.	1926
HIGGENBOTHAN, WILLIAM DANIEL	1157
HIGGINBOTHAN, PAUL DEAN	1157
HIGH DESERT SNOW DRIFTERS INCORPORATED	99
HIGH SIERRA SPORTS INCORPORATED	931
HIGH SIERRA STOCK USERS ASSOCIATION	1666
HIGH, RON	1640
HIGHT, JOHN	4122
HIGLE, TED	1058
HILBY, GERALD M.	3647
HILES, RON H.	1920
HILL, B.	412
HILL, BARBARA	208, 3502
HILL, C. DICKSON	1162
HILL, DAVE	876
HILL, MR. & MRS. DONALD C.	1527
HILL, EDMUND	3533
HILL, J.& E.	3229
HILL, MARTIN	1196
HILL, WALT	332
HILL,.JOHN V.	3471
HILMAN, ROBERT	1969
HILTON, PATRICIA	739
HINCHLIFFE, STEPHEN F.	3481
HINDS, DAVE	1138
HINE, GORDON	972
HINSON FAMILY	394, 1478, 1479, 1480
HINZE, JULIA L.	897
HINZE, LOWELL A.	153, 853
HIRSHFELD, LEO	3083
HIRSHSON, MARY E.	3519
HOBAUGH, CAROL	442
HOBBS, LEONARD	4028
HOBSON, RICHARD N.	4252
HOCHSTAFL, SHANNON	1081
HOCKING, GLORIA	2024
HODGES, JUNITA	1888
HOEFNER, GERALD A.	4442
HOFFMAN, HAROLD	444
HOFFMAN, JEFF	331
HOFFNER, JOHN	1868
HOFFNER, VIRGINIA	377
HOFMANN, WALLY & SANDI	3539
HOGG, NORMAN D.	2167
HOLLADAY, KEVIN	1177
HOLLAND, HOWARD	1199

NAME	ID NUMBER
HOLLAND, PATRICIA J.	1578
HOLLAND, WILLIAM A.	343
HOLLON, GARY	711
HOLLOWAY, JOHN	2024
HOLLOWAY, ROBBIE	2024
HOLMES, VICKI M.	3814
HOLSHUH, H.J.	1984
HOLST, AMY	1476
HOLSTROM, J.A.	3534
HOLTAN, PATRICIA	84
HOLTON, DAN	507
HOLTON, HOLLY	635
HOLTZ, WILLIAM R.	1315
HOOD, ED	2184
HOOK, DAVID D.	198
HOOK, HOYT & BETTY	323
HOOK, JEANNE L.	474
HOOPER, JOHN W.	729
HOOVER, VICKY	1320
HOOVER, VICTORIA N.	2035
HOOVER, VIRGINIA	4463
HOPEWELL, RUSTY & CHUCK	901
HOPKINS, MR. & MRS. ROBERT	2010
HOPPER, L.J.	1507
HORN, WILLARD	1020
HORTSINA, TODD	1810
HOSTETTER, VIVA	1640
HOUGLAND, ROGER	3052
HOUTS, MARY VIRGINIA	3015, 4218
HOWARD, CLOYDE P.	1850
HOWARD, MICHAEL	1640
HOWARD, ROY	1962
HOWARD, WILLIAM	3765
HOWE, GENE	3741
HOYLE, MARGARET	3733
HOYT, JOSEPH & TERILYN	2024
HRONEK, PAUL	573
HUBBARD, JOANNE	2111
HUBBARD, SCOTT	1889
HUBBS, DEL	1193
HUBE, MELBA F.	2147
HUCHEL, JOANNE	4123
HUDSON, ARLENE	1451
HUDSON, FLOYD & CONNIE	1132
HUDSON, KENNETH J.	5008
HUDSON, ROBERT C.	3113
HUEBSCHER, FRED	1813
HUFFMAN, D.F.	4247
HUGHES, EDWARD F.	2032
HUGHES, ELDEN	1802
HUISKEN, KIM	5005
HUMMEL, RON E.	3999
HUMPHREY, GREGORY E.	560
HUMPHREY, JOHN E. & EVELYN P.	2024

NAME	ID NUMBER
HUMPHREY, LAURA	4478
HUMPHRIES, BRETT	533
HUNSICKER, LEONARD M.	2098
HUNT, M. BYNG	227
HUNT, NITA M.	3381
HUNTER, DORA	2024
HUNTER, DOUG	3979
HUNTSINGER, FRITZ R.	1753
HURLEY, DAVID	1746
HURST, DAVE	4471
HUSTAD, PETE	1
HUTCHINSON, LEONARD R.	3382
HUTCHINSON, LORRAINE	3391
HUTSON, CHRISTINA K.	3773
HUTTON, DEE	1546
HUTTON, MRS. FRANK	319
HUTTON, WAYNE	1363
HYDE, DAN	1640
HYITA, GEORGE & CHARLOTTE	2024
HYVREN, KAARLO M.	3788
IACOBUCCI, BECKY	4441
IKEMOTO, SAM	3841
IMADA, DALE T.	3876
INGALSBEE, NANCY J.	1853
INGWERSON, JACK L.	3861
INKELIS, STANLEY H.	4231
INNIS, JAMES W.	3792
INOUYE, WAYNE W.	3682
INTRAVARTOLO, PAUL V.	3370
INYO CITIZENS FOR RESOURCES AND ENVIRONMENT	2048
INYO COUNTY BOARD OF SUPERVISORS, CAMPBELL	352
INYO COUNTY ADMINISTRATOR, BRENT WALLACE	285
INYO COUNTY CATTLEMEN'S ASSOCIATION	265
INYO COUNTY PLANNING DEPARTMENT, DEHART	135
IVERSON, WAYNE D.	5
IVIE, LAUREL	2024
JACEWICZ, E.J.	4262
JACKS, PHIL	363
JACKSON, DAVID W.	3621
JACKSON, DENNIS	1547
JACKSON, PAUL T.	3477
JACKSON, THOMAS J.	4151
JACOBSON, TODD	3379
JAEGAR, PAT	549
JAEGER, LISA	2115
JALI, RICK	76
JAMES, GARRETT B.	3093
JAMES, LISA	1475
JAMESON, PAUL	4406
JANES, LOREN	877
JANK, MARY	192
JANISSE, ERIC	871
JANOWILZ, PETER F.	3553
JARELY, HEATH	1888

NAME	ID NUMBER
JARNLIN, HELEN	1906
JEFFRIES, FLORENCE R.	241
JEFFRIES, PATRICIA	3084
JEFFS, ANN C.	4076
JELLISON, KERRY	1956
JELLISON, ROBERT	1964
JELTON, THOMAS	3885
JENCKS, JILL HORNER	1942
JENCKS, MICHAEL R.	2180
JENKINS, CYNTHIA	752
JENKINS, GEORGE	731, 1726
JENKINS, RUBY JOHNSON	1376
JENKINS, THOMAS H.	3595
JENKINS, THOMAS M. JR.	1245
JENNINGS, JAYNE	4285
JENNISON, GREG	3561
JENSEN, BRUCE H.	329
JEROSLOV, BERNARD	1905
JETTON, THOMAS	6010
JOACHIM, GARY	4419
JOHN (UNREADABLE)	1640
JOHNS, BUD & ANITA	2024
JOHNS, MARK	1386
JOHNSON, APRIL	1048
JOHNSON, BENNETT	1414
JOHNSON, BOB	1216
JOHNSON, BRUCE	1504
JOHNSON, DALE F.	1875
JOHNSON, DANNELL	359
JOHNSON, DENNIS M.	468
JOHNSON, DIANE A.	3548
JOHNSON, E.	1543
JOHNSON, ERIC S.	151
JOHNSON, GORDY	1640
JOHNSON, HAP	3590
JOHNSON, HERB	3440
JOHNSON, HOWELL	527
JOHNSON, JIM	941
JOHNSON, KAREN	953
JOHNSON, KENT C.	82
JOHNSON, LAURIE	3351
JOHNSON, MARTHA	1282
JOHNSON, NORMAN	1024
JOHNSON, STEPHANIE	2024, 6011
JOHNSON, WES	873
JOHNSTON, GARY	706
JOLLEY, MALCOLM G.	3690
JOLUT, J.	384
JONES, ANDREW	287
JONES, C.M.	868
JONES, CARL	3626
JONES, CYRIL	793
JONES, ELLEN	1703
JONES, ERIN	116

NAME	ID NUMBER
JONES, JACK W.	4424
JONES, JANICE	758
JONES, JEREMY	4037
JONES, LEWIS	3059
JONES, MILTON	673
JONES, PETER	2033
JONSSON, RICH	607
JORDEN, ROBERT	4063
JORGENS, DOROTHY	4290
JOSEPHSON, BRUCE M.	1898
JOSLEN, DAVID E.	3271
JOYMT, DON	895
JUAREZ, LESLIE A.	3673
JUDKINS, KAREN M.	1207
JUDSON, EVA	2062
JUERGENS, RUTH	1640
JULL, ANDREW D.	4003
KABISCH, SALLY	1606
KAFROUNI, GEORGE	765
KAHLER, JODI	3649
KAHN, LARRY	4235
KAISER, MIKE	1602
KAISER, ROBERT	1907
KALICK, PETER	3676
KALIVODA, JEANNIE	129, 1616
KALK, WARREN	676
KALMPFER, SUSAN	219
KAMAURA, WAYNE	3194
KAMISHER, GARY	1683
KAMOLA, R.	596
KANEGAYE, JACK Y.	4277
KANEGAYE, YUKI	830
KANGERS, JAMES A.	1014, 3338
KANNE, ROBERT M.	1539
KANTOR, JERI	4153
KANTOR, STEVEN M.	4154
KAPPELMAN, JAMES	2024
KAPPELMAN, TRULA	2024
KARBOWNIK, ROMUALD	1824
KARE, W. DOUGLAS	1857
KARJALA, ROBERT	3628
KARPELES, MARY	496
KARPINSKI, WALT	4279
KASER, WILLIAM H.	194
KASSIDY, KARL J.	3228
KAWALER, LARRY	336
KAWEAH FLYFISHERS, ROD ALEXANDER	1248
KAY, HOWARD E.	4256
KAZMER, VICTORIA	791
KEEHN, KAREN M.	672
KEELER, DANNY	1157, 1888
KEHUS, KEVIN	1042
KEISER, FRANK	4399
KEITH, CHRISTOPHER	4161

NAME	ID NUMBER
KEITHLEY, AUSTIN	930
KEITHLEY, FORREST	1668
KEITHLEY, KEVEN	1078
KELBERLAU, BARBARA	2117
KELEMEN, DOLORES	589
KELEMEN, HENRY	591
KELLEY, ALBERT J., SERRANO SCHOOL	1890
KELLEY, BARBARA	980
KELLEY, BILL	1710
KELLEY, ROBERT J.	401
KELLOGG, TIM	1657
KELLY, JIM	2024
KELLY, MARK	1640
KELLY, MIKE	835
KELLY, TOM	3878
KEMPER, SUSAN M.	3543
KENDALL, RICK	2084
KENDRICK, JULIET	1695
KENNEDY, ERIN	1052
KENNEDY, RICHARD	1157, 1888
KENSER, MARCELLA	2024
KENSER, SHERRY	2024
KENT, MICHAEL A.	4330
KEOSKI, COLLEEN	3317
KEOUGH, DANIEL E.	717
KERCHENFAUT, KEN	334
KERCHENFAUT, SUE	995
KERMODE, ROBERT E.	1879, 4152
KERN, JACK	3926
KERR, JOE	2020
KERSTEN, ANN	2020
KERSTER, GEORGE	3832
KETTENBURG, WOLFGANG	2111
KEYSER, JOAN	3165
KEYSTONE RESORT	2013
KEZAR, RONALD	493
KIEFER, WILLIAM	4221
KIHALOTTA, ANTHONY J.	3350
KILEY, STEVEN R.	3464
KILGORE, SAM C.	1070
KILGORE, SHAWN	1065
KILLPACK, SHERRY	2085
KILMER, LORI L.	3402
KILROY, RUTH & GENE	3101
KILTING, ORLENE	1691
KIM, TIMOTHY	367
KIMBALL, JOHN D.	4320
KIMBERLING, ROBERT	1785
KINCSES, STAN	3404
KING, GREG	157, 1483
KING, JAMES	1160
KING, JOHN	3678
KING, PAT	735
KING, RICHARD D.	4433

NAME	ID NUMBER
KING, THOMAS A.	3695
KING, TOM	1139
KINGFISHER FLOAT TRIPS	96
KINGSLEY, NORMAN	386
KIPLINGER, P.R.	4280
KIREN, SUSAN	1573
KIRK, JANE	261
KIRK, JESSE	3851
KISH, MICHAEL J.	4206
KITCHENS, DON L.	4423
KIVETT, KEIGAN	43
KLABACHA, JOHN J.	3852
KLARIS, PETE	2052, 3672
KLEE, LAURA	2024
KLEINRATH, KEVIN M.	3654
KLINE, DON	555
KLINGER, DAN	1759
KLINK, WILLIAM P.	625
KLIPEL, PAT	2024
KLUG, BOB	1098
KLUG, RICHARD	2051
KLUSSMAN, WILLIAM P.	1371
KLUTH, PAUL	400
KNAPP, ERIC	1011
KNAPP, ROLAND A.	315
KNAPTON, DOUG	3993
KNECHT, R.H.	4477
KNERR, ED	3080
KNIGHT, DAVID	4110
KNONG, ASHLEY	406
KNOPF, DAVID	3494
KNOPF, SANDRA J.	3819
KNOTTS, ED	4498
KNUTSON, ROLF	4392
KNUTZEN, ARLENE	446
KOCH, L.	286
KOCH, W.O.	410
KOCISKO, ROBERT J.	478, 4214
KODAMA, HUGH	3724
KOELSCH, SHARLENE	684
KOENIG, DONALD F.	3540
KOENIG, ROBERT	4466
KOENIGSBERG, JANIE	5010
KOEPP, WILLIAM & GAYE	6
KOEPSELL, C. GEORGE	4304
KOESTER, JEFF	761
KOFOD, ELAINE	1715
KOHLHASE, NEILL W.	3982
KOLLER, STEVE	1640
KOPOD, ELAINE	1701
KOPPENAAL, T.J.	418
KORNBLATT, MELVIN B.	4088
KORNGIEBEL, JENNIFER M.	1080
KORNGOLD, ANTOINETTE G.	67

NAME	ID NUMBER
KORNGOLD, RALPH	59
KOSELKA, WILLIAM J.	880
KOWAR, COLE B.	1461
KRACHER, STANLEY G.	3468
KRAMAN, JOE	3985
KRAMER, MARTHA	3987
KREN, MARVIN	1914
KRENTZ, LEONARD	899
KRIESEL, BILL	1773
KRITZ, LEROY AND BEVERLY	520
KROHNCKE, KENNETH & RUTH	97
KRUGER, DAVID	1735
KRULIKOWSKI, CLAIRE	3635
KRUSON, V.	408
KUCERA, THOMAS E.	2129
KUCHLER, NANCI	2024
KUGHMAN, L.	2024
KUHN, LIDIA MANSON	998
KUPPENS, DEBORA	670
KURASHIGE, GARY	708
KURNICK, HERBERT	3322
KUSELL, FRED W.	3383
KUSMUMOTO, SCOTT	707
KUTAKEY, BENJAMIN C.	31
KUTZEN, SHERIAN	2022
KVAAS, RONALD A.	83
KVAMMEN, KEN & SUZY	966
LA BELLE, ELLEN	1274
LA FOND, CHERYL	3220
LA MAGNA, BETTY	2158
LACEY, JOHN W.	316
LACKEY, JAMES H.	530
LACY, CHRIS	2095
LACY, ROBERT	3147
LADD, JOAN	3215
LADD, M.H.	2003
LADEN, WILLIAM J.	106
LADINIG, BEA	1092
LADINIG, HEIMO	1766
LAFEE, KATHLEEN	603
LAFEE, WILLIAM	602
LAFRAMBOISE, GERRY	3608
LALINSPACH, MARIANNE	3583
LAMBERT, DAVID	1040
LAMBERT, MICHAEL ELDON	1550
LAMELA, SUSAN	1453
LANDAKER, BECKY	559
LANDON, PAM	1856
LANDSMAN, STANLEY J.	378
LANE, KENNETH S.	2058
LANGER, BROCK	1829
LANGFORD, MARK C.	31
LANGLEY, JIM	2127
LANGLO, TROY	668

NAME	ID NUMBER
LANOUE, MICHAEL	1541
LARKIN, ROBERT L.	480
LARSON, H.F.	4097
LARSSON, LYNDALL	3299
LASKO, ALLEN	3442
LAU, KAY	3292
LAURIN, ROBERT	550
LAVIGNE, AL	3473
LAVOIE, THEODORE	3161
LAWLESS, TAMMY	1051
LAWTON, JERRY	1308
LAWTON, THOMAS J.	3399
LAWYER, DAVID S.	1316
LAYTON, DENNIS R.	4427
LAYTON, MARK	3829
LAYTON, NANCY A.	3938
LAYTON, STACEY	3476
LE BLAINE, MARY	2001
LEACH, JENNY	1953
LEAR, V.L.	3106
LEAVITT, RANDALL	1655
LEDEL, M.	3551
LEDET, BARBARA	3680
LEE, DARCY	1249
LEE, GRETCHEN G.	433
LEE, PAT	1640
LEE, PRESTON R.	436
LEE, SARAH S.	1425
LEE, SUSAN	1640
LEELING, ED	207
LEFEVER, TIM	3894
LEFF, STEVE A.	3774
LEGG, JAMES H.	3212
LEHMAN, JEANNE	904
LEHOTSKY, RALPH B.	3842, 3937
LEIN, LARKETTE	1009
LEJNIEKS, RICHARD M.	1656
LEMD, MONTE C.	2024
LEMMON, BOYD W.	505
LEMMON, MARY K.	3240
LEMPART, GEORGE E.	1793
LEMPORT, MAGDA	1593
LENDERKING, HOLLIS	2164
LENZ, LOUIS D.	608
LENZ, ROBERT C.	3973
LEOGIS, CINDY	2024
LEON, DAMIEN J.	3598
LEONE, JOHN	473, 3336
LEONG, ROBIN	1794
LEROY, MARK	1640
LESPERANCE, JAMES	657
LETTUNICH, W.J.	3235
LEUSCHNER, ALISON	4307
LEVIN, BRUCE A.	3478

NAME	ID NUMBER
LEVINE, BERT R.	1787
LEVINE, HANK	1202
LEVINE, RICHARD	3372
LEWELLAN, TONY	3086
LEWIS, CHRISTOPHER	1685
LEWIS, DONALD	1955
LEWIS, GARY D.	562
LEWIS, GORDON H.	3460
LEWIS, KATHRINE	259
LEWIS, RICH	4186
LEWIS, TERRY ANN	2024
LEWIS, THOMAS E.	1359
LEYDECKER, AL	1862
LIBKIND, MARCUS A.	50, 175
LICHTMAN, MARK	4046
LIEB, MARGARET	958
LILDER, KATHY	1116
LIND, CARL W.	642
LIND, RICHARD H.	1220
LINDA, LAUREN	1435
LINDBLOM, CELIA	934
LINDBLOOM, CHRISTY	1045
LINDE, BARNIE E.	1499
LINDELL, CHRIS	2122
LINDER, E.	139
LINDGREN, RICHARD B.	3912
LINDGREN, SUSAN	2114
LINDNER, C.E.	465
LINDSEY, ERICA J.	3108
LINDSEY, GLORIA	2024
LINDSEY, KRISTINA	848
LINES, RALPH O.	790
LINK, ROGER M.	526
LINSK, J.	3662
LINZER, JEAN	939
LION, STEVE	1257
LIPPMAN, HERBERT M.	4495
LIPPUNER, LIZ	710
LITMAN, DR. & MRS. RICHARD J.	366
LITTLE, GEORGE	720
LIUDZIUS, ANTHONY	374
LIVERMORE, JIM	45
LIVINGSTON, TIM	464
LIZZA, CHRIS O.	461
LIZZA, M.	3185
LIZZA, TIBERIO P.	4113
LLOYD, HAROLD	3486
LO CICERO, DIANE	439
LOBER, RICK	4002
LOCKE FAMILY	3409, 3411, 3412, 3413
LOCKWOOD, LYNDA	220
LODER, SAM	1157
LOEHER, LARRY	1777
LOEWEN, HEINZ	3234

NAME	ID NUMBER
LOHMAN, ROWLAND G.	788
LOMBARDO, ELIZABETH	3075
LONDON, CRAIG	1261
LONDON, MARJORIE	1645
LONES, DAIN B.	3, 959
LONG, DEBBIE	3457
LONG, FREDERICK & DIANA	1840
LONG, WENDELL B.	184
LONGTIN, ANN A.	3826
LOOK, TOM	4484
LOPER, PEGGY	1450
LOPEZ, ALAN	1885
LORENTZSON, RON	513
LOS ANGELES DEPARTMENT OF WATER & POWER, BUCHHOLZ	1093
LOS ANGELES VALLEY COLLEGE, KRAUSS, W.T.	307
LOUIE, MR. & MRS. R.	4275
LOUISIANA PACIFIC CORPORATION	1636, 2206
LOVE, GEORGE & DONNA	1157, 1888
LOVELACE, LEERA	1676
LOVELAND, R.J.	611
LOWE, WILLIAM	3281
LUCAS, RALPH	4396
LUCIAN, TERRY	872, 1640
LUCKHAM, ELISE J.	3036
LUEDERS, LYNNE	3128
LUIPPOLD, RICHARD	1156
LUIS, DOUGLAS	703
LUPACCHINI, RAY	3532
LURIDSO, VIVIAN	1157
LUSCOMBE, PAM	168
LUSE, JAMI L.	3513
LUSTIGFORD, NOEL	4292
LUTGE, ROXANNA	889
LUTH, PERRY A. JR.	1620
LYLE, GREG	4472
LYLE, ROBERT C.	3751
LYNCH, JAMES	3883
LYNCH, KIRK	3607
LYNCH, ROY	918
LYNDSEY, GLORIA	2024
MAC BRIDE, DEBBIE	2024
MAC CLENNEN, GREG	3568
MAC DONALD, BETH ANN	2024
MAC DONALD, BRUCE	2024
MAC INTOSH, CHRISTINA M.	163
MAC LEOD, HAL E.	3853
MAC MASTER, BILL	624
MAC MILLAN, BOB	548
MAC TAVISH, A.	3386
MAC TAVISH, ROBERT S.	1828
MACAYA, E. RUBEN	3802
MADDEN, JOSEPH E.	1892
MADDOX, R.	299
MADISON, SHERLEE	1910

NAME	ID NUMBER
MAGEE, DOUGLAS & PEGGY	501, 992
MAGUIRE, MICHAEL J.	3518
MAHAFFY, JAMES	4338
MAHINON, ARLE & TINA	1140
MAHOIAD, DAMIAN	575
MAHONEY, MIKE	4167
MAHYLIS, MICHAEL	629
MALDONADO, ESPINOZA	1157
MALLETT, RON	3644
MALLMAN, GEORGE	3785
MALVAEZ, RICHARD R.	4284
MAMMOTH COUNTY WATER DISTRICT	1259
MAMMOTH FLY RODDERS	2055
MAMMOTH LAKES SNOWMOBILE ASSOCIATION	1106, 2204
MAMMOTH MOUNTAIN SKI AREA	1641
MAMMOTH SPORTSMEN'S CLUB	2067
MAMMOTH/TOIYABE HELI-SKI	1736, 2069
MANCHESTER, C.	1150
MANDELBAUM, ILENE	1577
MANER, DOUG	712
MANLEY, BETH	2072
MANN, S.L.	1419
MANNING, STEVE	1817
MANTOVANI, ROBERT A. & JUANITA M.	1406
MARANO, LUIS	3891
MARANTZ, PHILIP F.	3780
MARCH, SANDI	1077
MARCO, SHERRIE	245
MARCUS, BRAD	4225
MARCY, ED	1497
MARHOLD, THOMAS	1090
MARINELLI, JOSEPH	2024
MARINICK, JACK	3970
MARK, ROBERT	1558
MARKMAN, MARK	874
MARKMAN, R.	3005
MARKOWITZ, LAVEY	244
MARLOW, JANE	1157, 1888
MAROVICH, P.L.	1849
MARRIETTER, ED	1002
MARSHALL, JEFF	2007
MARSHALL, WILLIAM H.	1360
MARSTON, GERI	397
MARTENS, HAZEL	4013
MARTIN, ANNELIESE	3831
MARTIN, CHRIS	557
MARTIN, EMILIE	264
MARTIN, GARY J.	4239
MARTIN, MARTHA	4335
MARTIN, R.W.	1292
MARTIN, ROBERT	1932
MARTIN, SUSAN	829
MARTINDALE, LOWELL	3777
MARTINELLI, COLLEEN	2024

MARTINEZ, BARBARA 1640
MARTINEZ, KAREN 1985
MARTINEZ, LARRY 3145
MARTINEZ, REY 823
MARTINEZ, WILL 687
MARZANO, CARMEN & JOHN 987
MASLINE, LORRAINE 455
MASON, BARBARA 1043
MASON, PETER A. 250
MASTERS, JANIS J. 178
MASTERS, JOHN K. 639
MATERN, ARMAND 1311
MATERN, DOROTHY 3734
MATHENY, ANN M. 2024
MATHER, ROSS 511
MATHERS, LEE V. 3957
MATHEU, JAMES 2024
MATSUYAMA, BOB 3429
MATTESON FAMILY 1395
MATTHEWS, BRENDA 861
MATTHEWS, HELEN 1412
MATTHEWS, R.C. 3032
MATTHEWS, SHIRLEY 3034
MATTHEWS, KING A. 81
MATYAS, BETTY H. 2059
MAUER, MARYLINN 1413
MAUGHAN, D.J. 841
MAYER, CARL III 3119
MAYER, URSULA 952
MAYNARD, DON JAMES 3715
MAYNARD, ROBERT A. 1206
MAYS, LUREE 2182
MC AFEE, JIM 238
MC ALISTER, CARRIE 1036
MC ARTHUR, EDWARD E. 2108
MC ATEER FAMILY 649, 650
MC CALL, J.A. 1782
MC CAMISH, JEANNIE 420
MC CARROLL, NEIL 4318
MC CARTY, G.F. 3935
MC CARTY, R. 3888
MC CHRISTIAN, MARVIN 4336
MC CLEAN, WAYNE 4302
MC COLEN, JOEL 3418
MC CONNELL, ANN 1183
MC CONNELL, DANIEL 3364
MC CONORE, GEORGE 1157
MC COOL, LINDA 1648
MC CORKEL, DOROTHY 1714
MC CUE, JILL 3056
MC CULLOCH, JUANITA 3196
MC CUTCHEON, R.P. 3189
MC DONALD, BODIE O. 2024
MC DONALD, CHARLES K. 29

NAME	ID NUMBER
MC DONALD, PAM & LARRY	3300
MC DOWELL, BOB	1332
MC DUFFEE, PAULINE	3637
MC EWAN, DENNIS	1267
MC EWAN, DIANNE	3790
MC FARLAND, CLARE	1771, 1777
MC FARLANE, ALEX	957
MC FARLANE, RICH	956
MC FARLANE, RUTH	936
MC GIBBAN, JOHN	1980
MC GIMSEY, LEE	503
MC GRALE, C.	519
MC GRALE, MICHELE	4157
MC INTYRE, C.H.	3547
MC INTYRE, JACKIE	1786
MC INTYRE, JAMES S.	3828
MC KAY, A.	1673
MC KEE, HARRY L.	776
MC KEEHEN, GREG	3805
MC KEOWN, LINDA	1241
MC KNIGHT, MARY C.	260
MC KNIGHT, WESLEY R.	2024
MC LAIN, PAT & B.	2024
MC LAUGHLIN, E.H.	3577
MC LAUGHLIN, ROBERT J.	303
MC LEMORE, CATHY & GEORGE	1157, 1888
MC LEOD, BRIDGET	3028
MC LOON, LOIS	268
MC MAHAN, MARK	4159
MC MAHON, HERBERT A.	4145
MC MANUS, JOHN B.	4467
MC MILLAN, M. SEAN	3652
MC MILLIAN, MICHAEL K.	1268
MC MURRY, KAREN	104
MC NAIR, THOMAS R.	429
MC NALLY, JIM	3557
MC NAMARA, SUZANNE	577
MC NAMARA, TRISH	1640
MC NICHOLAS, STEPHANIE & TOM	1584
MC NICHOLAS, T.M.	133
MC PHERSON, EMILY	2046
MC REDMOND, LORI	4321
MC TOOL, ROGER & KATHLEEN	2014
MC VICKER, WILLIAM J.	258
MCLAUGHLIN, MICHAEL S.	2024
MEAD, DAN	3067
MEADE, ROBERT	1500
MECIEA, PEGGY	932
MEDILLIN, ANDY	4083
MEDINA, DAVID	3991
MEDINA, ROBERT	1640
MEEK, PATRICK	4072
MEGAHAN, ROY	3892
MEHNER, JILL	3721

NAME	ID NUMBER
MEHREN, JIM	1016
MEIER, DAN & CHRIS	1230
MEIER, DON	3431
MEIER, MARY	3430
MEILINK, ALBERT	3398
MEILINK, DOROTHY	3410
MEINER, MR. & MRS. LEE	1294
MEINERS, CAROLE	3541
MEINERS, SUSAN	279
MEISTOR, RAYMOND	3522
MEKKELSON, ALLAN	196, 4086
MELBA, BRENDA	2024
MELKONIIAN, MARY	807
MELLINGER, PETER T.	781
MELLON, ROBERT C.	462
MELON, REX	2024
MELTON, DAVID G.	3651
MENDERSHAUSEN, E.	1354
MENDERSHAUSEN, H.	1387
MENDOZA, MARY M.	3456
MENIUS, JACK L.	3445
MENZEL, MIA J.	1567
MERAW, MARK S.	4342
MEREDITH, BRAD	4483
MERIPOL, E.D.	3820
MERKLEY, SHEILA	4056
MERRILL, DALE	1443
MERRILL, GEORGE	1444
MERRILL, VIRGINIA A.	1446
MERRITT, ALBERTA	2024
MERRY, JERRY	1640
MESCHKE, MOLLY C.	172
METZ, DICK	3233
METZGER, HARRY	24
MEYER, MARKA	3685
MEYER, RONALD W.	3699
MEYER, SUSAN	3691
MEYERS, NANCY	248, 5006
MEYERSON, JEFFREY	3154
MICHIELS, DONALD F.	812
MICHIELS, LANA SUE	4015
MIDDLEMISS, TERRI & ED	232
MIDDLETON, EDSEL	4195
MIDDLETON, LES	4194
MIDDLETON, ORLA	4192
MIEURE, MARIE	3055
MIKRUT, JANE	3202
MILAN, THOMAS M.	604
MILETTA, ALEX	834
MILICI, NORMA	3606
MILLARD, KAREN	1640
MILLARD, RICHARD H.	3072
MILLARD, ROBIN	646
MILLER, ALBERT G.	4298

NAME	ID NUMBER
MILLER, BOB	878
MILLER, CRAIG	51
MILLER, CRISTI	1157, 1888
MILLER, DEAN E.	3009
MILLER, JON	1611
MILLER, MARY	1157
MILLER, MURRAY	3559
MILLER, PAM	1157, 1888
MILLER, RACHELE & GARY	1157, 1888
MILLER, ROBERT E.	679
MILLER, RON	688
MILLER, S.	404
MILLER, WENDY	3767
MILLER, WESSON H.	3743
MILLIAM, NORMAN	1219
MILNE, DEBORAH L.	3475
MILNE, JOHN M.	1979, 4226
MILOVICH, GEORGE	31, 233
MILUK, CYNTHIA L.	1440
MIMS, L. STEWART	1246, 1508, 3355
MING, THARRELL	825
MINTON, PAUL J.	1030
MIRVIS, ROBERT M.	681
MISHICA-ROY, CLAIRE	4388
MITCHELL, WILLIAM I.	3347
MIZE, DOUG	3178, 3187
MOBE, SANDRA	1157
MOBLEY, RICHARD	4257
MODE, MICHAEL	760
MODES, J.R.	3855
MOFFETT, SHARON	3666
MOGLEWER, EDNA	370
MOGLEWER, SIDNEY	351
MOHAMARA, J.	2024
MOHR, CARROLL S.	3688
MONCOURTOIS, PAUL	3297
MONCOURTOIS, ROBIN	3703
MONO COUNTY BOARD OF SUPERVISORS	1638
MONO LAKE COMMITTEE	1617
MONO WILDLIFE COUNCIL	1763
MONROE, STEVEN R.	617
MONTANO, ARMANDO	3288
MONTGOMERY, ALPHA L.	3417
MONTOYA, CHARLES W.	2192
MONTROSE, RODNEY & RHEBA	1831
MOON, DAVID	4166
MOONEY, DAVID L.	3758
MOONEY, MARK	658
MOORE, BARBARA G.	808, 817, 1428
MOORE, CHESTER	3152
MOORE, D.W.	3871
MOORE, JOHN K.	1977
MOORE, JONATHAN	637
MOORE, MARY JO	3186

NAME	ID NUMBER
MOORE, RONALD	2024
MOORE, ROSE ANN T.	592
MOORE, TERRY W.	3641
MORA, FRANK Z.	1486
MORALES, ARMANDO	3343
MORAN, ANDREA I.	855
MORAN, GREG	3567
MORDKIN, ARNOLD P.	4248
MOREFIELD, JAMES D.	1844
MOREINO, JOHN	1157
MORELOCK, MERVYN M.	3308
MORENIO, JOHN	1888
MORER, DON	1835
MOREY, KATHY	1952
MORGAN, RICHARD A.	3708
MORGENSON, RANDY	122
MORGNER, JAY	3183
MORIGAKI, ROY N.	3954
MORIN, JANICE L.	4021
MORLEY, R. EDWIN	1878
MORRIS, DON	298
MORRIS, FRANK R.	1888
MORRIS, JEANNE	1515
MORRIS, PEGGY	435
MORRIS, ROGER	763
MORRISON, BILL	1072
MORRISON, DAVID	944
MORRISS, DAVID S.	1157, 1888
MORRISSETTE, RALPH	4080
MORROW, VIRGINIA	4333
MORTENSEN, CHARLES R.	3839
MORTIZ, JAMES A.	726
MORTON, R.E.	3268
MOSBACHER, MARY LOU	1110
MOSCHEL, ROSEMARY	3438
MOSHER, TED	4311
MOSS, JOAN	1169
MOTTOLA, PHYLLIS	1632
MOTYKA, PAUL	4180
MOUCHAWAR, C.	4426
MOULTRIE, FRED S.	3516
MOW, JEFF	1333
MOZEN, HOWARD	2015
MUELLER, CHRISTINA	3515
MUELLER, K.N.	3387
MUELLER, ROBERT & RUTH	35, 263
MUFFLEY, CHARLES	4385
MUIR, ARTHUR H. JR.	1375, 4369
MUIR, BRIAN MITCHELL	34
MUIR, RACHAEL	3901
MULLAR, J.A.	3284
MULLEN, JOHN E.	2040
MULLEN, LARRY D.	618
MULLEN, ROBERT J.	3904

NAME	ID NUMBER
MULLIGAN, PAUL M.	2143
MUNARETT, S.J.	3395
MUNCIE, MARGUERITE C.	3736
MUNKVOLD, RANDY E.	756
MUREAU, STEVE	4050
MUREZ, JOE	3503
MURO, SANDRA	1888
MURPHEY, DONALD	546
MURPHY, CATHERINE	1437
MURPHY, DONALD E.	1640
MURPHY, JIM	4030
MURPHY, JIM	4387
MURPHY, MICHELE	4039
MURPHY, WES	3505
MURPHY, WILLIAM J.	750
MURPHY, ZELI	1345
MURRAY, JOHN	3525
MURRY, DONNA	1157
MUSGRAVES, MICHAEL	4132
MUSTER, WILLIAM	3480
MYERS, JANICE L.	304
MYERS, JULIAN	2066
MYERS, KURT	3210
MYERS, L.	3210, 3446
MYERS, PATSY	2066
MYERS, SHIRLEY	1303
MYERSCOUGH, JEFFREY	730
NADEL, ELLEN	289
NALIBOFF, ELLEN	3156
NANI, R.G.	4261
NARANJO, RICK	4026
NARRAMORE, GLENDA	1157, 1888
NASH, ED	3763
NASH, JOHN M.	3341
NASH, SUSAN	1188
NATIONAL SKI AREAS ASSOCIATION	1100
NATURE CONSERVANCY	2047
NEAL, PAUL; STATE UNIVERSITY OF NEW YORK	1834
NEELY, THOMAS K.	1007
NEFF, MAYNARD	3934
NEITER, RICHARD M.	831
NELLIS, KIRBY S.	1501
NELSON, ERIC	3992
NELSON, GORDON R.	1401
NELSON, RON	741
NELSON, THOMAS R.	3488
NELSON, VALERIE	3865
NEUBAUER, JOHN	1429, 3569
NEUMAN, EVELYN	2103
NEUSOM, SHERMAN GRANT	3932
NEVADANS AND CALIFORNIANS FOR WILDERNESS	1876
NEVINS, RICHARD E.	4029
NEWBAUER, CINDY L.	4451
NEWBRY, GREG	1845

NAME	ID NUMBER
NEWFIELD, ROBERT W.	4240
NEWKIRK, STEVE	2012
NEWLAND, VICTOR	3966
NEWMAN, JAMES	1963, 4205
NEWTON, JUDY	4104
NEWTON, STANLEY G.	1961
NICHOLAS, EARLE	1618
NICHOLS, BILL	518, 1296
NICHOLS, DARLENE I.	3509
NICHOLS, ELISABETH B.	4232
NICHOLS, MARK & SHERRY	312
NICKERSON, LARRY	1640, 3089
NICKERSON, WILLIAM O.	3670
NICKOLAUS, EVELYN MAE	148
NICOLOSI, GEORGE R.	3330
NIKOLAUS, KELLY	3107
NILES, DENNIS J.	186
NILSSON, MRS. E.	1674
NISHINO, DONNA M.	3536
NIZZE, ANNE	3206
NIZZE, N.A.	3208
NOCK, ROBERT	521
NODA, DAVID	3118
NODIFF-NETANEL, VICTORIA	2111
NOEL, ERIN	1456
NOEL, PAUL	1458
NOLAND, THOMAS R.	1887
NOLES, R.	1197
NORBERG, LINDA	3267
NORDF, FREDERIC J.	973
NORDGREN, ARLENE	3432
NORDGREN, C.R.	4150
NORMAN, JOHN	3448
NORMAN, TONI J.	4372
NORRED, WILLIAM	3023
NORRIS, JODI	844
NORTHAMPTON, CRAIG	1640
NORTHCOTE, PHILIP	3950
NORTHEAST CALIFORNIANS FOR WILDERNESS	126
NORTHSTAR AT TAHOE, H.C. SCHWARZ	1228
NORTON, FREDERIC	1600
NORTON, GAY	3426
NORTON, JEANETTE	2172
NORTON, L.V.	3425
NORTON, RUSS	744
NOWAK, BUFFY	1091
NOWAK, TERRIE	3589
NUBBS, BILL	6012
NUERNBERGER, LESLIE	3135
NUNN, WING	1167
NUTT, JOHN	1555
O'CONNELL, KATHLEEN	69
O'CONNOR, MATTHEW	1625
O'CONNOR, TIM	1469

NAME	ID NUMBER
O'CONOR, JOHN F.	1423
O'DONNELL, RICK	842
O'HARA, MIKE	1640
O'HARA, SHARON	1991
O'HOYLE, ERIN	1640
O'KELLY, MICHAEL	4032
O'NEAL, TIM	1157
OAKESHOTT, JEANNE	430
OBERLIN, DON	1290
OBLAK, PAT AND FRANK	1352
ODION, D.A.	1653
OGILVIE, GRACE	2024
OJENDYK, HENRY A.	3497
OKON, CRAIG M.	3801
OLDENBURG, CURTIS M.	943
OLDFIELD, ANDY M.	1003, 3066
OLDHAM, CHRIS	3523
OLEN, BURT	360
OLIN, EVERITT	2024
OLIVER, ROBERT & DEBBIE	2024
OLSEN, BRUCE	2093, 2198
OLSEN, KRISTIAN N.	833
OLSEN, MIA	536
OLSON, BOB	4487
OLSON, DAVID P.	1227
OLSON, DERIK	1917
OREN, NANCY	4215
OREN, PHILL	3918
ORNER, GAYLE	3677
ORR, PATRICIA	3636
ORWIN, KURT & CAROLYN	344
OSBORN, DON	1675
OSHITA, GORDON H.	3834
OSSOFSKY, SY	3546
OSTBY, MIKE	1640
OSTERLAND, ROBERT S.	3799
OSTRANDER, JACK S.	3298
OTOSHI, MICHAEL LEE	4360
ORTENBURGER, LEIGH N.	2188
OVERALL, JANICE	1340
OVERLAND, CYNDEE	1855
OVERLEASE, NANCY	1300
OVERWAY, EUGENE	3458
OWENS, GENE A.	348
OYADOMARI, DAVID	4363
PACHECO, DAVID	252
PACHL, J.	1574
PACIFIC GAS AND ELECTRIC COMPANY	150
PADILLA, J.	1755
PADILLA, RUTH	1690
PAGE, CARMEN	1640
PAGE, KATHERINE H.	1830
PAHL, DONNA MAY	105
PALMER, CAROLINE M.	2176

NAME	ID NUMBER
PALMER, HELEN & DAVID	2006
PALMER, LINDA	2111
PALMER, ROSS	1272
PALMERI, THEODORE M.	1235, 3843
PANNO, MONICA	3771
PANOS, JEANNE M.	1708
PANOS, RODNEY M.	1422
PANTON, GARY	4339
PANTON, LEE	4340
PAPAGEORGE, ALEXIS	1640
PAPICH, INGRID	4327
PAPICH, RAYMOND	4136
PAPP, DAVID	1560
PAQUETTE, MAURICE GUSTIAVE JR.	472
PARANICK, DANIEL & MELINDA	1811
PARAZETTE FAMILY	3073, 3273, 3332
PARENT, SHARON	1059
PARK, BARBARA W.K.	3640
PARKER, DEBORAH	1566
PARKER, HARRY C.	3896
PARKER, J.	3931
PARKER, JAMES A.	3772
PARKER, JIM	1579
PARLEE, RICHARD W.	4019
PARLETRE, AUSTIN	4101
PARSLEY, JOE	4383
PARTRIDGE, BRUCE	2100
PASKE, GARY B.	4049
PASNAU, ROBERT O.	3500
PATRICK, FREDRICH A.	353, 3360
PATTEN, DENISE	636
PATTERSON, LAURA	4094
PATTON, RICHARD W.	3967
PATUR, SUZANNE	1264
PAULE, WILLIAM JOEL	1585
PAUST, RICHARD	967
PAUTSCH, B.R.E.	3977
PAUTSCH, DEAN	733
PAUTSCH, DWAIN	3812
PAWLOSKI, R.L.	3259
PAYNE, JACKIE	845
PAZEOIE, NICK	372
PEARDON, MIKE	396
PEATROSS, MR. & MRS. EDWAN L.	1305
PECKNER FAMILY	2066
PEER, SCOTT G.	3463
PEET, GARY	4488
PEEVY, KAY & S.C.	2024
PELECH, WALTER & DOROTHY	288
PELL, CHRISTIANA	11
PELL, LEWIS	12
PELLAND, TAG	574
PELLETIER, CHERYL D.	1797
PELTIER, RICK	1445

NAME	ID NUMBER
PENDALL, ELISE	277
PENDELL, MERLE	1455
PENDER, LINDA	4291
PENE, ELLEN L.	1509
PENHMAN, JEFFERY	1874
PENNEBAKER, R.G. & FLEATA	294
PEREZ, ATLINE	1640
PERKENS, BRUCE	2024
PERKINS, CHERYL A.	4389
PERKINS, GEORGE	3339
PERKINS, STEVEN	1635
PERNARELLI, PETER J.	558
PERRELLI, RICHARD	1808
PERRET, J.D.	3491
PESNELL, KENNETH C.	1967, 4431
PETER, GLENN	243
PETERS, CASEY	1951
PETERS, DAVID	1945
PETERS, SUSAN	272
PETERS, WARREN	686
PETERSON, CHRISTOPHER	3111
PETERSON, DAN J.	1587
PETERSON, EILEEN	1372
PETERSON, GARTH	4171
PETERSON, GEORGE	697
PETERSON, RAY	4469
PETOKAS, INA	1000
PETTER, ANNA	4337
PETTER, NOEL	3837
PETTS, TIM	1863
PFAFFHAUSEN, W.K.	1291
PHILIPS, SUSAN	3632
PHILLIPS, JASON	1073
PHILLIPS, LEE	3653
PHILLIPS, STEVEN	1157
PIENS, LAURA	257
PIERCE, MARCUS	3251
PIERPONT, F. SCOTT	1618
PIETROWSKI, JAMES W.	3560
PILON, JANE S.	4374
PILOT, STEVE	3150
PINA, ROBERT	3610
PINKHAM, FRED	4073
PIPER, INA E.	52
PIPER, JOHN CARTER	4301
PISCHEL, BRUCE	103
PITTSFORD, JILL	1640
PLACENSIA, RENEE	4461
PLAKOS, CHRIS	485
PLAKOS, LORI	556
PLEYTE, JAMES R.	226
PLING, DAY S.	1157
PLUMAS-SIERRA CITIZENS FOR MULTIPLE USE	1208
PODOSIN FAMILY	3996

NAME	ID NUMBER
PODOSIN, BRAD	3779
PODOSIN, NANCY	3057
POLIFRONI, PAMELA	4236
POLLECK, MARILYN	1833
POLLOCK, GARY	1538
POLLON, JOSEPH	3867
PONGLEY, MILINDA	13
PONTON, THOMAS H.	4228
POOLEY, PHILLIP	1640
PORPIGLIA, RANDY	1231
PORTIOUS, KRISTINE E.	2024
POSNER, JEFF	215
POST, J. ROBERT	4118
POTRATZ, RON	3303
POTTER, KEITH	3280
POWELL, DOUGLAS R.	1263
POWELL, LELAND	3566
POWELL, RAYMOND P.	919
POZZO, SUZANNE	3390
PRATHER, MICHAEL	1565
PRATT, H.	155
PRATT, JOHN R.	3895
PREEMAN, STANLEY & STACEY	2024
PRELEYKO, JANET	3447
PRESCOTT, DAN	2024
PRESSEL, ART JR.	4177
PRESSON, ROBBIE	4452
PRESTEN, KEITH	3482
PRESTEVICH, ARLA & CURTIS	2024
PRICE, MARY ALICE	1368
PRITCHARD, BARRY	3384
PRITCHETT, DANIEL	2050
PROBST, THOMAS J.	1659
PROCHAZKA, INGEBORG B.	945
PROFESSIONAL SKI INSTRUCTORS OF AMERICA	1410
PROFFOTT, JIM	31
PROMISEL, SCOTT	3452
PROPER, DON	3246
PROPOGGIA, GINO	786
PROTTI, MARK	1174
PROVO, ROBERTA	4325
PROWANT, KAREN	1686
PRUPIS, BEN	362
PRUSSEL, JON	4134
PRYOR, CHUCK	920
PRYOR, HUGH C.	3376
PULLMAN, MORT	3939
PURDOM-PHELPS, LISA	5001
PUSKAR, RICHARD M.	1571
PUTMAN, JEFF	1901, 2149
PUTZIGER, DONNA	4209
QUAIL, DOROTHY	3694
QUAIMBY, DEBBIE	63
QUETSCH, JOHN G.	402

NAME	ID NUMBER
QUINN, DENA	3038
QUIRE, MARK	948
QUYADA, JOSEL	887
RACHMAN, MITCH	847
RAFFEL, STUART J.	3441
RAKE, ANDY	4185
RALISH, BILL	31
RAMROTH, BRUCE	3219
RAMSEY, BILL	3806
RAMSEY, BOB	981
RANDALL FAMILY	4453
RANDALL, ELLEN	4475
RANDALL, SUE	4054
RANDALL, SUSAN	5003
RANDOL, WILLIAM L.	2099, 4455
RANEY, BRUCE	3170
RAPER, JOHN C.	929
RAQUET, MIGNON	3726
RASMUSSEN, JOHN	2029
RASMUSSEN, LARRY	3947
RAUSCH, ROBERT C.	594
RAWLINGS, R.E.	1128
RAWLINGS, ROGER	3222
RAY, JACUELYN SUE	1384
RAY, JOSH M.	1888
RAY, JULIA	2024
RAY, WILLIS M. & DOLORES	1888
RAYMOND, ANDY	3421
REA, JACK	3255
READER, ROY LEE	1687
REBBE, GAYLEN W.	3572
REED, BARBARA	8
REED, C.	2024
REED, FRANCENE	4434
REED, FRED	2024
REED, JEAN	2024
REED, JOHN	284
REED, SAM	4348
REESE, ROB	1640
REEVES, RONALD J.	3905
REGAN, MIKE	502
REGAN, NIKKI	3623
REICHLE, JIM & CLAUDE	1981
REICHLE, RICHARD A.	3624
REID, MILTON H.	3278
REIDIK, JOEL	1823
REIFSNIDER, BETSY	1843
REISIG, WAYNE	875
REISS, ARTHUR P.	3800
REMINGTON, BRIAN	543
REMPEL, ROBBIN W.	297
REMPEL, TAMI	427
RENE, WILLIAM E.	86
RENI, DANIELE	1825

NAME ID NUMBER

RENNER, LARRY 754
REVAY, BLAISE 4492
REVEAL, JACK L. 113
REX, SHEILA W. 3875
REY, JOHN 4349
REYES, REX K. 806
REYNOLDS, J.D. 2024
REYNOLDS, JEFF 3071
REYNOLDS, MARC AND KATHRYN 498
REYNOLDS, TRINA 2024
RHODAS, GLENICE 787
RHODES, PHILIP T. 1798
RHONE, ELIZABETH M. 390
RICE, KIMBERLY A. 2068
RICE, URSULA 4175
RICE, WILLIAM H. JR. 1615
RICH, ABIGAIL CROW 2111
RICH, DAVID G. 136
RICH, JAMES JR. 2111
RICHARDS, C.C. 2024
RICHARDS, CHRIS 1640
RICHARDS, JOSEPH S. 321, 339
RICHARDS, LARRY A. 1888
RICHARDSON, DOUGLAS W. 3971
RICHARDSON, WALTER 4137
RICHEY FAMILY 3334
RICHEY, HAROLD H. 768
RICHEY, LARRY D. 3747
RICHEY, MARGARET 3102
RICHMAN, JONATHAN 308
RICHMOND, DR. & MRS. DENNIS 4201
RICHMOND, KAREN 3990
RICHMOND, KEN 4071
RIDDER-WHITE, BROOKS 935
RIECHEL, BILL 3166
RIEGG, MAX 713
RIFFEL, STAN 523
RIIPPI, GEORGE 93
RIKER, JOHN M. 414
RILEY, R.R. 4300
RINDE, FELIX 1488
RING, FRANK A. 4274
RINNE, WILLIAM E. 86
RIPLEY, LORETTA 2024
RIPLEY, TOM 2024
RISK, LEON 3613
RITTER, C.D. 590
RITTSCHER, JUDITH E. 1693
RIVERA, RICARDO 1181
RIVERS, WALTER 275
ROBERSON, B.E. 3345
ROBERSON, DENNIS 3082
ROBERTS, BROOKE 645
ROBERTS, CATHY 667

NAME	ID NUMBER
ROBERTS, DON	4164
ROBERTS, EDEN	3423
ROBERTS, EDWARD E.	4245
ROBERTS, HAL	1944
ROBERTS, MARIA & DANIEL F.	1244
ROBERTS, MARK	1640
ROBERTS, WILLIAM E.	3809
ROBERTSON, D.R.	3245
ROBERTSON, DONALD	4409
ROBERTSON, RONALD G.	4322
ROBIDEAUX, LARRY	3279
ROBINSON, JAMES A.	3439
ROBINSON, JOEL P.	1644
ROBINSON, KATHLEEN	553
ROCHA, INGRID	3925
ROCHE, SHAUNA N.	3033
RODENRYS, BARBARA	3216
RODENRYS, JOHN	3155
RODEWARD, CHARLES	1559
ROE, GARY	662
ROELLCHEN, CHRISTINE A.	2104
ROESCH, RANDY	4273
ROESSING, W.	3916
ROGERS, DOUGLAS B.	161, 1682
ROGERS, KATHY	364
ROGERS, LEAH	314
ROGERS, ROSS	4005
ROGERS, SCOTT R.	1447
ROHAN, WILLIAM E.	4174
ROHLANDER, DAVID	3087
ROHLANDER, TOMAS	4008
ROHLMAN FAMILY	2024
ROLLOCK, KENNETH	18
ROMERO, DANNY	1035
ROMINE FAMILY	1822
ROMINE, JUDITH	1383
RONJALD, KEN	1699
RONNING, CONNIE JO	3003
RONNING, RICH	3004
ROSCZYK, MARY LOU	78
ROSE, SCOTT	1612
ROSENBERG FAMILY	3013
ROSENBERG, WILLIAM	3021
ROSENFIELD, SHELLEY	4310
ROSENKRANZ, JOHN	3146
ROSENTHAL, A.L.	4447
ROSENTHAL, D.E.	3158
ROSENTHAL, JOEL B.	4230
ROSENTRETER, DIANE	56, 1466
ROSS, JEFF	1947
ROSS, JEFFREY	237
ROSS, NORMAN	2106
ROSS, RICHARD	3501
ROSSI, JUSTIN	1071

NAME	ID NUMBER
ROSSI, ROBERTA	4081
ROSSI, TERRY	1433
ROSSIER, LINDA	792
ROTARY DISTRICT #528	2186
ROTH, LILLIAN M.	1374
ROTH, LORI	1896
ROTHENBERGER, RODGER	3363
ROTHROCK, DAVID	1157
ROVEN, PHIL	3195
ROWAN, PAUL & JOYCE	4034
ROWE, JAMES M.	3789
ROWON, BOBBY	1157, 1888
ROYE, DAVID	746
RUBAUM, LAD	3283
RUBINSTEIN, NORMAN E.	4120
RUBISH, HARLEY	898
RUDNICK, KEITH	1640
RUDOLPH, RICHARD L.	524
RUEKBERG, JOE	3198
RUHNAU, STEVE	1866
RUMBLE, R.	4439
RUMJAHN, THERESA G.	2060
RUMMEL, E.J.	3392
RUMMELSBURG, JOAN	1489
RUPP, KEVIN	1552
RUPPE, LAWRENCE R.	3910
RUSER, GORDON B.	1990
RUSO, LEWIS J.	3732
RUSS, DON	778
RUSSELL, DOUG	4429
RUSSELL, EVAN	1737
RUSSELL, J.M.	1915
RUSSELL, JULIA S.	1858
RUSSELL, LORNA	2004
RUSSELL, WILLIAM T.	158
RUTSCHMANN, J. & BODARY, SARAH	1524
RUTT, JOE	6013
RUTTENBERG, SAM A.	4263
RUVO, LARRY	2189
RYAN, B.	3025
RYAN, DONALD A.	2024
RYAN, JOSEPH W.	3951
RYDER, ANN M.	3436
RYERSON, DIANE	1519
SABAD, VICKI A.	5030
SAILOR, JANE	1789
SALALIN, DAVID L.	1949
SALARI, JUDITH	1888
SALAS, YOLANDA	3511
SALATHIEL, LINDSAY	4254
SALEM, JOSE V.	4485
SALMONT, BETZ	3684
SAMARDICH, ARNOLD	586
SANDELL, DAVID R.	4121

NAME	ID NUMBER
SANDER, MORGAN	1295
SANDERS, RICHARD	1232
SANDERS, SUSAN	3053
SANDERSON, ALICE & CLAYTON	2024
SANDLER, DJ	1640
SANFORD, TIMOTHY B.	449
SANTOS, GREG	3611
SARCHIN, LARRY	3037
SARCHY, HEATH	1157
SARNA, JOHN E.	1517
SASSMANN, RITA	3011
SATTLER, ALFRED	1513
SAULSBERRY, M.	296
SAUSER, RUDOLPH JR.	605
SAVAGE, RICHARD	852
SAWKA, STEPHEN	1471
SAWNER, M.	1273
SAWYER, RICHARD	3609
SCARCE, WILLIAM R.	4450
SCARCELLO, E.S.	3405
SCARPELLO, FRED	432
SCENIC SHORELINE PRESERVATION CONFERENCE	2178
SCHACKER, MICHAEL	1439
SCHAEFER, FRED	3020
SCHAEFER, WILLIAM P.	47
SCHAEFFER, MRS. SAMUEL	3465
SCHAFFER, GEORGE	3737
SCHARNWEBER, JANET	3184
SCHAT, ERICK	1312
SCHAUBMAYER, ROBERT	644
SCHIPP, CARL	3017
SCHIRO, MARCEL	3778
SCHLAU, LAUREN	1298
SCHLAX, JOHN	3163
SCHMALHORST, CAROL	4296
SCHMALHORST, W.R.	3250
SCHMIDT, ALLAN R. & ANNE C.	179
SCHMIDT, REINHARD E.	4412
SCHMIDT-MAYBACH, ULRICH	2173
SCHMITT, EVELYN	3825
SCHNAAR, BETTY	1185
SCHNADT, JANET E.	3660
SCHNEIDER, BRAD & KELLY	907
SCHNEIDER, LAURA	1462
SCHOEN, CHAD	37
SCHOERNER, E.H.	753
SCHOERNER, KATHLEEN	755
SCHOOL OF LOST BORDERS, STEVEN FOSTER	1223
SCHOOLER, JAMES	3217
SCHOPP, JOHN	3433
SCHOTT, JIM	1742
SCHOTZ, ANDREA	3552
SCHOUWEILER, JOANNE	57
SCHRAGER, CRAIG	821

NAME	ID NUMBER
SCHROEDER, ALAN	766
SCHULTZ, KIRK	757
SCHULZ, GUENTER	3396
SCHULZ, J.R.	3704
SCHUMACHER, THERESA	3062
SCHUNAMS, ALEX	1729
SCHURER, PAUL	4172
SCHUYLER, ED	3579
SCHWARTZ, DEB	1640
SCHWARTZ, MARK	3010
SCHWARTZ, ROBERT	4238
SCHWARTZ, STEVE	541
SCHWIND, STEVE	4465
SCOTT, B.	1640
SCOTT, BARBARA A.	79
SCOTT, CAL	4160
SCOTT, ELAINE M.	3794
SCOTT, O.W.	1640
SCOTT, SYDNI	2148
SCRIVNER, JACK O.	4224
SCZAWINSKI, RAY	1438
SEDILLO, MICHELLE	4038
SEEBERG, PHIL	4314
SEGAL, AL	3175
SEGAL, HAROLD	683
SEGAL, SHARON	718
SELIGMAN, TRUDE	4445
SELLINGER, GISELA	3290
SELLINGER, LLOYD	3928
SELLINGER, SEAN	3995
SELTERS, ANDY	1943
SEMLER, STEVE	4381
SENG, FRANK G.	3969
SEQUOIA SNOWMOBILE ASSOCIATION	1109
SERABIA, BOB & LINDA	3079
SERBOSS FAMILY	1157
SETTANI, TERI KAPLAN	3620
SEVENTY-SIX BAR RANCH	1603
SEVERSON, JEFF	3887
SEWED, ARTHUR	1047
SEYDOR, MICHAEL	4323
SHACKLETT, NANCY G.	1663
SHAFFER, MARK	1751
SHANE, KEVIN	1066
SHANKS, STEVE	3329
SHAPLEY, LLOYD & MARIAN	1596
SHARP, DON N. JR.	832
SHARPE, KENNETH	2156
SHARPLESS, RON	913
SHARPSTEEN, MILDRED Y.	1622
SHATFORD, JUDGE HENRY W.	3675
SHAVER, MARK	1706
SHAW, CHESTER J.	3348
SHAW, JUNE	190

NAME	ID NUMBER
SHELDON, JACK	201
SHELLY, ROBERT E.	692, 1095
SHEPARD, EDYTHE	4084
SHERMAN, HARVEY	57
SHERMOEN, LANCE	3243
SHIPPEARD, STAN	2024
SHIPPER, DAVID	1409
SHOLAAS, ROBERT	2039
SHORT, MARK	1640
SHORT, MICKEY	3706
SHORT, R.L.	1225
SHORT, RANDY	3755
SHOWALTER, MARY ANN	3899
SIBBET, DAVID	100
SICK, MARK	3138
SIDDALL, TEDDI	3048
SIERRA CLUB	1730, 2023
SIERRA CLUB OF CALIFORNIA	118
SIERRA CLUB - LOMA PRIETA CHAPTER	1775
SIERRA CLUB - REDWOOD CHAPTER	1485
SIERRA CLUB - SF BAY CHAPTER	1388, 1931
SIERRA COUNTY BOARD OF SUPERVISORS	2009
SIERRA FOREST PRODUCTS	357
SIERRA PACIFIC INDUSTRIES	290, 1226, 1899
SIERRA PACIFIC POWER COMPANY	28
SIERRA TIMBER PRODUCTS	2017, 2197
SIGIZU, CHRIS	1319
SIGNER, ROY M.	6014
SIGNOR, JOE	1640
SILBERBERGER, AMY	1088
SILL, MARJORIE	978
SILVA, JOHN	3564
SILVER, D.A.	421
SILVERA, MARCO	4425
SILVERSTONE, ROGER	3920
SIMAS, BILL	3976
SIMICH, SAM	805
SIMMINS, DONNA	1672
SIMMONS, JEAN	4347
SIMMONS, SIDNEY M.	610
SIMON, BARBARA	598
SIMON, JEFF	3648
SIMON, JEROLD	3006
SIMON, LARRY	1987
SIMON, ROGER D.	1346
SIMPSON, HANK	1621
SIMPSON, MILDRED O.	1238
SIMPSON, RUTH	1900
SINGER, ROY M.	73
SINGER, WILLIAM	3696
SINGLE, KENNETH V.	1633
SIRACUSO, DAVID A.	1640
SISK, RANDY	1157
SISSON, RAY & BETTE	1883

NAME	ID NUMBER
SIU, SUZANNE	1800
SKEELE, TOM	1780
SLADISH, JEFF	2024
SLATE, GLORIA	361
SLATTERY, TIMOTHY J.	456
SLEWKIE, JEROME	211
SLOCUM, PHILLIP & SALLY C.	2111
SLONE, THOMAS H.	74
SMALL, GARY	3389
SMALL, SANFORD	4102
SMIO, ADRIANE	1872
SMITH, CAROLYN	3366
SMITH, CATHERINE P.	437
SMITH, CHARLES	1982
SMITH, CLAY	1322
SMITH, DAVID	809
SMITH, DAVID W.	325
SMITH, ELINOR	2111
SMITH, EVAN	2080
SMITH, FRANK E.	1157
SMITH, GENNY	1650
SMITH, J. BIXBY	3254
SMITH, JACK R.	633
SMITH, JAMES O.	621
SMITH, JASON	1067
SMITH, LINDA	745
SMITH, LINDA	1779
SMITH, MICHAEL	3180
SMITH, RICHARD	1157, 1888
SMITH, ROBERT A.	2105
SMITH, RONALD E.	2139
SMITH, ROSS W.	428
SMITH, RYAN BIXLEY	3406
SMITH, STEVE	4493
SMITH, THOMAS ROY	856
SMITH, VICTORIA	318
SMOREE, PAT	2024
SMUKLER, LISA	3035
SMYTHE, MEILEE	142
SNAPP, J.	3337
SNOW, ROBERT M.	3444
SNYDER, JOHN C.	31
SNYDER, ARTHUR K.	2057
SNYDER, PATRICIA	3168
SNYDER, PAUL E.	3776
SNYDER, SALLY	4448
SOUTHERN MONO HISTORICAL SOCIETY	109
SOBEL, JUDY	223
SOKOLSKY, ANDREW M.	993
SOLARIC, JUDITH	1157
SOLIG, MARTIN	4281
SOLORIO, GABRIEL T.	631
SOLVRY, CONRAD R. JR.	4202
SONTAGE, JOHN	3306

NAME	ID NUMBER
SONYSTOR, MICHAEL	2024
SORENSON, BONNIE L.	4187
SORENSON, ROGER M.	4190
SORGE, MONROE B.	4435
SOULE, JOHN F.	609
SOULE, SALMON A.	3782
SOUTHERN CALIFORNIA EDISON COMPANY	1365
SOZALS, ROBERTO	1671
SPACKMAN, SUSAN	2107
SPAUSTAT, JAMES H.	4430
SPEARE, JOHN L.	678
SPEARMAN, JOYCE J.	1396
SPECKHARD, AMY	820
SPECTOR, ANNA	1079
SPENCE, BRIAN C.	276
SPENCER, MARK	3558
SPENST, JAMES A.	1637
SPIEGEL, SAM	454
SPILLER, CECIL	947
SPOFFORD, JEFF	2041
SPRADLIN, EDWARD	4163
SPRAGUE, MICHAEL	916
SPURWAY, LYNNE	4144
SQUAW VALLEY, USA	1426
SREDNICK, CRAIG	4229
ST. JOHN, NORBERT W.	4264
STAGUSS, GEORGE	80, 1402
STAINBROOK, SAM	4297
STANDLEY, JEANNE	3181
STANFORD, MARJORIE	4114
STANLEY, ALAN R.	481
STANLEY, ANDREW	699
STANLEY, MARK	4067
STANTON, CLIFF	4165
STARK, GREG	4367
STARNES, LES O.	4253
STARRATT, DYLAN	4089
STATE OF NEVADA, DEPARTMENT OF WILDLIFE	282
STAY, CHARLES F.	4449
STAZOFF, MEL	218
STEELE, DALE T.	127
STEELE, JOHN	1640
STEENBERGEN, JAMES	3944
STEFANIK, MARIE	537
STEIN, ARTHUR	3942
STEIN, IVAN NORTON	4309
STEIN, JEFF	1640
STEINBACH, ARCHIE	3307
STEINBERG, DANIEL	42
STEINBERG, FRITZ	4010
STEINBERG, MARIA & ROBERT	1860
STEINER, RICHARD	722
STEINMETZ, J.E.	295
STEKEL, PETER	1006

NAME	ID NUMBER
STEMPIEN, WALTER	3575
STENERSON, R.A.	3683
STEPHAN, JOHN	674
STEPHENSON, DAVID A.	114
STEPHENSON, W. MICHAEL	2121
STERLING, JOHN R.	1997
STERMER, MIRIAM	4001
STERNE, ROB	189
STERNER, JOAN	4079
STERRETT, ELIZABETH	3517
STEVENS, KENT	3881
STEVENS, MARK	1792
STEVENS, MARK A.	4359
STEVENS, RON	4289
STEVENS, VERNA	2024
STEWART, DAVID	3130
STEWART, FRANK	1107
STEWART, GENE	1442
STEWART, JAMES M.	1493
STEWART, JON	4328
STEWART, MALCOLM	3530
STEWART, ROBERT D.	3671
STEWART, STEVE	1102
STIMSON, JIM	1940
STINSON, DONALD C. & BETTY	1328
STIVERS, DONALD C.	2064
STOCK, DANIEL	1575
STOCKERT, SUSAN	4486
STOCKFLETH, JIM	2075
STOKES, MICHAEL	3994
STOLARCZYK, DANIEL A.	1355
STONE, ALFRED L.	4459
STONE, CHRISTOPHER	3956
STONE, JEFF	91
STONE, JONATHAN P.	3369
STONER, JOHN	1913
STOOPS, JAMES S.	1540
STOUDENMIRE, SUE	728
STOUTENBURG, GARY	1362
STOVER, SHARI	3061
STOWELL, L.	1159
STRACHAN, DON	467
STRAIGHT, STEVE	4035
STRATTON, AL	3492
STRICKLAND, ROSE	2102
STRIEDICH, DAVID	3305
STRONG, MADGE	1561
STRUNK, SUSAN	1640
STRUTZER, BEVERLY	3182
STUCKEY, JOE	240
STUMP, THERESA	1655
SUAREZ, ANA M.	5011
SUBART, ROBERT	1999
SUEMNICHT, KENT R. & WORCESTER, NANCY	3687

NAME ID NUMBER

SUK, KATIE 492
SUK, ROBBIE 164
SUK, TOM 146, 165, 1583
SULLIVAN, SYLVIA 3911
SUMMERS, SHELLY 1640
SUNSHINE MINING COMPANY, DON EARNEST 1023
SUTHERLAND, ROBERT 491
SWANBERG, LEE 300
SWANHUYSER, BRUCE 3617
SWANSON, JOHN R. 27
SWANSON, ROBERT T. 1377
SWANSON, TODD 1935
SWART, DAVID B. 231
SWAUGER, GRETA LOU 3293
SWEAT, RALPH 2024
SWEDE, SUZANNE L. 1761
SWEENEY, E.M. 3282
SWEET, ELAINE & LARSON, LARS 1820
SWEETLAND, TODD 4379
SWIGART, JIM 1172
SWONGER, CLAUDE A. 3697
SZPILA, ROBERT 3385
SZYMBRISKI, MARK 3989
TAGGART, MARIANNE 185
TAIRA, JUN 822
TAJIMA, GEORGE 3140
TAJIMA, TAZ 3214
TAKASE, HAYAHIKO 3041
TAKEDA, DENNIS K. 3171
TALBOT, WILLIAM 4023
TALBOTT, W.S. 4203
TALL, ROBERT E. 1158
TALLMAN, CHUCK 3266
TALLMAN, ROXANNE 4428
TALLSTRUP, BURKE 3645
TANABE, R. 3655
TAPP, GREG 700
TARBUSH, DAVID S. 1327
TARLAUX, JOHN 1640
TARRY, SALLY 2024
TATE, MARTIN 1688
TATE, MATT 1075
TATUM, WAYNE M. 4017
TAYLOR, ANGUS E. 1544
TAYLOR, CRAIG 3063
TAYLOR, DEAN W. 1652
TAYLOR, JIM 1157, 1888
TAYLOR, WILLIAM T. 225
TEHAMA FLY FISHERS 1894
TELLER, ADAIR 222
TELLIANO, MICHAEL 640
TENNANT, JOHN R. 3512
TEPLIN, LAWRENCE 3917
TERNES, PATRICK 4351

TERRELL, HOLLIS 3047, 4135
TERUES, ANDREW 3804
TERWILLEGAR, WILLIAM 1640
TESADA, ANNA ALISA 2111
THATCHER, ADRIANNE 661
THAXTER, TED 1349
THEYS, THOMAS 4251
THOMAS, CANDY 3542
THOMAS, GWEN 595
THOMAS, JIM 4397
THOMAS, LLOYD 239
THOMAS, MARGARET 124
THOMAS, SHARON L. 627
THOMPSON, ELLIOTT 569
THOMPSON, GEORGE 3069
THOMPSON, GRANT 3314
THOMPSON, KEITH V. 3952
THOMPSON, RANDALL S. 3616
THOMPSON, RICHARD E. 647
THOMPSON, THELMA 570
THOMSEN, ALEX 613
THOMSON, GEORGE W. 1482
THOMSON, JASON 1046
THOMSON, JULIE 3131
THORBURN, DEE DEE 5000
THORLEY, G.R. 4064
THORNE, STEPHEN 4181
THRAPP, MICHELE 962
THYE, JOAN FAYE 3489
THYE, ROBERT P. 3718
TICE, DEBBIE 2024
TICHY, MR. & MRS. GEORGE 2043
TIDWELL, DON 1933
TIELROOY, JACK 417
TIELROOY, JOHN E. 3242
TIERNAN, CAROLYN J. 1613
TIESZEN, KEITH J. 3524
TIFFANY, TED W. 780
TIGHE, MARIE 1260
TILLEMANS, BRIAN 337
TILLOTSON, ROBERT 3661
TILTON, CURTIS 4370
TIMM, LINDA 3437
TIPTON, KATHIE L. 508
TJOMSLAND, RICHARD G. 3657
TOBIAS, ROBERT 982
TOBIN, JACK 606
TODD, JEFF 751
TODD, JOHN E. 4041
TODD, RANDY 2082
TODD, WILLIAM R. 2083
TOGNAZZINI, TERRY 4268
TOLKIN, MARSHA 2066
TOLLEY, CHRIS 551

NAME	ID NUMBER
TOLLSTRUP, MARIE	3658
TOMAJKO, CHUCK	4024
TOMIC, JUDITH C.	3847
TONOPAH, GLEN D.	2024
TONSTCH, JUAN M.	641
TOPAKIAN, KAREN LESLIE	38
TOPHAM, CHRIS	583
TORRENCE, ESTHER	3754
TORRENCE, H.L.	3705
TOTH, BOB	4173
TOTTER, MIKE	1050
TOUBES, JUDITH	495
TOURJI, JAMES	630, 2128
TREIBATCH, I.	4260
TREMBLY, LARRY G.	2024
TRORLEY, TERRY	355
TROTTER, LOISELL W.	1754
TROUPE, RONALD C.	3823
TROUTH, MARTIN	2024
TROWELL, CLARK	1903
TRUDEAU, G.	3844
TRUITT, MICHAEL A.	322
TRUTE, NORMAN G.	860
TRYON, ELVA	3454
TUCHMAN, TERRY	4208
TUCKER, DAVID	1709
TUCKER, FRED K.	235, 3368
TUCKER, SALLY	3169
TUCKER, SUSAN A.	3571
TUELE, ROBERT L.	1382
TUESCHER, TED	1930
TUGROM, DAVE	2024
TULARE COUNTY BOARD OF SUPERVISORS	137
TULLOCK, VIRGINIA	795
TULLOCK, WILBUR J.	3866
TUPELL, DAN	1276
TURNER, ANDREA	725
TURNER, BARBARA	1005
TURNER, C.G.	1190
TURNER, JOHN W. JR.	144, 1442
TURNER, MICHAEL	2079
TURNER, RICHARD	1157
TYNAN, TIMOTHY	3148
UIDENICH, J.	4092
ULFELDT, VIC & VIRGINIA	389
ULLOM, SHIRLEY	4148
ULMAN, TODD	3092
ULVANG, MYRA	1191
UMMEL, MARILYN	1725
UNGERSMA, DICK	1062
UNGRODT, B.	3257
UNITED STATES HANG GLIDING ASSOCIATION INCORPORATED	1658
UNITED STATES SKI ASSOCIATION	305
UPHAM, DAVID W.	3738

NAME	ID NUMBER
URBAN CREEKS COUNCIL	1594
URIBE, ERIC	582
US DEPARTMENT OF THE INTERIOR	25
US DEPARTMENT OF TRANSPORTATION	30
US ENVIRONMENTAL PROTECTION AGENCY	2213
US SKI ASSOCIATION, HOWARD PETERSON	1101
USDI - ENVIRONMENTAL PROJECT REVIEW	487
USDI - BUREAU OF LAND MANAGEMENT	2175
VAILANCOURT, DONNA	2024
VALKASS, MARILEE	3531
VALLE-RIESTRA, CHRISTOPHER	1598
VAN ANDERSON, JUSTIN	1063
VAN BRIESEN, JESSICA	1854
VAN DER NOORDAA, HANS	1217
VAN DUZEOR, DENIS	1143
VAN NATTAN, CHIP	671
VAN NESS, ANN	1713
VAN OPPEN, REE	1806
VAN STEENBERGEN, BERNICE	1487
VAN VALKENBURGH, BILL	4395
VANCE, CHRIS	2031
VARIAKOJIS, VILIA M.	4196
VARNEY, MARCELENE	1832
VAUGHAN, J.M.	1113
VAUGHAN, JEFF	1416
VAUPEN, JOAN	3260
VAZ-VIERA, PRISCILLA	3614
VCULEK, DAVE	1610
VEGO, LEROY	4286
VEIN, PHILLIP	3022
VENTURIAN, RICHARD J.	3315
VERBEHE, FRANK	2044
VERNON, LINDA E.	1339
VIELAND, PAUL	1716
VINJE, SVEIN	3239
VIRGINIA 4WD ASSOCIATION	2065
VOGE, CARL R.	3599
VOGEL, MAUREEN	4031
VOGEL, WILLIAM D.	3507
VOLHALL, WILLIAM	1877
VOLKMAN, JOY	1639
VON LAUE, MADELEINE	2137
VON WALDEN, P.	3209
VOORHEES, ALAN S.	4358
VORSTER, PETER	1795
VOSS, RONALD L.	1791
VOTAVA, DARCIE A.	419
WADDELL, ELISE K.	4422
WADE, EDMOND D.	4283
WADSWORTH, BILLY O.	4344
WAGGONER, ROBERT F.	2087
WAGNER, JOHN JR.	3172
WAHL, GREG	1667
WAKE, MICHAEL E.	1157

NAME	ID NUMBER
WALCHUK, JIM	4371
WALCZAK, THOMAS S.	1741, 3984
WALDMAN, NEWTON	3728
WALKER, ERICA	1564
WALKER, GREG W.	2024
WALKER, JOE	3098
WALKER, LINDA	4345
WALKER, LYNNA	333
WALKER, MARK	3443
WALKER, MARY	3188
WALKER, ROBERT V.	262
WALKER, SAM	3362
WALKER, SCOTT	4444
WALKER, SHELLEY B.	2096
WALLACE, ANN	1112
WALLACE, JEANNE	2111
WALLACE, LINDA	424
WALLER, ARLENE	1651
WALN, DUANE V. JR.	979
WALSH, MICHAEL	837
WALTER, JEANNE	1723
WALTER, PATRICIA	249
WALTER, RUTH P.	896
WALTER, THOMAS L.	309
WALTERS, NANCY	1973
WANDRAK, KARL	1640
WARBURTON, MICHAEL	320
WARD, GILBERT W.	3352
WARD, MARK D.	800
WARDRUP, CHARLENE	3585
WARHAFT, VAL & CHRIS	4212
WARNER, KATHRYN	2135
WARNER, SUSAN B.	1503
WARREN, DANIEL C.	399
WARREN, LISA	4099
WARREN, ROBERT	2161
WARREN, RUSSELL	4373
WARSASP, LARRY	3265
WASHINGTON, JOE	147
WATERBURY, DENISE	2177, 2199
WATERHOUSE, HAROLD	1804
WATERS, FRANK G. JR.	4124
WATKINS, ALICE	3114
WATSON, ROBERT	4353
WEATHERLY, FRED E.	2076
WEATHERLY, MARSHA L.	2089
WEATHERMAN, VIRGINIA	849
WEAVER, CYNTHIA	522
WEBB, ALLEN P.	3262
WEBER, GERALD	2070
WEBER, KEITH C.	3945
WEBSTER, NANCY C.	3449
WEEK, DOUGLAS H.	2002
WEHAUSEN, JOHN D.	1097

NAME	ID NUMBER
WEIDEMANN, WARREN	3270
WEIDERT, CARL	1516
WEIL, ALLEN & MANDELEN	77
WEINER, STEPHEN A.	3335
WEINROT, EDWIN Y.	4217
WEISHAN, ERIC	3879
WELCH, DON D.	3714
WELD, R.S.	2024
WELDON, LEE G.	1323, 3752
WELL, BRIAN	1133
WELLER, GEORGE A.	371
WELLER, NORMAN	1642
WELLS, ARTHUR C.	3427
WELLS, HARRIET	4326
WELLS, JACKIE	2144
WELLS, JACQUELINE B.	4420
WELLS, RICK	572
WENDELL, JOHN	709
WESER, MIKE	1526
WESER, PAUL	2134
WESSENDORF, RONALD	3373
WEST, CAROLYN	2124
WESTBROOK, BARBARA	1147
WESTBROOK, JANET	914
WESTERN TIMBER ASSOCIATION	1432
WESTINGTON, SCOTT	4004
WESTON, SCOTT	328
WESTWOOD VILLAGE ROTARY CLUB	2187
WETHERN, JASON	1060
WETTELAND, LANCE	3197
WETTELAND, LINDA C.	3144
WETTSTEIN, GERTRUDE, DANIEL & ANDREAS	1801
WETTSTEIN, MARCUS	1803
WEXLER, JEFFREY	78
WHEELER, BRYCE A.	1837
WHEELER, DENT	3921
WHITE, CHIP	4464
WHITE, COLLEEN	777
WHITE, DOUGLAS	894
WHITE, J.R.	3576
WHITE, JAMES M.	734
WHITE, JEAN	2024
WHITE, MICHAELA	1660
WHITE, RUSS	3962
WHITE, THOMAS B.	3261
WHITEIS, DONALD M.	843
WHITING, MARK	380
WHITMORE, GEORGE W.	1557
WHITNEY PORTAL NON-PROFIT CORPORATION	1278
WHITTEHER, SANDRA	1989
WHITTINGHAM, KAREN	4354
WICKERSHAM, BETTY	440
WICKMAN, JUDY L.	306
WIDEN, JEFF	1521

NAME	ID NUMBER
WIENS, M.J. JR.	3943
WIEST, BRIAN	1640
WIGGINS, THOMAS	4069
WILDER, MIKE	1044
WILDERNESS SOCIETY	2169
WILDING, MICHAEL	3149
WILK, CHRISTA & BILL	267
WILKINSON, BONNIE E.	229
WILKINSON, CATHERINE A.	4393
WILKINSON, CHRIS	4096
WILKINSON, K.	1640
WILLAHAN, TERRY M.	2111
WILLARD, DWIGHT M.	117
WILLIAMS, ANGELA M.	1157
WILLIAMS, FRANK	1329
WILLIAMS, GARY	3639
WILLIAMS, GARY	3882
WILLIAMS, JACK JR.	1053
WILLIAMS, LOUIS J.	1839
WILLIAMS, MARK	123
WILLIAMS, MIKE	89
WILLIS, DOREEN	1251
WILLIS, JAMES H.	1253
WILLIS, MEGAN	3600
WILLIS, REX	4265
WILSON, BRYAN	4193
WILSON, DENISE	664
WILSON, ERIC B.	3822
WILSON, JAMES	912, 2202
WILSON, MATHEW	1684
WILSON, RICHARD	479
WILSON, ROBERT	3291
WILSON, ROBIN	1286
WILSON, RUSSELL S.	1818
WILTGEN, JAMES	1284
WIND, HARM	3835
WINDES, BILL	1846
WINFORD, SHERILYN A.	216
WING, FRED	2028
WINNINGHAM, VIRGINIA	2024
WINSTEAD, TERRI	1213
WINTER, ARCHIE F.	1157
WINTER, CRAIG	1640
WINTERS, GINA	2086
WINTERS, LEONARD	3836
WINTERS, SANDRA J.	3419
WINTERSTEEN, M. LOUISE	1882
WINTUS, T.	1697
WINZENREAD, KATIE	1074
WINZENREAD, ROBERT	3001
WISDA, JAMES	452, 3521
WISENBAKER, EUGENE M.	1250
WISSON, ART	2163
WITTE, WENDELL	3109

NAME	ID NUMBER
WITTERS, RANDY	41, 2214
WITTWER, HAZEL	4329
WITTWER, J.R.	4131
WODNICKI, FRED	4498
WOLAR, GLYNN G.	950
WOLF, C.	3570
WOLFE, WILLIE	1157
WOLFE, WYNDON W.	3810
WOLFRAM, SUSAN	4168
WOLINSKY, MAURO	3870
WON, SHERWIN C.	3919
WOOD, BERNICA	1677
WOOD, DEBBIE	1937
WOOD, LINDA	3603
WOOD, PAULA	3797
WOOD, WILLIAM A.	477
WOODS, DON	1400
WOODS, NANCY	1008
WOODWOSK, PATRICK	273
WOOTAN, GEORGE	2174
WORCESTER, WENDY	3401
WORDEN, DANIEL	9
WORF, WILLIAM A.	489
WORKMAN, GEORGE H.	4022
WORLEY, R. EDWIN	1012
WORTHING, RALPH	3137
WOSSNER, COURTNEY	696
WRIGHT, CLIFFORD	1597
WRIGHT, CONNIE L.	955
WRIGHT, DAVID	4058
WRIGHT, DONNA M.	3679
WRIGHT, EDWIN	4057
WRIGHT, GRAHAM J.	145
WRIGHT, PATRICIA	1888
WRIGHT, W.S.	1157
WRIGHT, WILBUR W.	784
WRIGHT, WILL JR.	881
WUEST, BRITT	1765
WULLICH, JOHN R.	1851
WYCKOFF, ELIZABETH	3723
WYLIE, BLANCHE	1224, 1326
WYLIE, LAWRENCE A.	72
WYLIE, WILLIAM J.	1270
WYMAN, GEORGE	3909
YABLONICKY, G.J.	3105
YACOBOZZI, GABRIELLE T.	3377
YAEGER, PHILIP	4014
YAGER, DAVID	3393
YAMADA, B.	2132
YAMAMOTO, DAVE	4362
YAMAMOTO, MARK	4270
YAMARAKA, KEN	3958
YAMASHITA, FRED	3643
YAMASHITA, IRENE	1922

NAME	ID NUMBER
YANO, FLUER	169
YANZ, LORETTA J.	3596
YANZ, MIKE	626
YATA, HOWARD	3877
YAUAN, SUSIE	253
YEE, LEONARD	369
YEE, NORINE	2141
YERGAT, JOHN G.	977, 3818
YILLIK, R.	3781
YODER, VINCENT	2194
YOKOTE, GARY	4497
YOKOTE, LORAINE	5002
YOST, JIM	4418
YOST, TANNY	4198
YOUNG, ANNE L.	4315
YOUNG, BARRIE	4207
YOUNG, MICHAEL S.	1163
YOUNG, ROBERT J.	3380
YOUNGER, MARK D.	448
YRIBARREN, LOUIE & ILA	1192
YRIBARREN, RON & CATHY	1019
YUNGFLEISCH, J.O.	4210
YUSEM, DAVID T.	3331
ZABEL, DIXIE	342
ZACK, DEDE	675
ZACK, MILTON M.	3756
ZAKOS, THOMAS J. JR.	4061
ZALL, RICHARD	4222
ZAMOLKOW, DAVID A.	3913
ZANDES, STAN	1214
ZARING, ALAN	3319
ZARING, JENNIFER	885
ZENGE, BO	1640
ZERNAGEL, KELLER	31
ZERNE, STANLEY	770
ZIBAFT, SEAN	4170
ZIEBARTH, GARY W.	3796
ZIEBARTH, MARCI	1604
ZIEGENMEYER, ARDEN R.	1859
ZIEGLER, JUNE B.	31
ZIERENBERG, NANCY	170
ZILD, FRANK T.	814
ZIMMERMAN, P.A. MIKE	1186
ZIMMERMANN, GERRY	3043
ZINICOLA, GUY	3420
ZINN, ROGER	3190
ZINSER, KEITH	774
ZOOK, DWIGHT AND SUSAN	3526, 3527
ZOSCHKE, STEVEN H.	7
ZUMSTEIN, MARC & ETHEL	4456, 4476
ZUTI, LEE	988
ZWICK, JOEL L.	4179

Appendix B

FORPLAN
Resource Allocation Model and Analysis Process

APPENDIX B. THE RESOURCE ALLOCATION MODEL AND ANALYSIS PROCESS

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. Information presented supplements the broader and less technical descriptions that are included in the body of the DEIS.

Because of the complexity of the planning process, the large variety of land units, and the possible management activities that could be applied, a number of mathematical models were needed to conduct the analysis.

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. 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. Wildlife Habitat Capability Models were used to estimate effects on wildlife and fish populations. An income and employment model was built using the RIMS system in order to estimate income and employment effects from changes in Forest outputs. A more detailed description of each of these models is included in this appendix.

THE FOREST PLANNING MODEL (FORPLAN) 1/

Overview

FORPLAN is a specialized matrix generator and report writer for a standard linear programming algorithm (FMPS) 2/. Linear programming is a mathematical technique for solving simultaneous linear equations subject to a certain set of constraints and a particular objective function.

1/ 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.

2/ FMPS = Acronym for functional math program subsystem, the linear program code used on the Univac 1100 series computer.

This is expressed mathematically as:

Maximize: $z = c_1x_1 + c_2x_2 + ..c_nx_n$ (Objective function)

Subject to: $a_{11}x_1 + a_{12}x_2 + \ldots a_{1n}x_n \leq b_1$

$a_{21}x_1 + a_{22}x_2 + \ldots a_{2n}x_n \leq b_2$ (Constraint Set)

$a_{m1}x_1 + a_{m2}x_2 + \ldots a_{mn}x_n \leq b_m$

$x_i \geq o$

These mathematical expressions can also be shown as 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)	$a_{11}x_1$	$a_{12}x_2$	$a_{13}x_3$	$a_{1n}x_n$	$\geq$	b_1
Row i = 2 (Acres)	$a_{21}x_1$	$a_{22}x_2$	$a_{23}x_3$	$a_{2n}x_n$	$\leq$	b_2
Row i = m	$a_{m1}x_1$	$a_{m2}x_2$	$a_{m3}x_3$	$a_{mn}x_n$	=	b_m
				x_j	$\geq$	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 acres; row m might represent recreation). The columns j = 1 to 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 values 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:

$$a_{11}x_1 + a_{12}x_2 + a_{13}x_3 \ldots a_{1n}x_n \geq b_1$$

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 Inyo National Forest, the resulting model contained approximately 13,305 columns and 2,219 rows. Once the model was formulated, 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, mininum 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 (see following sections of this appendix).

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 non-priced benefits by measuring the amount of present net value (PNV) foregone. The final criterion used to evaluate alternatives was net public benefit (NPB), which is the PNV plus consideration of nonpriced Forest resource benefits.

Management activities modeled in FORPLAN were determined by the interdisciplinary (ID) team. This pre-FORPLAN analysis included identifying:

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 provided the basis for a matrix of all possible management activities which could be modeled and their associated costs, outputs, and effects.

Activities which were desired but not modeled as one of the above FORPLAN inputs required the use of additional constraints.

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) factors. All land within a capability area is homogeneous in its ability to produce resource outputs and in its production limitations. The Forest has 9,400 Capability Areas.

Capability Areas were developed by overlaying existing map information. (See Table 1 for examples of the type of map information used.) 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 interdisciplinary team 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. This information was entered into a computerized data base system (Intel's System 2000). Once entered into the system, information on Capability Areas could be retrieved, sorted, aggregated, and analyzed.

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 that would probably respond in a like manner to management activities. Each capability area was given an analysis area identifier so the data base could be queried for the land information needed to build the FORPLAN model.

The delineation of the analysis areas required several steps. First, resource specialists on the interdisciplinary 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 FORPLAN was guided by the problems identified by the Forest issues, concerns, and opportunities.

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 specialists was greater than could be used. This forced the interdisciplinary 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 attributes finally chosen were roaded status, potential ski areas, vegetation and special land groups, slope, and vegetation strata (species, size classes, and stocking). It should be noted that roaded status was selected as a level identifier, both to introduce the important costs of developing access for resource management, and to allow tracking of possible yields from each of the California Wilderness Act roadless areas on the Forest. The other level identifiers are necessary to analyze the biological production potential of an analysis area.

The criteria used to develop analysis areas are the level identifiers in FORPLAN. The level identifiers used are shown in Figure B-1. Data reliability and the need to respond to issues related to specific geographic areas (recreation zones, further planning areas, etc.) played a major role in the delineation of analysis areas. In many cases, the data reliability for Capability Areas was such that large numbers of 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 Inyo's data base has a total of 300 analysis areas based on actual National Forest System acres and 4 analysis areas not representing real acres. Analysis areas that do not represent

actual land area, represent instead developed and dispersed recreation facilities, or program levels such as fire management.

Table 1
Level Identifiers Used in FORPLAN

Level 1

CONC	CONCENTRATED RECREATION AREAS	047	SAN JOAQUIN
OPENNF	OPEN NATIONAL FOREST LANDS	048	GRANT LAKE
OTHOWN	LANDS IN OTHER OWNERSHIP	049	HORSE MEADOW
SKI	EXISTING SKI AREAS	050	TIOGA LAKE
SPEC	SPECIAL INTEREST AREAS (RNAs, ETC.)	051	HALL NATURAL AREA
		052	LOG CABIN SADDLEBAG
WILD	EXISTING WILDERNESS	053	DEXTER CANYON
029	SOUTH SIERRA	054	GLASS MOUNTAIN
030	WONOGA PEAK	055	WATTERSON
031	INDEPENDENCE CREEK	056	BENTON RANGE
032	TINEMAHA	057	DEEP WELLS
033	COYOTE SOUTHEAST	058	WHITE MOUNTAINS
034	COYOTE NORTH	059	BLANCO MOUNTAIN
035	TABLE MOUNTAIN	060	BIRCH CREEK
036	NORTH LAKE	061	BLACK CANYON
038	BUTTERMILK	062	SOLDIER CANYON
039	HORTON CREEK	063	ANDREWS MOUNTAIN
040	WHEELER RIDGE	064	PAIUTE
041	NESSIE	288	MONO CRATERS
042	ROCK CREEK WEST	296	SUGARLOAF
043	WHISKY CREEK	988	MT. OLSEN
044	NEVAHBE RIDGE	989	EXCELSIOR
045	LAUREL MCGEE	MONOLK	MONO BASIN NFSA
046	SHERWIN	WESTSD	WESTSIDE HYW. 395

Level 2

ALPOT	ALPINE SKI AREA POTENTIAL

Level 3 (not used)

Level 4

BARWAT	BARREN OR WATER	PLNTAT	PLANTATION
MXBRSH	MIXED BRUSH	OTHOWN	LANDS IN OTHER OWNERSHIP
NONCOM	NONCOMMERCIAL TIMBER		
PINYON	PINYON-JUNIPER	SPEC	SPECIAL INTEREST AREAS
SUBRSH	SUITABLE BRUSH		
SUITMBR	SUITABLE TIMBER	WILD	EXISTING WILDERNESS

Level 5

0-30% SLOPE	61+
31-60	ALL SLOPES

Table 1 (continued)
Level Identifiers Used in FORPLAN

Level 6

BBR2A	BITTERBRUSH
BSG2A	BIG SAGEBRUSH
CMG2A	MOUNTAIN MAHOGANY
PLANTAT	PLANTATION
L3P	LODGEPOLE, MEDIUM SAWTIMBER, POOR STOCKING
P2P	JEFFREY PINE, SMALL POLE & SAWTIMBER, POOR STOCKING
P2S	JEFFREY PINE, SMALL SAWTIMBER, SPARSE STOCKING
P2G	JEFFREY PINE, SMALL SAWTIMBER, GOOD STOCKING
P4P	JEFFREY PINE, MED-LARGE SAWTIMBER, POOR STOCKING
P4S	JEFFREY PINE, MED-LARGE SAWTIMBER, SPARSE STOCKING
P6G	JEFFREY PINE, TWO-STORIED STANDS, GOOD STOCKING
R4X	MIXED CONIFER, MED-LARGE SAWTIMBER, VARIABLE STOCKING
R6G	RED FIR, TWO-STORIED, GOOD STOCKING

Management areas are delineated based on geopolitical factors (such as administrative boundaries, issue orientation, historical use patterns, access, landform, and vegetation type) and are used to facilitate administration or plan implementation. Management areas are delineated on a map accompanying the Plan.

It is easier for a land manager to deal with specific geographical areas, such as watersheds, than with prescriptions that may be assigned to many different locations. Often, geographic areas will have unique issues and concerns, even though the assigned prescriptions may be the same as its neighbors. Therefore, the Forest was divided into twenty Management Areas, which are contiguous lands in some identifiable geographic location, such as the White Mountains.

Prescriptions

A prescription is a 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 describe what could be done (i.e., the possibilities) on that analysis area. FORPLAN is used to determine what should be done given the constraints and objective function for an alternative.

Management distinguishes between FORPLAN prescriptions and Management Prescriptions. FORPLAN prescriptions are sets of activities which could occur on the analysis areas that are modeled in FORPLAN. They are specific activities that are written without imposition of the standards and guidelines. Management Prescriptions are written as a result of delineating objectives of an alternative, or allocating specific land areas to FORPLAN prescriptions and imposing the standards and guidelines. The management prescription includes the FORPLAN prescription as one of its parts, but is broadened to include additional practices and direction needed to meet

standards and guidelines and to be comprehensive of all resource activities for field implementation.

FORPLAN prescriptions were developed by the interdisciplinary team to respond to issues and to represent the range of management opportunities. They were developed to represent five general conditions or levels of management intensity: minimum level of management, management below current levels, current level of management, management at a greater intensity than current management, and management at the maximum intensity level that is implementable. Past experience and cost data were used to determine the most cost efficient mix of practices to achieve the objectives at each level of management intensity.

These prescriptions were quantified in terms of 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.

FORPLAN prescriptions were developed to allow consideration of a full range of management activities on the analysis areas (see Table 2). 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 prescription choices available for consideration is one type of constraint which was used to formulate alternatives and benchmarks. See Table 3 for a comparison of FORPLAN and Management Prescriptions, including prescriptions that are available for different catagories of analysis areas.

The following is a brief description of the Forest's FORPLAN prescriptions (including their alphabetical codes).

Table 2
Summary Description of FORPLAN Prescriptions

MINLVL Minlevel applies minimum custodial direction for all resources to all analysis areas. For the most part, only background outputs occur. There are no associated developed recreation, range, or timber outputs. The fire program is maintained at a level needed to protect public safety from the threat of fires originating on National Forest land.

CCW/O Clearcut is the removal of all merchantable commerical trees within a stand, without any thinnings prior to that clearcut. The objective of this method is to establish a new, fully-stocked stand.

SHW/O Shelterwood without any thinnings prior to that shelterwood. Shelterwood is cutting all but 8 to 12 overstory trees per acre and planting. The overstory trees are removed the next decade.

Table 2 (continued)
Summary Description of FORPLAN Prescriptions

CCW/TH	Same as CCW/O, except growing stock above desired levels may be thinned each decade.
SHW/TH	Same as SHW/O, except growing stock above desired levels may be thinned.
OVRREM	Removal of overstory from a two-storied stand, followed by management as CCW/TH or SHW/TH.
UNEVEN	Same as CCW/O and CCW/TH, except opening are limited to 3 to 5 acres, at least 3 age classes with 20 years between age classes in the stand and 80 to 140 acres in a managed uneven aged stand.
SALVAG	Salvage. Occasional removal of scattered dying trees. Does not include large fire or insect salvage sales.
STANDM	Stand maintenance. Stand management guided by a resource other than timber.
HMPIBB	High range development with high utilization includes: one-mile pipe and trough, 4-mile fence, rejuvenate and seed 1.5 percent per year, and livestock utilize 60 percent of annual forage production on 500-acre unit of bitterbrush.
HWPIBB	High range development with moderate utilization includes: one-mile pipe and trough, 4-mile fence, rejuvenate and seed 1.5 percent per year, and livestock utilize 50 percent of annual forage production on 500-acre unit of bitterbrush.
MEPIBB	Moderate range development with lower utilization includes: one-mile pipe and trough, 4-mile fence, rejuvenate and seed 1.0 percent per year, and livestock utilize 40 percent of annual forage production on 2,000-acre unit of bitterbrush.
HMPIBS	High range development with high utilization includes: one-mile pipe and trough, 4-mile fence, type convert and seed 10 percent per year, and livestock utilize 60 percent of annual forage production on 500-acre unit of big sage, non-commercial timber, non-suitable timber or pinyon.
HWPIBS	High range development with moderate utilization is the same as HMPIBS, except livestock utilize 50 percent of annual forage production.
EXMTBB	Maintain existing structures in bitterbrush.
EXMTBS	Maintain existing structures in big sage.
EXMTPN	Maintain existing structures in pinyon and non-commercial timber.

Table 2 (continued)
Summary Description of FORPLAN Prescriptions

EXMTOT	Maintain existing structures in other than above-mentioned lands.
BRRELW	Brush release on winter deer range to rejuvenate brush to an earilier seral stage. Brush rejuvenation would take place through one of several methods using either herbicides, prescribed fire, or mechanical equipment as appropriate.
BRRELS	Brush release on summer deer range to rejuvenate brush to an earlier seral stage. Brush rejuvenation would take place through one of several methods using either herbicides, prescribed fire, or mechanical equipment as is appropriate.
LSTLOW	The low intensity stream prescription applied to streams that have a low quality fish habitat rating. Activities include planting and seeding of streambanks, and fencing to protect streambanks and riparian vegetation from grazing.
LSTMOD	The low intensity stream prescription applied to streams that have a moderate quality fish habitat rating. Activities include planting and seeding of streambanks, and fencing to protect streambanks and riparian vegetation from grazing.
MSTLOW	The moderate intensity stream prescription applied to streams that have a low quality fish habitat rating. Activities include planting and seeding of streambanks and fencing to protect streambanks and riparian vegetation from grazing. Additionally, instream structures are used to improve the fish habitat.
MSTMOD	The moderate intensity stream prescription applied to streams that have a moderate quality fish habitat rating. Activities include planting and seeding of streambanks and fencing to protect streambanks and riparian vegetation from grazing. Additionally, instream structures are used to improve the fish habitat.
HSTLOW	The high intensity stream prescription applied to streams that have a low quality fish habitat rating. Activities include planting and seeding of streambanks and fencing to protect streambanks and riparian vegetation from grazing. Additionally, streambank armoring is used to protect or enhance streambank stability.
HSTMOD	The high intensity stream prescription applied to streams that have a moderate quality fish habitat rating. Activities include planting and seeding of streambanks and fencing to protect streambanks and riparian vegetation from grazing. Additionally, streambank armoring is used to protect or enhance streambank stability.

Table 2 (continued)
Summary Description of FORPLAN Prescriptions

WATDEV	The water development prescription includes both structures and/or protective measures to ensure water within an area where it is limited or unavailable for use. Two types of activities are included: spring development or design and construction of guzzlers and catchments.
FENCE	This activity includes all types of fencing (drift, standard, electric, etc.) to protect an area (usually a wet meadow). Usually refers to exclusion of cattle.
WEIMDM	The watershed activity which includes rock armoring of headcuts and streambanks, planting willows along streams, and seeding grasses and legumes.
WEIMDH	This activity provides rock armoring of headcuts and streambanks, willow plantings along streams, seeding grasses and legumes, and placement of gully plugs.
WEIMDF	This activity involves rock armoring of headcuts and streambanks and fencing meadows to control livestock use.
DEVSTD	Public Standard. Developed recreation at standards includes the administration, operation, and maintenance of sites and areas to full standard management objectives. Site facilities are maintained in a satisfactory condition to meet standards and objectives for public health, safety, comfort, and convenience. Facilities are maintained to RIM Condition Class I. Private Standard. The administration of recreation-related permitted use of National Forest lands. Includes permits granted to other public organizations or private permittees and sites and facilities owned by the Forest Service, but operated by others under permit or agreement. Sites and facilities are operated and maintained to the full terms of the permit for health, safety, comfort, and convenience of the user.
DEVLOW	Developed recreation at low standard includes administration, operation, and maintenance of sites and areas at low standard management levels. Public health and safety and site protection requirements are met, but desired standards and objectives for visitor comfort and convenience are not met.
DEVHAB	Rehabilitation of developed sites includes feasibility studies and project plans for rehabilitation to return sites to designed capacity. Includes rehabilitation of sites and facilities that do not meet present standards. Facilities in RIM Condition Classes 2-5 are upgraded to Condition Class 1. Resource treatment and site protection are also accomplished. Capacity of sites does not increase.

Table 2
Summary Description of FORPLAN Prescriptions

DEVCON	Public Construction. Construction of developed sites includes developing plans, specifications, and a contract package along with construction of new recreation sites (including all developed site facilities in the design). The newly developed site or addition to an existing site provide additional capacity. Private Construction. Development of a prospectus and plans, and issuance of a permit for construction of a privately developed facility. The newly developed site or addition to an existing site provide additional capacity. (Developed recreation capacity was based on types of existing and potential developed sites, as shown in the current recreation inventory data and projection of this use.)
SHTDWN	The elimination of developed recreation areas and all facilities and improvements, including restoration of on-site resources to meet public safety and site-protection requirements. This action results in a reduction of capacity.
DISSTD	Standard level of dispersed recreation management includes maintaining roads and trails at assigned standards for public safety and resource protection. Use can approach design capacities and provide a safe and quality recreational experience.
DISLOW	Dispersed recreation management at low standard includes maintaining roads and trails at basic custodial levels to protect investments and minimize damage to adjacent land and resources. Facility capacity and use can be expected to be at less than design capacity. Meets standards for public safety, but not for user comfort and convenience.
DISCON	Dispersed recreation construction includes planning, design, and construction of new trailheads and trails. The facilities are to be permanent, and construction and maintenance are to be at full design standards. An increase in RVDs and capacity can be expected.
DISHAB	Dispersed recreation rehabilitation includes the reconstruction of existing roads and trails to original design standards, and when maintained at this level, to provide full public safety, comfort, convenience, and protection of adjacent land and resources. Use may increase to designed capacity.
CURCUR	The current fire program at current funding represents the existing (1982) percentage combination of suppression, detection, and prevention in the fire program at current funding levels.

Table 2 (continued)
Summary Description of FORPLAN Prescriptions

CUR-40	The current fire program at minus-40-percent funding represents existing percentage combination of suppression, detection, and prevention in the fire program with a 40-percent across-the-board reduction in funding.
CUR-20	The current fire program at minus-20-percent funding represents existing percentage combination of suppression, detection, and prevention in the fire program with a 20-percent across-the-board reduction in funding.
CUR+20	The current fire program at plus-20-percent funding represents existing percentage combination of suppression, detection, and prevention in the fire program with a 20-percent across-the-board increase in funding.
CUR+40	The current fire program at plus-40-percent funding represents existing percentage combination of suppression, detection, and prevention in the fire program with a 40-percent across-the-board increase in funding.
SUPCUR	The suppression fire program at current funding increases emphasis placed on the suppression element of the fire program by increasing its percentage share of the total fire budget. The total fire budget is then held at its current level.
SUP-40	The suppression fire program at minus-40-percent funding increases emphasis placed on the suppression element of the fire program by increasing its percentage share of the total fire budget. The total fire budget is then decreased 40 percent below current level.
SUP-20	The suppression fire program at minus-20-percent funding increases emphasis placed on the suppression element of the fire program by increasing its percentage share of the total fire budget. The total fire budget is then decreased 20 percent below current level.
SUP+20	The suppression fire program at plus-20-percent funding increases emphasis placed on the suppression element of the fire program by increasing its percentage share of the total fire budget. The total fire budget is then increased 20 percent above current level.
SUP+40	The suppression fire program at plus-40-percent funding increases emphasis placed on the suppression element of the fire program by increasing its percentage share of the total fire budget. The total fire budget is then increased 40 percent above current level.
PRVCUR	The prevention fire program at current funding increases emphasis placed on the prevention element of the fire program by increasing its percentage share of the total fire budget. The total fire budget is then held at its current level.

Table 2 (continued)
Summary Description of FORPLAN Prescriptions

PRV-40	The prevention fire program at minus-40-percent funding increases emphasis placed on the prevention element of the fire program by increasing its percentage share of the total fire budget. The total fire budget is then decreased 40 percent below current level.
PRV-20	The prevention fire program at minus-20-percent funding increases emphasis placed on the prevention element of the fire program by increasing its percentage share of the total fire budget. The total fire budget is then decreased 20 percent below current level.
PRV+20	The prevention fire program at plus-20-percent funding increases emphasis placed on the prevention element of the fire program by increasing its percentage share of the total fire budget. The total fire budget is then increased 20 percent above current level.
PRV+40	The prevention fire program at plus-40-percent funding increases emphasis placed on the prevention element of the fire program by increasing its percentage share of the total fire budget. The total fire budget is then increased 40 percent above current level.

Table 3
Comparison of FORPLAN Prescriptions and Management Prescriptions

FORPLAN Rx Alpha Abrev. Code	Description	Analysis areas which include the prescriptions as eligible choices	Corresponding Management Rx
MINLVL	Minimum Level - This allocation usually represents no active management practice.	All analysis areas	This FORPLAN Rx overlaps all Management Rxs
Timber CLW/O SHW/O CCW/th OVRREM SALVAG UNEVEN STANDM	Timber harvest under a variety of silvicultural systems ranging from sanitation harvest to intensive clear-cutting.	All analysis areas with C.A.S. timber except designated wilderness and Mono Lake National Forest Scenic Area.	9. Modified Tbr Management 10. High Level Timber Mgt. 11. Range 12. Concentrated Recreation Area
Range HMPIBB HWPIBB MEPIBB HMPIBS WPIBS EXMTBB EXMTBS EXMTPN EXMTOT	Livestock grazing with water developments, fencing, vegetation rejuvenation and type conversion.	Analysis areas with suitable acreage forage production.	FORPLAN Rxs are compatible with all Mgt. Rxs (with some limitations) except Dev. Rec. and RNA Rxs
Wildlife BRRELW BRRELS WATDEV FENCE	Wildlife habitat improvements through vegetation rejuvenation, water developments and fencing.	Only analysis areas with inventoried suitable wildlife habitat.	3. Mountain Sheep Habitat 4. Mule Deer Habitat 9. Modified Timber Mgt. 10. High Level Timber Mgt. 11. Range 13. Conc. Rec. 14. Semi-prim Recreation
Fish Project LSTLOW LSTMOD MSTLOW MSTMOD HSTLOW HSTMOD	Instream projects to improve fisheries habitat.	Project analysis area based on streams suitable for fish habitat improvements.	FORPLAN Rxs compatible with all Mgmt. Rxs. except #5, RNA.

Table 3 (continued)
Comparison of FORPLAN Prescriptions and Management Prescriptions

FORPLAN Rx Alpha Abrev. Code	Description	Analysis areas which as eligible choices	Corresponding Management Rx
Recreation DEVCON DEVLOW DEVSTD DEVHAB SHTDWN DISSTD DISLOW DISCON DISHAB	Developed and dispersed recreation Rxs. Management options include new construction, rehabilitation of low standard facilities, full service management, and SHTDWN of sites.	Apply only in concentrated recreation areas, ski areas, potential ski, Further Planning Areas, and wilderness areas.	FORPLAN Rxs are compatible with a broad range of management prescriptions with specific limitations.
Fire CURCUR CUR-40 CUR-20 CUR+20 CUR+40 SUPCUR SUP-40 SUP-20 SUP+20 SUP+40 PRVCUR PRV-40 PRV-20 PRV+20 PRV+40	Wildfire acres burned, suppression costs, and net resource value change were developed for each of the 15 fire program options available in FORPLAN. The model selected a single fire program per decade based on PNV.	All analysis areas with a fire history have a probability of burn factor associated with a net change coefficient based on the current program. A special analysis area was used to evaluate the efficiency of the fire program options with changes in acres burned by alternative.	Wildfire program options are compatible with a broad range of prescriptions with some specific limitations.
Watershed Projects WETMDF WETMDH WETMDW	Activities to rehabilitate degraded wet meadows and watersheds.	Project analysis area based on all wet meadows and watershed acres needing special management.	FORPLAN Rxs are compatible with Management Area Prescriptions except #5.,RNA

Time Periods

To assure that the scheduled timber harvest can be achieved and maintained, a 16-decade planning horizon is used in FORPLAN. The first decade of the planning horizon is the period 1986-1995, and is the primary period for which the Forest Plan applies. 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.

Outputs

Outputs are classified as either scheduled or non-scheduled outputs. Both types depend on the prescriptions chosen for each analysis area, but only scheduled outputs depend on the timing of the prescriptions. It is not possible to schedule all outputs through FORPLAN because of modeling limitations, but it is essential to include those that are closely related to the activities being performed on the Forest and that have significant impacts on PNV. Listed in Figure B-4 are the outputs tracked in the planning process.

Outputs are estimated with the use of 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 of the FORPLAN model. The processes used by the interdisciplinary team to develop the coefficients are summarized in Table 5. For a detailed discussion of yield coefficients, see the FORPLAN coefficient documentation in the planning records or in individual resource FORPLAN records.

Table 4
Outputs Used in the Analysis

Output	Unit of Measure	Scheduled	Non-Scheduled	Inside FORPLAN	Outside FORPLAN
Timber	MCF	X		X	
Timber suitable lands	Acres		X	X	
Optimal LTSY	MCF		X	X	
Optimal ending inventory	MCF		X	X	
Minimum ending inventory	MCF		X	X	
Fuelwood	Cords	X		X	
Range	AUM	X		X	
Water yield	Ac Ft	X		X	
Watershed improvements	Acres	X		X	
Water quality	AcFt	X			X
Developed rec.	RVD	X		X	
ROS class	Acres	X			X
Dispersed rec.	RVD	X		X	
Land acq.	Acres	X			X
Cultural res.	Acres	X			X
Program cost	Dollars	X		X	
Wildlife and fish use	WFUD	X		X	
Wildlife habitat	Acres	X		X	
Fish habitat	Acres	X		X	
Animal number	Number	X			X
T & E species	Acres	X			X
-Bald eagle	Pairs	X			X
-Peregrine falcon	Pairs	X			X
-Lahonton Cutth.Tr.	Acres	X			X
-Pauite Cutth.Tr.	Acres	X			X
Fish	Pounds	X			X
Goshawk	Pairs	X		X	
Wildfire loss	Acres	X		X	
Road constr.	Miles	X			X
Road reconstr.	Miles	X			X
Trail constr.	Miles	X			X
Trail recon.	Miles	X			X
Facilities	Number	X			X
Minerals					
-locatable	Plans	X			X
-leasable	Plants	X			X
Visual quality	Index #	X			X
Human resource	Enrollee	X			X

Table 5
Summary of Yield Coefficients

	Inside FORPLAN
Timber (MCF)	Timber yield coefficients were based on Forest inventory completed in 1975 and updated in 1982. A computer program called RAMPREP was used to predict yield coefficients over time for each timber stratum based on volume, age, and growth rate.
Optimal Long-Term Sustained Yield (MCF)	The long-term sustained yield is the maximum timber harvest level that can be maintained indefinitely. This is calculated as a nonscheduled output, based on the highest sustained yield shown for each regional timber type in the regeneration yield tables produced from the RAMPREP model.
Timber-Suitable Lands (Acres)	Timber-suitable lands are those C.A.S. lands to timber management base for each alternative analyzed. This is a nonscheduled output of timber lands assigned to timber Management Prescriptions.
Optimum/minimum Ending Inventory (MCF)	The optimum/minimum ending inventory sets the range, based on CMAI, which the standing timber inventory be within or above in order to assure LTSY. These non-scheduled outputs are based on sustained yield and regeneration yield tables produced from the RAMPREP model.
Fuelwood (cord)	Yield of cordwood was developed based on historic outputs, timber strata, age, and thinning volumes from RAMPREP data.
Range (AUM)	These coefficients yield the AUMs per acre for all range land. They were developed by range conservationists based on posted and existing grazing yield for specific types of brush vegetation. Yields from type conversions of non-commercial and unsuitable timber lands were developed using expected range forage production, selected publications and capital investments for range production.
Water Yield	Water yield coefficients were based on historic precipitation and stream flow data. Vegetation removal for timber managment or ski area development was the only potential means for increasing water yield through management practices. Factors such as soil permeability, precipitation, vegetation, and wilderness designation limited Forest-wide suitability for increased water yield to the timbered lands east of San Joaquin Ridge.

Table 5 (continued)
Summary of Yield Coefficients

Output	Process used for developing yield coefficients
Watershed Improvements	The effects of watershed improvements are based on known historic sediment rates on specific streams of WIN-inventoried areas (Kern Plateau, Coyote Mtn., Buttermilk, Horse Mdw., Pizona, White Mtn. and Glass Mtns). The model was forced to rehabilitate some deteriorated watershed lands and to reduce the restoration backlog by applying a technical threshold constraint limiting sediment production to less than 2.911 tons per decade. Coefficients representing the amount of sediment reduction associated with each acre of restoration by intensity of watershed activity were developed. Once the threshold sediment rate was attained, the model had the option of continuing watershed improvement activities or selecting among other activities based on PNV. The sediment coefficients were derived from historic data of WIN-inventoried damaged acres and were applied only to those acres, not Forest-wide. No constraints or associated yield tables were linked to any FORPLAN prescriptions outside the single analysis area containing the WIN-inventoried acres. All the coefficients were developed by the Forest hydrologist in conjunction with the Forest soil scientist and wildlife biologist, based on monitoring activities needed to reduce streambank erosion and sedimentation in streams and wet meadows, scientific literature, and data from adjacent Forests.
Recreation Dispersed (RVD)	All dispersed recreation use, (including wilderness use was based on RVDs for various activities from recreation information management (RIM) data. Dispersed recreation (including wilderness) coefficients were based on current use and the existing inventory of roads, trails, and trailheads. Recreation specialists also inventoried potential for new trails and trailheads, and assumed similar rates of use to determine dispersed recreational capacity coefficients. Dispersed recreation use is valued only to demand capacity in FORPLAN.

Table 5 (continued)
Summary of Yield Coefficients

Output	Process used for developing yield coefficients
Recreation Developed (RVD)	All developed recreation use is based on RVDs for various activities from recreation information management (RIM) data. Developed recreation coefficients were based on inventoried existing developed sites and their PAOT (persons-at-one-time) capacities. The coefficients were derived from practical capacity on a per-acre basis. An inventory of potential developed recreation sites was used to determine potential capacity on the Forest.
Wildlife User Days (WFUD)	WFUDs are a subset of dispersed RVDs. An initial amount of WFUDs are based on RIM estimates. A background coefficient of WFUDs was applied to account for the level of use that would be expected to occur where no special management is implemented. In addition, coefficients were developed to reflect increased WFUD use based on prescriptions that enhance habitat capability for species that create WFUD use. For wildlife, the assumption was that deer are the major factor affecting wildlife-related use. Habitat capability provided on an acre of deer winter or summer range land (which may be improved or reduced as a result of management activity) was translated into user-day coefficients by a formula utilizing hunter success, days hunted, and percent of population harvested. These coefficients were developed by the Forest wildlife biologist, in conjunction with the California Department of Fish and Game.
Fish User Days (WFUD)	Cold water fish (trout) coefficients were developed using a similar process to that of wildlife WFUD development to reflect the number of fish user days. Fish WFUD coefficients were related to fishing success, fish populations, and streams with additional habitat capability. Again, background levels of use occur regardless of management and fisheries improvements. Increases in fish user days occur as a result of applying habitat improvement projects modeled in FORPLAN to enhance and increase fish habitat, thus improving fishing success. These coefficients were developed by the Forest wildlife biologist, in conjunction with the California Department of Fish and Game.

Table 5 (continued)
Summary of Yield Coefficients

Output	Process used for developing yield coefficients
Induced Wildlife/ Fish User Days (WFUD)	WFUDs attributed to other than direct wildlife and fish Management Prescriptions are considered induced WFUDs and were also tracked in FORPLAN. Induced wildlife coefficients were associated with specific range prescriptions when applied to deer winter or summer range. The coefficients were based upon wildlife habitat types, background levels of wildlife use, types of proposed range developments, and intensity of range utilization. Fish-induced coefficients were associated only with specific watershed Management Prescriptions applied to specific riparian areas. These coefficients were based upon stream habitat capability, acres of stream improvement, types of watershed improvements, and increased fish habitat. These coefficients were developed by the Forest wildlife biologist, in conjunction with the California Department of Fish and Game.
Goshawks (pairs)	Core nest areas for goshawks were modeled in FORPLAN. The coefficients were based on Regionally defined acreage requirements necessary for a viable population and were applied to the capable, available, and suitable timber lands. About 450 suitable timber acres were removed from the regulated cut for goshawk nest site protection to meet the minimum management requirement of nine nesting pairs. Unregulated timber yields from those acres would be permissible when appropriate for habitat requirements of this species.
Wildfire Loss net (Acres)	Burned acres, with associated suppression costs and resource value change due to wildfire were modeled in FORPLAN. The amount of wildfire expected to occur was developed for three different fire program options (i.e. program strategies, such as prevention emphasis or suppression emphasis) using the FIREPLAN Initial Attack Model. These were integrated into FORPLAN and the expected wildfire acres occurring is related to the fire program option and budget level selected by FORPLAN.
Effective Alteration (Acres)	Coefficients for effective alteration (EFFALT) track the acres of vegetation visually modified by regeneration cutting. The coefficients were developed based upon type of vegetative strata, growth rates and visual characteristics.

Table 5 (continued)
Summary of Yield Coefficients

Output	Process used for developing yield coefficients
Program Costs (dollars)	This is the sum of fixed costs for minimum level management, the cost for the fire program, and all costs not directly associated with a single resource, as watershed and fisheries projects. All costs were developed by resource staff officers and the Forest economist, using past records.
	Outside FORPLAN
Animal numbers	Wildlife animal numbers were predicted based on their habitat requirements. Using WHR (wildlife habitat relationships) types and expected habitat changes over time, animal numbers were estimated for each alternative.
T&E Species	The Forest currently provides suitable habitat for the endangered bald eagle and peregrine falcon, as well as the threatened Lahontan and Paiute cutthroat trouts. These species can be maintained at levels to meet recovery objectives by following established Forest direction and proposed standards and guidelines. These species were not included in the model, as they are assumed to maintain current populations or to reach recovery objectives in all benchmarks and alternatives.
Pounds of Fish	Pounds of fish were calculated as a function of miles of stream, existing stream condition, and acres of stream improvement.
ROS (acres)	Acres by recreation opportunity spectrum (ROS) class were based on the existing physical setting, scheduled recreation development, timber harvesting, and road and trail construction and/or obliteration. Administrative setting (e.g, ORV restrictions) was also considered.
Road Construction	The construction of roads for new developed recreation facilities and for timber harvest access were estimated outside FORPLAN based on a transportation plan developed from aerial photos, developed recreation inventories, net acres of timber harvested, and local knowledge. The costs of road construction were embedded into the timber and developed recreation cost; however, the actual road mileage constructed was not an output from FORPLAN.

Table 5 (continued)
Summary of Yield Coefficients

Output	Process used for developing yield coefficients
Road Reconstruction	Road reconstruction is based on existing road inventory and maintenance plans. Costs for these activities were developed from historical timber and developed and dispersed recreation data and embedded in the costs for these resources in FORPLAN. The actual mileage of road reconstruction was not tracked in the model.
Trail Construction (miles)	Trail miles and trailheads were calculated outside FORPLAN based on the current trail system, areas allocated to wilderness, and the potential trails and trailheads available for dispersed recreation activities. Costs for these facilities and potential facilities were developed from historical data and embedded in the dispersed recreation and wilderness costs in FORPLAN.
Trail Reconstruction (miles)	Trail reconstruction is based on the existing trail inventory and reconstruction program. Costs are embedded in FORPLAN as part of wilderness and dispersed recreation costs; miles were generated outside the model.
OHV areas (miles and acres)	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 recreation staff developed the outputs for miles of open, closed, and seasonal ORV roads and trails and ORV open areas.
Minerals	The predicted number of operating plans was based on mineral potential of acres available for mineral entry in relation to the current availability and number of plans. It was assumed that geothermal energy development would occur in Lease Blocks I and II in all alternatives and benchmarks. Based on stipulations made in the environmental assessments for these lease blocks, it was estimated that 6 power plants would be producing 250 megawatts of electrical power annually by the end of the planning horizon. This benefit was embedded in FORPLAN.

Table 5 (continued)
Summary of Yield Coefficients

Output	Process used for developing yield coefficients
Facilities	There were no coefficients for this output (i.e. dams, reservoirs, or administrative sites). It was assumed that the only change from the base year in numbers of facilities would be the addition of a visitor center for the Mono Basin National Forest Scenic Area. This is common to all alternatives.
Future Visual Quality (acres)	The Management Prescriptions associated with each alternative were mapped and the acres by visual condition resulting from these activities estimated. The FVC reflected in these VQOs were calculated as a function of visual quality changes.
Visual Quality Index	The visual quality index is calculated by multiplying numerically weighted variety class acres by the visual condition. The result is an indicator of visual quality. VQI will change by alternative as proposed management activities change the visual condition.
Land Acquisition (acres)	The estimate of additional lands needed to efficiently manage the Forest was based on the theme of each alternative.
Human Resources (enrollees)	There were no coefficients for this output. Numbers were estimated using historical data and are expected to remain the same for all alternatives.
Cultural Resources (acres)	Various levels of program intensities to reflect the theme of each alternative were defined and the costs were estimated.
Water Quality (acre-feet)	There were no coefficients developed Forestwide for water meeting water quality standards. The volume of water meeting State water quality objectives was estimated from the soil and water program, acres of soil disturbance, new ski area and road construction, acres in declining condition, and total budget. Based on the assumption of proper application of BMP's, Forest standards and guidelines, and current ski area erosion prevention plans, virtually all water yield would meet State water quality standards.

Economics in FORPLAN

Economics are discussed in Chapter II of the EIS in the alternative development process and displayed in various figures in Chapter III of the EIS in the economic environment. Chapter IV discusses the economic

consequences, and Appendix D outlines the use of economics in the entire document. Demand analysis for individual resources is presented in the Affected Environment, Chapter III. Demand cut-offs are used for all dispersed and developed RVDs, skier RVDs and wilderness RVDs, and for wildlife WFUDs.

All costs and benefits of the economic efficiency analysis were conducted with the use of the FORPLAN model. Economic data and assumptions incorporated into 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. 1/ For sensitivity testing, a discount rate of 7-1/8 percent was used. This rate was used for water resource evaluation by the U.S. Water Resources Council in 1980 and also adopted for use in the 1980 RPA. Use of the 7-1/8 percent discount rate reduces PNV from that obtained with a 4 percent rate. Data on PNV for each alternative using the 7-1/8 percent discount rate is available in the planning records.

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	2	3	4	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

1/ 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.

These timber price trends are projections from an econometric model of National and Regional timber markets. 1/ 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. 2/

Costs and prices for all other resources were held constant since FORPLAN version 1, Model 2, release 13, cannot utilize cost and price trends for both timber and nontimber resources.

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 at either no charge to consumers or at a charge less than the willingness-to-pay price. This is shown in the following tabulations in Table 6.

Table 6
Benefits Used in the Analysis

Output	Unit	Valued in FORPLAN	Valued Outside FORPLAN	Average Actual Cash Receipts per Unit of Output	Average Willingness-to-Pay Value Used in this Analysis
Timber					
Initial Harvest					
0-30% Slope (tractor)					
-Jeffrey Pine	MCF	X		877	877
-Red Fir	MCF	X		482	482
-Lodgepole Pine	MCF	X		154	154
31-60% Slope (aerial)					
-Jeffrey Pine	MCF	X		-162	-162
-Red Fir	MCF	X		-457	-457
-Lodgepole Pine	MCF	X		-1308	-1308

1/ 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.

2/ USDA Forest Service, An assessment of the Forest and Range Land Situation in the United States, January 1980.

Table 6
Benefits Used in the Analysis

Output	Unit	Valued in FORPLAN	Valued Outside FORPLAN	Average Actual Cash Receipts per Unit of Output	Average Willingness-to-Pay Value Used in this Analysis
Timber (continued)					
Regenerated Timber-Final Harvest					
0-30% Slope (tractor)					
-Jeffrey Pine					
Diameter class 8	MCF	X		473	473
12	MCF	X		614	614
16	MCF	X		728	728
20	MCF	X		807	807
24	MCF	X		850	850
28	MCF	X		877	877
-Red Fir					
Diameter class 8	MCF	X		250	250
12	MCF	X		347	347
16	MCF	X		419	419
20	MCF	X		477	477
28	MCF	X		472	472
-Lodgepole Pine					
Diameter Class 8	MCF	X		108	108
12	MCF	X		128	128
16	MCF	X		142	142
20	MCF	X		149	149
24	MCF	X		154	154
31-60% Slope					
-Jeffrey Pine					
Diameter class 8	MCF	X		-465	-465
12	MCF	X		-325	-325
16	MCF	X		-211	-211
20	MCF	X		-132	-132
24	MCF	X		- 88	- 88
28	MCF	X		- 62	- 62
-Red Fir					
Diameter class 8	MCF	X		-250	-250
12	MCF	X		-347	-347
16	MCF	X		-419	-419
20	MCF	X		-457	-457
24	MCF	X		-477	-477
28	MCF	X		-472	-472

Table 6
Benefits Used in the Analysis

Output	Unit	Valued in FORPLAN	Valued Outside FORPLAN	Average Actual Cash Receipts per Unit of Output	Average Willingness-to-Pay Value Used in this Analysis
Timber (continued)					
-Lodgepole Pine					
Diameter class 8	MCF	X		-1395	-1395
12	MCF	X		-1375	-1375
16	MCF	X		-1361	-1361
20	MCF	X		-1353	-1353
24	MCF	X		-1348	-1348
Fuelwood	Cords	X		5.00	7.89
Range					
Livestock grazing	AUM	X		1.86	10.70
Wild Horse & Burro	Animal	X		200	200
Recreation					
Dispersed, Std.	RVD	X		0	11.30
Dispersed, Low Std.	RVD	X		0	5.99
Developed, Std	RVD	X		0.82	11.20
Developed, Low Std.	RVD	X		0.82	5.94
Developed, Alpine Ski	RVD	X		0.82	11.20
Wilderness Std.	RVD	X		0	13.75
Wilderness, Low Std.	RVD	X		0	7.29
Wildlife and Fish					
Resident Fish Use	WFUD	X		0	12.00
Big Game Use	WFUD	X		0	30.00
Other Game Use	WFUD	X		0	18.00
Nongame Use	WFUD	X		0	25.00
Water					
Water yield	Ac-Ft	X		0	59.00
Sediment	Tons	X		0	-10.00

Table 6
Benefits Used in the Analysis

Output	Unit	Valued in FORPLAN	Valued Outside FORPLAN	Average Actual Cash Receipts per Unit of Output	Average Willingness-to-Pay Value Used in this Analysis
Energy					
Geothermal	BBTU	X		253.00	253.00
Fire					
Wildfire	Acres	X		0	-1172.00

Outputs above the estimated demand were not valued. 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.

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 costs and contingent value recreation studies conducted by the Forest Service for the Draft 1985 Resource Planning Act (RPA) evaluation.

Range values are the average amount that permittees are willing to pay for grazing on the Forest as estimated from ranch livestock budgets developed by the USDA Economic Research Service.

Water values are the estimated amount that users are willing to pay for water at the point of use, less storage and delivery costs incurred to get the water from Forest streams and rivers to the user. Values were determined from studies surveyed by the Forest Service for the Draft 1985 RPA. 1/

Sediment values are negative values that represent the cost of sediment removal or cleanout. They are based on costs incurred by the Forest and other public agencies in the area, and studies conducted by the Forest. These values were applied only to the wet meadow areas and streams in the WIN-inventoried area. Otherwise, sediment is given a value of zero Forest-wide.

1/ Draft Environmental Impact Statement 1985-2030 Resources Planning Act

Energy values for geothermal energy represent value of the energy at the wellhead as estimated by the Forest Service for the 1985 Resource Planning Act (RPA) evaluation.1/

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 Forest are consumed in national and regional markets where the quantity demanded is many times larger than the productive capacity of the Forest (see Chapter III for a resource-by-resource description of the demand situation). For this reason, demand cut-offs were developed only for recreation visitor days (RVDs) and wildlife and fish user days (WFUDs). For these resource outputs, public demand could be less than the productive capacity of the Forest. The demand cut-offs were generally effective in the early time periods limiting resource outputs; however, cost-effective supply and/or constraints unique to alternatives were more often limiting than were the demand cut-off limits in the case of recreation outputs.

The demand projections listed in Table 7 are based on historic RIM data and projected into the future using factors developed in the 1980 RPA indexes of demand for outdoor recreation by type of activity. These factors were developed by Region; within Region 5, they were based on growth in major population centers. The Southern California area had a major influence upon the factors developed for Region 5, and provides the majority of the Forest's users.2/

1/ Draft Environmental Impact Statement 1985-2030 Resources Planning Act

2/ USDA Forest Service, An assessment of the Forest and Range Land Situation in the United States, January 1980.

Table 7
Demand Cutoffs Used in FORPLAN

Decade	1	2	3	4	5
Dispersed Recreation (MRVDs) Demand by Decade	14190	18203	22123	26656	31769
Wilderness Demand by (MRVDs) Decade	8626	9967	11861	13833	15647
Developed Recreation (MRVDs) Demand by Decade	26654	32364	37913	43566	48673
Downhill Ski Demand (MRVDs) by Decade	12633	17702	24798	32440	41953
Wildlife WFUD Demand (MWFUDs) by Decade	531	606	694	794	888
Fish WFUD Demand by (MWFUDs) Decade	3420	3685	4215	4711	5159

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. The cost associated with timber sale preparation and administration, regeneration, and road construction/reconstruction are included. Costs for constructing roads are included where a new area is being opened for timber harvest. Administration and capital investment costs are included for soils and water, range, wildlife, and recreation programs. Funds for firefighting and fire management are included. Finally, construction, reconstruction, and maintenance costs are included for campgrounds, interpretive facilities, trails, trailheads, administration of special-use permits, water developments, fencing, and streambank stabilizing structures.

Base level operational costs (fixed costs) include general administration, program management, minerals management, special use management, water and soil improvement maintenance and monitoring, road and trail systems maintenance, fire detection and initial attack, and law enforcement. Approximately 22 percent ($2,139,000) of the current budget represents fixed costs which are not allowed to vary in any benchmark or alternative.

Costs were checked for reasonableness by comparing the first decade costs for the current alternative developed with use of FORPLAN against actual expenditures for FY 1982.

Constraints

Each of the resources discussed in 36 CFR 219.13 through 219.26 were addressed by Standards and Guidelines, Management Prescriptions, or other management direction in the Plan. Regional resource direction which Forests are expected to follow is found in Regional Land Management Planning Direction.

Some management requirements were translated into modeling constraints and simulated or proxied in FORPLAN. Constraints are quantifiable limits placed on the 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 presumably 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 on 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. Constraints used in this analysis are divided into four categories: technological constraints, minimum management requirements, minimum implementation requirements, and Forest constraints. The following is a discussion of the modeling rules and impacts associated with each type of constraint.

Technical Constraints: Technical constraints are needed to make the model work and to ensure technical implementability of the results. These are applied to all benchmarks and alternatives. Limiting the prescription set for an analysis area to only those activities for which the area is available and capable of sustaining is one type of technological constraint. For example, limiting timber harvest prescriptions to areas that are capable and available for timber harvest. Demand cutoffs and considering existing developed recreation sites suitable only for developed recreation are other examples. In addition, threshold limits are set that restrict the production of resource outputs either to meet demand or other identified technical limitations. Constraints numbered 100 through 170 1/ were needed to prevent the model from double counting by allocating the same acres of suitable range to two or more prescriptions.

Constraints 002 through 015 limit the number of RVDs, WFUDs and tons of sediment that can be produced to an amount less than or equal to the constraint in each period. The RVDs and WFUDs produced above the threshold constraints are not valued, while sediment production beyond the constraint limits models the Forest's inability to restore backlogged non-point sources of sediment in the WIN-inventoried areas. (See the previous section for additional information on demand cutoffs.) The sediment threshold cutoff has been developed from historic data for the WIN-inventory damaged acres. They require the model to restore the backlog of non-point sources of sediment. The sediment yield threshold reflects an attempt by the Forest to resolve the non-point sources of sediment.

Decade	1	2	3	4	5
Sediment limit (M tons)	2.911	2.911	2.911	2.911	2.911

Minimum Management Requirements (MMRs): Minimum Management Requirements (MMRs) are constraints needed to meet minimum standards set forth in 36 CFR 219.27. Procedures for defining the MMRs were specified by the Pacific Southwest Region. MMRs are applied to all benchmarks and alternatives but are not applied to the FLW (unconstrained max PNV with flow/ltsy--long term sustained yield--constraints) or the MLV (minimum level of management) FORPLAN runs. The MMRs 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 MMRs are: lands not available for timber production, T&E species recovery, viable populations of wildlife and fish, vegetative diversity, riparian area protection, soil and water productivity, and certain timber policy constraints.

A discussion of the modeling rules and associated impacts for each MMR follows. See the modeling specifications in the benchmark section of this appendix for additional specifics.

1. Tentatively Capable, Available, and Suitable Timberland: Lands that were tentatively suitable for timber management were placed in analysis areas and were given a range of appropriate prescriptions. Land not 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 the timber AMS in the planning records. The effect of limiting the land base to only those acres that are now available, have a reasonable chance of successful reforestation, and for which knowledge indicates no irreversible damage to soil productivity or watershed condition defines the acres that are available for scheduled harvesting, reforestation, and thinning. This establishes the maximum land base available to sustained yields of timber.

2. Threatened and Endangered Species: The bald eagle is a federally-listed endangered species. The Forest has a wintering population of bald eagles, but no nesting pairs. No coefficients were developed for this species. Currently the Forest has no recovery target.

   The peregrine falcon is also an endangered species. The Forest portion of the Peregrine Falcon Recovery Plan calls for the introduction of two pair within the planning period. No specific coefficients were developed for the peregrine falcon in the analysis.

   The Lahontan cutthroat trout and the Paiute cutthroat trout are federally-listed threatened species. The current management direction is to protect and enhance habitat to meet population recovery objectives.

1/ These constraint numbers refer to the actual constraint in the FORPLAN matrix, and are offered as an aid to readers who are interested in reviewing the actual mathematical structure of the constraints. The linear program matrixes and reports are included in the planning records.

Coefficients were developed based upon habitat capability, stream acres, and management activities. The recovery objectives are five acres of increased stream habitat for the Lahonton cutthroat and eighteen acres for the Paiute cutthroat trout. In the case of both trout, there is more suitable stream habitat available than is needed to meet recovery objectives. The Paiute Cutthroat Trout Habitat Management Plan is presently available, and the Lahontan Cutthroat Trout Habitat Management Plan will be available in the near future.

Standards and guidelines designed to protect the bald eagle, peregrine falcon, Lahonton trout, Paiute trout, and their habitats do not conflict with other resources, and were therefore not modeled in FORPLAN.

3. Viable Populations: A viable population is regarded as one which has the estimated numbers and distribution of reproductive individuals to insure its continued existence. Constraints were entered in FORPLAN for for viable populations in two areas: goshawks, and snag-dependent species.

Goshawks: Within its habitat range, manage goshawk territories to maintain a density of at least one territory per eighteen square miles. Distances between territories or clumps of territories should not exceed 12 miles. The habitat range is defined as the area of land containing active or potential nesting habitat and was considered to encompass the entire suitable timber base on the Forest.

To meet the minimum management requirements for goshawks, the wildlife biologist determined that nine pairs are necessary within the tentatively suitable timber base. Each territory will contain a minimum of 50 acres of habitat which provides suitable conditions for the nest stand and an alternate nest stand. To maintain these nine pairs, 450 acres of productive mature timber were forced in the model to salvage and stand maintenance timber management, which removed these acres from regulated harvest. Special consideration, identified in the Forest-wide Standards and Guidelines, is applied to these areas.

Unique conditions exist on the Forest for the goshawk. Because of the high recreation use, open timber stands, ease of access, and habitats bordering on the southernmost extent of their range, local studies indicate goshawks may need upwards of 100 acres of protective area surrounding the nest sites. Alternatives PRF, AMB, and AMN provide this additional protective area.

Snag-dependent Species: To provide habitat for snag-dependent species, it was determined that an average of 1.5 snags per acre were required with the following specifications:

- 1.2 snags per acre between 15-24 inches dbh and greater than 20 feet high;

- 0.3 snags per acre greater than 24 inches dbh and greater than 20 feet high.

To provide this level of snags, every other decade's thinning volume for high-site timber land was given up, slightly reducing the maximum long-term sustained yield.

4. Diversity: A diversity of plant and animal communities was achieved by providing threshold levels of vegetation types and seral stages. These vegetative type/seral stage combinations are described below.

   Timber types:
   - Jeffrey pine
   - Red fir

   Seral stages:
   - 1 = Grass/forb stage, with or without scattered shrubs and seedlings.
   - 2 = Shrub/seedling/sapling stage.
   - 3a = Pole/medium tree stage with canopy cover less than 39 percent.
   - 3bc= Pole/medium tree stage with canopy cover over 40 percent.
   - 4a = Large tree stage (mature and overmature) with canopy cover less than 39 percent.
   - 4bc= Large tree stage with canopy cover over 40 percent.
   - 4c+= Overmature large tree stage with tree conopy of over 70 percent.

   Shrub Types: Big Sage, Bitterbrush, and Mountain Mohogany.

   Seral Stages: Early Stage, Middle Stage, and Late Stage.

   FORPLAN solutions were monitored to insure that at least 5 percent of each vegetative type/seral stage combination was present for each decade. This was never a problem in any of the benchmarks or alternatives, and no diversity constraints were ever explicitly imposed.

5. Riparian Areas: The aquatic, riparian, and terrestrial habitat associated with riparian areas is important to a large variety of wildlife species. Riparian areas are defined as vegetative communities which are predominantly influenced by, or associated with, water; they include:

   - Areas 100 feet horizontal distance from the edge of standing bodies of water;

   - Areas 100 feet horizontal distance on both sides of perennial stream channels;

   - all wetlands.

   Riparian areas were identified on the Forest by calculating the acres associated with perennial streams or lakeshores, and acres of wet meadow in the Forest data base. Protection of riparian areas was modeled in FORPLAN by allowing only salvage and sanitation timber management activities within riparian areas, reducing the timber yield on 360 acres. An additional 23,500 acres of wet meadow were constrained to accept only watershed improvement prescriptions. (Livestock grazing was

limited to levels allowed in watershed improvement prescriptions in these areas.) All new developed recreational facilities were to be located outside riparian areas.

Intermittent and ephemeral streams were acknowledged to be important to riparian areas, but were not constrained as part of the MMRs. In addition, the Forest Standards and Guidelines applied to all alternatives further described riparian areas, and the appropriate activities and management within them.

6. Soil and Water Productivity: This constraint limited the disturbance on those areas with steep slopes, very high erosion potential, or high instability, to no more than 5 percent per decade. Disturbance is defined as any management activity that has the potential to accelerate erosion or mass movement. Steep slopes are slopes in excess of the natural angle of repose. Very high erosion potential is defined in the R-5 supplement no. 18, FSM 2550, May 1976.

   No constraint was applied specifically for soil and water productivity protection, as the intent of this objective was already met by removing the non-regenerable acres from the capable, available and suitable (CAS) timber land base. The removal of these lands from timber activity, the limitation of range activities to 30 percent slopes or less, and the implementation of the Forest-wide Standards and Guidelines and Management Prescription direction provide the intended protection for soil and water productivity.

Timber policy constraints (TPCs): These constraints ensure that timber harvest meets the requirements of sustained yield and harvest flow, no harvest before the Culmination of Mean Annual Increment (CMAI), and dispersion requirements.

1. Rotation Length: Minimum ages were established for merchantability, Culmination of Mean Annual Increment (CMAI), and 95 percent of CMAI based on RAMPREP yield tables for the major forest types. Rotation length was extended based upon RAMPREP yield tables in response to public issue with the appearance of the forest in the future. See Table 8 for display.

Table 8
Rotation Lengths
(years)

	Merchantable	CMAI	PRF	95 percent CMAI
Jeffrey Pine				
w/o thinning	80	70	120	70
w/thinning	80	80	140	80
Red fir				
w/o thinning	80	50	80	50
w/ thinning	80	180	180	140
Lodgepole pine				
w/o thinning	80	80	100	70
w/thinning	80	100	120	80

2. Sustained Yield Requirements: An inventory constraint and a growth goal were used to meet the sustained yield requirements.

3. Harvest Flow Requirements: The amount that timber outputs were allowed to fluctuate between periods was regulated to prevent wide fluctuations from one decade to the next. Twenty-two percent was the usual constraint, but a 99 percent increase was allowed in the RPA Alternative.

4. Dispersion: FORPLAN was constrained to allow no more than 16 percent of any watershed association to be regenerated in any period. This constraint assures that harvest units can be situated in such a way as to leave logical harvest units between openings for future management.

Minimum Implementation Requirements (MIRs): These constraints are needed to ensure that alternatives are minimally acceptable and implementable on the ground. Procedures for defining MIRs were specified by the Region. They are within agency control, but there is little discretionary control regarding their application at the Forest level. MIRs do not apply to benchmarks but are applied to all alternatives. Only two MIRs were applicable to the Forest. Sensitive plants must be managed to insure that they do not become threatened or endangered because of Forest Service action. This requirement is satisfied on the Forest by Standards and Guidelines. Partial Retention Visual Quality must be maintained in the foreground and middle ground of scenic corridors for roads officially designated in the 1970 California State and County Scenic Highway System Master Plan. (State Highways 158, 168, 203 and U.S. 395 and the western portion of U.S. 120 are in this category.) Timber harvest was restricted to salvage and sanitation FORPLAN prescriptions on 4,207 acres of suitable timber stands along these corridors.

Forest constraints common to all alternatives: This category of constraints is needed to ensure implementability at the local level. They are based on Forest (rather than Regional) conditions which are in addition to MMRs. Fixed allocations representing prior Forest commitments include the established and candidate RNAs, the Mono Basin National Forest Scenic Area, the Ancient Bristlecone Pine Forest Botanical Area, geothermal leasing in Lease Blocks I and II, all designated wilderness, and the North and South Fork of the Kern Wild and Scenic Rivers and the Middle Fork of the San Joaquin recommended wild and scenic rivers. Other than these land allocations, no Forest constraint was common to all alternatives. Forest constraints unique to an alternative are discussed under alternative descriptions.

Summary of the Constraint Analysis: For a detailed discussion of constraint analysis by subtraction, refer to Chapter II of the EIS. The following Table displays the marginal costs of the Minimum Management Requirements and the Minimum Implementation Requirements.

The alternatives were developed from the most economically efficient, unconstrained benchmark (FLW), with additional constraints added only as necessary to meet the theme of the alternative. The first set of constraints added were the MMRs, which are necessary to meet the NFMA regulations. For the Inyo, these included protection of goshawk nest sites (450 acres), and protection of riparian areas (360 acres). The MMRs restrict timber practices and cause a $0.3 million reduction in PNV. The MMR benchmark is further

constrained by the MIRs to create the most efficient, implementable alternative (CEE). The visual quality MIRs affected another 4,207 acres of timber that went to salvage and sanitation cutting in FORPLAN.

Table 9
Present Net Value Comparison-Marginal Cost of Constraints
in Millions of 1982 Dollars

I.D. Code Name	PNV	Change In PNV	Dis-counted Cost	Change In Disc. Cost	Dis-counted Benefits	Change In Disc. Benefits
FLW* (PNV w/o MMRs)	1879.4	N/A	288.7	N/A	2168.1	N/A
MMR* (PNV) w/MMRs)	1897.1	0.3	288.9	0.2	2168.0	0.1
CEE*(PNV W/MIRs)	1897.0	0.1	287.6	1.3	2166.6	1.4
MLV (Min-lvl. Management)	1605.1	N/A	81.1	N/A	1686.2	N/A

*Background output (MLV) benefits, costs, and PNV have been subtracted from those for each of the other benchmarks and alternatives.

BENCHMARKS

This section presents the modeling specifications for the required benchmarks. For a complete discussion of the results of the benchmarks, refer to Chapter II of the EIS.

04MLV - Minimum Level of Management (Background)

Because this benchmark is primarily used as an accounting tool, the phase-in period that would be needed if minimum level were actually implemented is ignored.

Theme: The purpose of this benchmark is to determine unavoidable fixed costs, outputs, and associated benefits with maintaining the Forest in federal ownership.

Modeling Specifications:

1. Objective function: Minimize cost for twelve periods.

2. State and county roads and background hunting and fishing are allowed to produce a minimum level of dispersed recreation RVDs and WFUDs.

3. Other outputs (timber, range, developed recreation, etc.) were not produced, as a result of the minimize-cost objective function. Other constraints were not needed.

4. The minimum level fire program included detection and initial attack only.

04FLW - Unconstrained Maximum PNV Assigned with FLOW/LTSY Constraints

Theme: This benchmark displays the most economically efficient allocation of resources. Management activities are constrained only by the production limitations of the land and by the requirements of technical feasibility. FLW provides a basis for evaluating the cost of the MMRs.

Modeling Specifications:

1. Objective function: Maximize PNV for 12 periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation length at merchantability.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements do not apply.
   - Non-declining yield requirements do not apply.

04MMR - Maximum PNV Assigned Values with MMR-NDY-CMAI

Theme: The purpose of the MMR benchmark is to display the outputs that could be produced if management were constrained only to meet Minimum Management Requirements. This benchmark demonstrates the opportunity costs of those requirements, considered collectively. It forms the basis for evaluation of additional constraints. The MMRs are derived from 36 CFR 219.27.

Modeling Specifications:

1. Objective function: Maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002, through 015).

3. Timber Policy Constraints

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.

- Harvest flow requirements apply.
- Dispersion requirements apply.
- Non-declining yield requirements apply.

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 450 acres (50 acres/pair X 9 pair) are constrained for goshawks. These acres were allocated to timber salvage and sanitation prescriptions. These constraints, combined with the Forest Standards and Guidelines, insure that Minimum Management Requirements for wildlife will be met.

04MKV - Maximum PNV Market Values Only with MMR

Theme: This benchmark demonstrates the sensitivity of the FORPLAN solution to non-market resources (water, fish, wildife and dispersed recreation) price assignments. Non-market outputs are not valued and contribute to PNV only after the solution is found; therefore, they do not affect the allocation of resources.

Modeling Specifications:

1. Objective function: Maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply.

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 450 acres (50 acres/pair X 9 pair) are constrained for goshawks. These acres were allocated to timber salvage and sanitation prescriptions. These constraints, combined with the Forest Standards and Guidelines, insure that Minimum Management Requirements for wildlife will be met.

6. Water, WFUDs, and dispersed RVDs were given no value in the FORPLAN run. The solution was then run through the report writer to price out all assigned values, including the nonmarket outputs (water, WFUDs dispersed RVDs).

04TBR - Maximize Timber for 1 Period with NDY - CMAI - MMRS

Theme: The theme of this benchmark is to define the maximum timber output possible for the first decade, applying the constraints of NDY, CMAI and MMRs.

Modeling Specifications:

1. Objective function: Maximize timber for one period.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply.

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 450 acres (50 acres/pair X 9 pair) are constrained for goshawks. These acres were sent to timber salvage and sanitation prescriptions. These constraints, combined with the Forest Standards and Guidelines, insure that Minimum Management Requirements for wildlife will be met.

04WLN - Maximize PNV with Maximum Wilderness

Theme: The theme of this benchmark is to display the opportunity cost associated with a maximum wilderness allocation.

Modeling specifications:

1. Objective function: Maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply.

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 450 acres (50 acres/pair X 9 pair) are constrained for goshawks. These acres were sent to timber salvage and sanitation prescriptions. These constraints, combined with the Forest Standards and Guidelines, insure that Minimum Management Requirements for wildlife will be met.

6. Wilderness allocations for all Further Planning Areas was assured by turning on appropriate wilderness choices for aggregates 291 through 993.

04NON - Maximum PNV with No Roadless Areas to Wilderness

Theme: The theme of this benchmark is to display the opportunity cost associated with making no new wilderness allocations.

Modeling Specifications:

1. Objective function: Maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 450 acres (50 acres/pair X 9 pair) are constrained for goshawks. These acres were sent to timber salvage and sanitation prescriptions. These constraints, combined with the Forest Standards and Guidelines, insure that Minimum Management Requirements for wildlife will be met.

6. Nonwilderness allocations for Further Planning Areas was assured by constraining appropriate wilderness choices for aggregates 291 through 993.

04RGN - Maximum Range - Grazing for Five Periods (50 Years)

Theme: The theme of this benchmark is to display the maximum capability of the Forest to provide commercial livestock grazing for five decades.

Modeling Specifications:

1. Objective function: Maximize grazing for five periods.

   The resulting AUM production is specified as a scheduled output constraint in a subsequent (rollover) maximum PNV run.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply.

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 450 acres (50 acres/pair X 9 pair) are constrained for goshawks. These acres were sent to timber salvage and sanitation prescriptions. These constraints, combined with the Forest Standards and Guidelines, insure that Minimum Management Requirements for wildlife will be met.

04H20 - Maximum Water for Five Periods (50 Years)

Theme: The theme of this benchmark is to define the maximum capability of the Forest to provide water for five decades.

Modeling Specifications:

1. Objective function: Maximize water yield for five periods.

   The resulting water yield is then specified as a scheduled output constraint for a subsequent Max PNV (rollover) run.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.

- Sustained yield requirements apply.
- Harvest flow requirements apply.
- Dispersion requirements apply.
- Non-declining yield requirements apply.

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 450 acres (50 acres/pair X 9 pair) are constrained for goshawks. These acres were sent to timber salvage and sanitation prescriptions. These constraints, combined with the Forest Standards and Guidelines, insure that Minimum Management Requirements for wildlife will be met.

ALTERNATIVES ELIMINATED FROM DETAILED STUDY

For a more complete discussion of the alternatives eliminated from detailed study and the reasons for their elimination, see Chapter II of the EIS.

04PRO - High Productivity

Theme: This alternative was designed to illustrate the effects of meeting the Regionally-assigned high productivity timber target alternative as disaggregated to the Forest for the years 2000 and 2030. Other market outputs are provided at the highest level possible while meeting the assigned timber targets. Non-market outputs are provided at economically efficient levels consistent with the production of market outputs.

Modeling Specifications:

1. Objective function: Maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply, only in the 6th decade is the yield allowed to decline.

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 450 acres

(50 acres/pair X 9 pair) are constrained for goshawks. These acres were sent to timber salvage and sanitation prescriptions. These constraints, combined with the Forest Standards and Guidelines, insure that Minimum Management Requirements for wildlife will be met.

6. Constraint 017 sets a minimum timber output to be produced, ranging from 33.8 MMCF in the 1st period to 43.1 MMCF in the 5th period.

7. Constraint 016 sets a minimum range output to be produced, ranging from 41.5 MAUMs in the first decade to 55.7 MAUMs in the fifth decade to meet the President's national range target.

8. The MIR constraint was not applied, in order that the timber harvest targets could be met.

04MKT - Market Opportunities Emphasis

Theme: This alternative emphasizes high output levels of market resources (timber, range, and developed recreation) with non-market outputs at economically efficient levels.

Modeling Specifications:

1. Objective function: Maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVD, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply, only in the 6th decade is the yield allowed to decline.

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 450 acres (50 acres/pair X 9 pair) are constrained for goshawks. These acres were sent to timber salvage and sanitation prescriptions. These constraints, combined with the Forest Standards and Guidelines, insure that Minimum Management Requirements for wildlife will be met.

6. Constraint 017 sets a minimum timber output to be produced, ranging from 30.1 MMCF in the 1st period to 38.5 MMCF in the 5th period.

7. Constraint 016 sets a minimum grazing output to be produced, ranging from 45.1 MAUMs in the first decade to 55.7 MAUMs in the fifth decade to meet the President's national range targets.

8. The MIR constraint was not applied in order that the timber harvest targets could be met.

04LBU - Low Budget Alternative (25 percent Reduction to Budget)

Theme: This alternative is designed to estimate the expected outputs and services that could be provided in the future if the current budget was equal to 75 percent of the 1982 funding (or $7.3 million per year).

Modeling Specifications:

1. Objective function: Maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply.

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 450 acres (50 acres/pair X 9 pair) are constrained for goshawks. These acres were sent to timber salvage and sanitation prescriptions. These constraints, combined with Standards and Guidelines, insure that Minimum Management Requirements for wildlife will be met.

6. MIRs for visual resources assigned 4,207 acres of suitable timber along State-identified scenic highways to salvage and sanitation. Constraints 031 through 049 set the visual restriction.

7. A financial constraint adjusted the budget to equal 25 percent of the 1982 funding level ($73 MM per decade).

8. Aggregates 582 and 642 were turned on and constraints 200 through 228 were used to assign portions of White Mountains and Paiute areas to wilderness.

9. Constraints 090, 097, and 098 prohibited timber harvest in concentrated recreation areas to maintain visual quality and current recreational use.

10. Constraints 93 and 95 provided for ski development to occur only in the Sherwin Bowl area and existing ski areas. All other potential ski areas were available for full-scale timber harvest, as they are under present management.

11. Constraints 017 through 021 proxy the current program output levels for timber, range and recreation.

12. Constraint 095 requires the current fire program to be selected.

04AMC - Maximize Wilderness While Maintaining Current Market Output Levels

Theme: This maximizes wilderness by recommending all Further Planning Areas for wilderness designation. Emphasize maintaining current levels of market outputs through intensive management on those lands outside of wilderness, while producing cost-efficient levels of non-market resources.

Modeling Specifications:

1. Objective function: Maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply.

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 450 acres (50 acres/pair X 9 pair) are constrained for goshawks. These acres were sent to timber salvage and sanitation prescriptions. These constraints, combined with the Forest Standards and Guidelines, insure that Minimum Management Requirements for wildlife will be met.

6. MIRs for visual resources assigned 4,207 acres of suitable timber along State-identified scenic highways to salvage and sanitation. Constraints 031 through 049 set the visual restriction.

7. Wilderness allocations for all Further Planning Areas were assured by turning on appropriate wilderness choices for aggregates 291 through 993.

8. Constraints 016 and 017 set the minimum range and timber production to at least reach the current output levels.

04WLI - Wilderness Emphasis with Capital Investments to Mitigate for Taking Lands Out of Production

Theme: This alternative is designed to evaluate the effects of recommending substantial amounts of quality acres for wilderness. Non-wilderness portions of the Forest are intensively managed to maintain or increase commodity outputs.

Modeling Specifications:

1. Objective function: Maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply.

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 450 acres (50 acres/pair X 9 pair) are constrained for goshawks. These acres were sent to timber salvage and sanitation prescriptions. These constraints, combined with Standards and Guidelines, insure that Minimum Management Requirements for wildlife will be met.

6. MIRs for visual resources assigned 4,207 acres of suitable timber along State-identified scenic highways to salvage and sanitation. Constraints 031 through 049 set the visual restriction.

7. Aggregates 582 and 642 were activated to add the White Mountains and Paiute Further Planning Areas to wilderness.

8. Constraints 016 and 017 set the minimum range and timber production to at least reach the current output levels.

ALTERNATIVES CONSIDERED IN DETAIL

04PRF - Preferred Alternative

Theme: This alternative provides a mix of management activities that is sensitive both to historic uses and new opportunities. A mixture of commodity and amenity resource outputs is emphasized. There is no budget limitation.

Modeling Specifications:

1. Objective function: Maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Extended rotation age.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply.

4. Wildlife diversity constraints on specific analysis areas were applied on 6587 acres of suitable timber lands to provide old growth diversity and provide for up to fifteen pairs of nesting goshawks.

5. Aggregate emphasis 352 and 502 were set to allow all of the Table Mountain and Tioga Lake Further Planning Areas to be recommended for wilderness.

6. Aggregate emphasis 582 and 642 were set and constraints 200 through 228 applied to allow portions of White Mountain and Paiute Further Planning Areas be recommended to wilderness.

7. Constraints 057 through 059 prevent any timber harvest in the Monache area. This reduces conflict with important wildlife, scenic, and dispersed recreation values in the area.

8. Constraint 086 allows for regeneration harvest on 31 percent slopes and greater. This is to maintain these suitable timber lands to be managed as part of the timber component and timber harvest to occur as the stands become economically feasible for harvest.

9. Constraints 081 through 083 exclude concentrated recreation areas from timber harvest to maintain emphasis on a quality recreational experience.

10. Constraints 080, 084, and 085 limit ski area development to current ski areas and 8,000 additional SAOT's. This limit on ski area development is to provide stable community growth as identified in local area community development plans.

11. Constraints 067 through 069 prevent timber harvest on 882 acres in the Laurel-McGee further planning area to protect visual quality, prevent conflicts with recreationists, and protect important wildlife values in the area.

12. Constraints 041 through 053 protect visual quality in the foreground zones of all Sensitivity Level 1 roads and trails; timber is managed only for salvage and sanitation on 6,596 acres under this

constraint.

13. To maintain primitive recreation options by restricting access, constraint 025 removes 245 acres of the Glass Creek area from timber harvest.

14. The tendency of the model to cut large acreages of certain strata in the early decades is leveled by constraints 017, 018, 019 and 021. They average the timber harvest acreage for P6G, L3P, P2S strata, and slopes greater than 31 percent for balanced fuelwood and silvicultural programs.

15. Constraints 018 and 019 force the potential alpine ski areas into a modified timber harvest schedule. This harvest prescription is primarily intended to protect the potential ski option and secondarily to reduce potential timber conflicts with wildlife.

16. Constraints 016 and 017 set the minimum levels for range and timber outputs. The range levels proxy the limitation of livestock grazing on deer winter range and fawning areas. The timber constraint sets the timber harvest schedule at 7.1 MMBF per year. This output level is derived by averaging the first 8 decades timber harvest schedule, and provides consistent harvest levels and silvicultural programs.

17. Constraint 099 requires the current fire funding level, with increased emphasis on suppression.

04CUR Current (1982) Program - No Action

Theme: This alternative displays the current program of management activities on the Forest and projects it over the 50-year planning horizon. The 1982 Forest budget is a limiting factor. The budget remains essentially constant over the planning horizon and continues to be distributed among the resources in roughly the same proportions as in 1982.

Modeling Specifications:

1. Objective function: Maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002, through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply.

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 750 acres (50 acres/pair X 15 pair) are constrained for goshawks. These acres were sent to timber salvage and sanitation prescriptions. These constraints, combined with Standards and Guidelines, insure that population levels of wildlife will be maintained at or above the MMR level.

6. MIRs for visual resources applied 4,207 acres of suitable timber to timber salvage and sanitation management along state-identified scenic highways. Constraints 031 through 049 set the visual restriction.

7. A financial constraint adjusted to equal 1982 funding level.

8. Aggregates 582 and 642 were turned on and constraints 200 through 228 were used to assign portions of White Mountain and Paiute areas to wilderness.

9. Constraints 090, 097, 098 prohibit timber harvest in concentrated recreation areas to maintain visual quality and current recreational use.

10. Constraints 093 and 095 provide for ski development to occur in the existing ski areas and 8,000 SAOTs in potential ski areas.

11. Constraints 017 through 021 proxy the current programs for timber, range and recreation by limiting output to present levels.

12. Constraint 095 requires the current fire program to be allocated.

04 RPA (1980 RPA Program)

Theme: This alternative is designed to meet the targets and goals of the 1980 RPA program, representing moderate to high outputs of commodities and selected amenities. Some of the assigned RPA targets and goals for the Forest are not mutually compatible; where there was a conflict, market outputs (timber, range, and developed recreation) were given priority over nonmarket outputs and amenities. In cases for which RPA goals could not be met in this alternative, they were met in one or more of the other alternatives studied in detail. There is no budget limitation.

Modeling Specifications:

1. Objective functions: Maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.

- Harvest flow requirements apply.
- Dispersion requirements apply.
- Non-declining yield requirements apply, only in the 6th decade is the yield allowed to decline.

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 450 acres (50 acres/pair X 9 pair) are constrained for goshawks. These acres were sent to timber salvage and sanitation prescriptions. These constraints, combined with standards and guidlines, will insure that MMR population levels of wildlife will be maintained.

6. MIRs for visual resources applied 4,207 acres of suitable timber to timber salvage and sanitation management along State-identified scenic highways. Constraints 031 through 049 set the visual restriction.

7. Constraint 070 prevented any new wilderness from being assigned. The Region did have a broad wilderness target under RPA; however, the Forest chose to use RPA as the no-wilderness alternative.

8. Constraints 016 and 017 require this alternative to meet or exceed specific range and timber output levels. The range target was a progressive increase to meet 55.6 AUMs by the fifth decade. The assigned RPA timber output levels were set as decade harvest levels.

9. Constraints 021 through 026 allow timber harvest in portions of Deadman and Inyo Craters concentrated recreation areas. These concentrated recreation areas were eliminated in order to meet timber harvest targets.

10. Constraint 027 prevents scheduled timber harvest in existing ski areas. This is to prevent conflict with current ski area management and to maintain the visual resource quality of the area.

11. Constraint 030 prevents timber harvest in all concentrated recreation zones other than those listed above. This must occur to reach the assigned recreation RVD target. (Timber harvest in concentrated recreation areas displaces recreation use.)

12. Constraint 099 requires current fire funding with an increased emphasis on suppression.

<u>04CEE - Maximize Cost Efficiency</u>

<u>Theme</u>: This alternative seeks the most cost-effective mix of land allocations and management practices available on the Forest, given the application of Minimum Management Requirements (MMRs), timber policy constraints (TPCs), minimum implementation requirements (MIRs), and Forest-wide Standards and Guidelines (FS&Gs).

Modeling Specifications:

1. Objective Function: maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).
3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply.

4. Constraints #061 through 064 prohibit regeneration harvest in riparian areas.

5. Constraints #065 through 067 restrict the timber harvest allowed in certain strata identified as nesting areas for goshawks. 450 acres (50 acres/pair X 9 pair) are constrained for goshawks. These acres were sent to timber salvage and sanitation prescriptions. These constraints, combined with the Forest Standards and Guidelines, will insure that MMR population levels of wildlife will be maintained.

6. MIRs for visual resources applied 4,207 acres of suitable timber to timber class III management along State-identified scenic highways. Constraints 031 through 049 set the visual restriction.

7. No additional constraints were needed to meet the theme of this alternative.

04AMN - Maximize All Amenities

Theme: This alternative emphasizes high outputs and protection levels of non-market resources. Fish and wildlife, dispersed recreation, wilderness, and visual resources are maximized with market outputs held at economically efficient levels. There is no budget limitation.

Modeling Specifications

1. Objective Function: Maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply.

4. Wildlife diversity constraints on specific analysis areas were applied on 6,587 acres of suitable timber lands to provide old growth diversity and provide habitat for up to 15 pairs of nesting goshawks.

5. In addition to MIRs, Sensitivity Level 1 and 2 roads and trails were added for a total of 12,237 foreground acres in timber salvage and sanitation.

6. Aggregate emphasis 332, 352, 382, 402, 452, 292, 502, 512, 582, and 642 were set to allow all of Coyote S.E., Table Mountain, Buttermilk, Wheeler Ridge, Laurel-McGee, Horse Meadow, Tioga Lake, Hall Natural, Log Cabin Saddlebag, White Mountains, and Paiute Further Planning Areas to go to wilderness.

7. Constraints 031 through 033 restrict developed recreation to no development of new ski areas or concentrated recreation areas; the only developments allowed are in existing recreational areas.

8. Constraints 050 through 052 prevent scheduled timber harvest in concentrated recreation areas.

9. To maintain high visual quality objectives, constraints 035 through 037 prohibit timber harvest on slopes greater than 31 percent slope.

10. To prevent conflict with key mule deer migration routes, constraints 038 through 040 prevent timber harvest in the Sherwin Bowl area.

11. To maximize the visual, fish and wildlife, and dispersed recreation resources, constraints 089 and 095 prevent scheduled timber harvests in the San Joaquin and Monache areas.

12. Constraint 099 requires the current fire funding level with an increased emphasis on suppression.

04AMB - Emphasize Wildlife and Recreation

Theme: This alternative places a primary emphasis on the quality and quantity of wildlife habitat with a secondary emphasis on moderate expansion of the developed recreation program. Other commodity outputs are produced to the degree compatible with wildlife and recreation objectives. Amenity values other than wildlife receive a moderate degree of emphasis. There is no budget limitation.

Modeling Specifications:

1. Objective function: Maximize PNV for twelve periods.

2. Technical constraints and cutoffs were used for skiing, wilderness, dispersed and developed RVDs, sediment, and wildlife (scheduled output constraints #002 through 015).

3. Timber Policy Constraints:

   - Minimum rotation age at least 95 percent of CMAI.
   - Sustained yield requirements apply.
   - Harvest flow requirements apply.
   - Dispersion requirements apply.
   - Non-declining yield requirements apply.

4. Wildlife diversity constraints on specific analysis areas were applied on 6,587 acres of suitable timberland to provide old growth diversity and provide habitat for up to fifteen pairs of nesting goshawks.

5. Constraints 041 through 053 protect visual quality in the foreground zones of all Sensitivity Level 1 roads and trails; timber is managed only for salvage and sanitation on 7,369 acres under this constraint.

6. Aggregate emphases 332, 462, 502, 522, 582 and 642 were set, and constraints 200 through 228 applied, to allow all of Laurel-Magee, Tioga Lake, Log Cabin Saddlebag, Paiute and portions of Coyote and White Mountain Further Planning Areas to go to wilderness.

7. To minimize conflicts with mule deer migration routes, constraints 084 through 088 located new ski areas to minimize conflict with known deer migration routes.

8. To emphasize range in suitable timber lands, constraint 081 maintains current AUM levels in the Jeffrey pine stands in suitable rangeland.

9. Constraint 080 sends 500 acres of suitable timber lands to minimum management for future recreation development in the San Joaquin area.

10. To optimize wildlife habitat management options and to reduce conflict with mule deer in the Monache area, constraints 038 through 040 prohibit timber harvest in the Monache area.

11. Primarily to provide for high visual quality objectives and for quality recreational experiences, constraints 035 through 037 prohibit timber harvest on slopes greater than 31 percent.

12. To emphasize high quality recreational opportunities, constraints 032 through 035 prevent timber harvest in concentrated recreation zones.

13. Constraints 021 through 024 prevent timber harvest in portions of the Glass Creek area to maintain primitive recreational opportunities and limited access in this area.

14. To minimize conflicts with wildlife, visual resources, and recreational options, constraint 018 allocates much of the San

Joaquin Further Planning Area to modified timber prescription, with extended rotation periods of 150 years.

15. Constraint 016 proxies the removal of livestock from key mule deer winter range, and delayed grazing on key fawning habitat.

16. Constraint 099 requires the current fire funding level, with an increased emphasis on suppression.

Table 10
Constraints Imposed on Alternatives
Considered in Detail

Constraints	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
Objective Function	Max. PNV	Max. PNV	Max. PNV	Max. PNV	Max. PNV	Max. PNV
Timber Policy Constr.						
NDY	yes	yes	6-16	yes	yes	yes
Sustained Yield	yes	yes	yes	yes	yes	yes
Dispersion	yes	yes	yes	yes	yes	yes
MMRs	yes	yes	yes	yes	yes	yes
MIRs	4207	4207	4207	4207	4207	4207
Lvl 1 Rds. & Trls.	2389	0	0	0	1839	1839
Lvl 2 Rds. & Trls.	0	0	0	0	6191	0
Budget Constraint	no	1982	no	no	no	no
Timber Output Constr.	yes	yes	yes	no	no	no
(MMBF cut per.1/5)	7.10/7.10	11.0/13.5	16.8/19.8	0	0	0
Timber Harvest Constr.	yes	yes	no	no	no	no
(Harvest sps. mix)						
P6G strata Ac/Dec.	3500	3500				
L3P strata Ac/Dec.	600					
P2S strata Ac/Dec.	2500					
C.A.S. Tbr. Mgmt. Lands	75.3	80.2	99.2	97.6	61.8	69.8
Acres constrained/key areas						
Potential Ski	708	0	0	0	1966	708
Conc. Rec. Area	3443	5498	5498	0	3443	3443
Monache Area	4512	0	0	0	4512	4512
30-60% Slope	0	0	0	0	20892	20892
Red Fir	7373	0	0	0	0	0
Range Output Constr.	yes	yes	yes	no	yes	yes
Lvstk.AUMs 1-5 dec	40.9/40.9	36/38	41.5/54	0	38/38	40/44
Lvstk.Ac.to Timber	21.9	21.9	43.0	0	6.2	0
Forest Veg. Diversity	6587	0	0	0	6587	6587
Fire Option Constr.	no	yes	no	no	no	no
Fire Program	sup	cur	sup	sup	sup	sup
	cur	cur	cur	-20	cur	cur

Table 10 (cont'd)
Constraints Imposed on Alternatives
Considered in Detail

Constraints	Alternatives					
	PRF	CUR	RPA	CEE	AMN	AMB
Watershed Improvements	yes	yes	yes	yes	yes	yes
Const. Ac./Dec.	5000	400	2000	0	5000	5000
Recmd. Wilderness Const	yes	yes	yes	no	yes	yes
Coyote SE				55.6	55.6	11.8
Table Mtn.	4.1				4.1	
Buttermilk					0.9	
Wheeler Ridge					16.2	
Laurel-McGee				9.1	9.1	9.1
Horse Meadow					5.6	
Tioga Lake	0.9			0.9	0.9	0.9
Hall Natural				5.2	5.2	
Log Cabin-Saddlebag				17.1	17.1	17.1
Benton Range						
White Mtns.	114.7	53.2		251.9	251.9	53.2
Blanco Mtn.						
Birch Creek						
Black Canyon						
Andrews Mtn.					13.6	
Paiute	49.4	54.4			130.6	130.6
Sugarloaf(NV)						
Excelsior(NV)						

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.

RAMPREP

RAMPREP is a PSW Region Timber Management model that is used to develop timber yield tables. RAMPREP summarizes the potential yields of the Forest based on the Forest 1974 timber inventory. For a detailed discussion of how RAMPREP calculates the potential yields, see The Region Five Timber Inventory Process, July 1981.

Fire Management Analysis Process

The fire management analysis process 1/ comprises four levels of analysis and a series of eight computer programs. Of the four levels of analysis, only two (described below) are used in the planning process; the other two levels affect implementation and evaluation. The eight computer programs are simulator report writers used to define the historical and current fire management situations and to evaluate alternative 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 to:

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 Forest-wide basis.

2. As a tool to aid the formulation and development of organizations in response to Plan alternatives and prescriptions. Level I analysis identifies areas which can be further analyzed in the areas of prevention, suppression, and fuels management.

Fire Management Analysis Level II is an analysis of various fire management program options (suppression versus prevention emphasis), 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 to:

1. Evaluate fire program options appropriate for the principal Plan alternatives identified by FORPLAN to provide 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 Plan alternatives to provide general estimates of fire program cost and consequences.

3. Evaluate the effectiveness of fire program options for a single Plan alternative within a constrained budget to establish the most effective program mix where the budget level is fixed.

1/ For a complete description of the fire management analysis process, see FSH 5109.19 (National Fire Management Planning and Analysis Handbook).

From Fire Management Analysis Levels I and II, inputs by alternative to FORPLAN are:

- Various program costs reflecting different fire management organizations,

- Suppression costs reflecting the fire management organizational efficiency, and

- Probability of acres burned.

Then FORPLAN responds by alternative with the following information:

- Acres burned,
- Suppression costs,
- Net resource value change, and
- Optimum organization and budget level by period.

Regional Industrial Multiplier System (RIMS)

The U.S. Department of Commerce's Regional Industrial Multiplier System 1/ (RIMS) was used to develop impact multipliers and employment and income estimates for the alternatives analyzed in the EIS. This system provides input-output model multipliers for 56 industrial sectors for Bureau of Economic Analysis (BEA) Economic Area 165 (Los Angeles Area including Inyo and Mono Counties). Most of the economic activity associated with the Forest takes place within BEA Economic Area 165.

Estimates of historical expenditures by sector associated with Forest outputs and purchases from the local economy with the RIMS input-output model 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).

1/ Industry - Specific Gross Output Multipliers for BEA Economic Areas, Regional Economic Analysis Division, Bureau of Economic Analysis, U.S. Department of Commerce, January 1977.

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.

Wildlife and Fish Habitat Capability Model

The Habitat Capability Models (HCMs) are a management tool developed by planning biologists in the Pacific Southwest Region. 1/ The HCM is a resume of biological information that describes the habitat requirements of a Management Indicator Species.

Although the development of HCMs was related to Forest planning, the models are detailed enough to apply to project work. Therefore biologists and land managers may use this information both for large-scale planning and inventory and for site-specific habitat management within a single stand.

Because these models contain only biological information, they do not imply policy decisions. The tie to policy within the Forest Service will come as each Forest allocates land areas to high, medium, or low capability standards. This will be done in an interdisciplinary manner through the Plan. However, the models provide appropriate information for wildlife biologists in establishing goals for managing habitat quality through project work.

1/ Hurley, Janey F. et. al.;
Wildlife Habitat Capability Models and Habitat Quality Criteria for the Western Sierra Nevada, Stanislaus National Forest, May 1981

Appendix C

Further Planning Area Description and Evaluation

APPENDIX C. FURTHER PLANNING AREA DESCRIPTION AND EVALUATION

TABLE OF CONTENTS

	Page
Introduction	596
#5033 Coyote SE	604
#5035 Table Mountain	612
#5038 Buttermilk	617
#5040 Wheeler Ridge	622
#5045 Laurel-McGee	628
#5049 Horse Meadow	636
#5050 Tioga Lake	642
#5051 Hall Natural Area	647
#5052 Log Cabin-Saddlebag	653
#5056 Benton Range	659
#5058 A&B - White Mountains	665
#5059 Blanco Mountain	675
#5060 Birch Creek	681
#5061 Black Canyon	687
#5063 Andrews Mountain	692
#5064 A&B - Paiute	697
#5296 Sugarloaf	705
#5989 Excelsior (Nevada part only)	710

INTRODUCTION

The Inyo National Forest has 623,818 acres in 18 separate areas that have been evaluated during the Forest planning process for possible wilderness designation. The planning process has developed alternative wilderness and nonwilderness scenarios for each further planning area. A final recommendation for future management of each area has been made in the proposed Forest plan.

The following narratives describe individual Inyo National Forest further planning areas, analyze their wilderness values, address current and potential nonwilderness uses, and examine the consequences of managing each area under alternative management prescriptions.

Each narrative contains five major subheadings: description, capability, availability, need, and environmental consequences. The following annotated outline describes the kind of material included in each section and defines the terms and abbreviations used.

OUTLINE FOR FURTHER PLANNING AREA NARRATIVES

Name/number Acres*: National Forest (other ownership)

A. DESCRIPTION

This section describes the area in terms of its geographic location, prominent physical and biological characteristics, attractions, and current use. Location is described in terms of county, ranger district, and access by road and trail to and into the area. The boundary is defined by naming surrounding roads, wildernesses, and/or non-Forest lands.

Mountain range, watershed, range of elevation, and geometric shape constitute the area's geography. Topography is described in terms of slope, geology, miles of perennial stream, and number of lakes.

Vegetation types in the area are described using a condensed version of the wildlife habitat types according to the R-5 Wildlife Habitat Relationship (WHR) System. (For correlations between the condensed and the complete set of WHR types, see the planning records.) Unusual species or associations of plants are also noted.

Scenic values are described in terms of variety class, and scenic landmarks within the area are listed.

*The acreages in these narratives are derived from the Forest planning data base; they differ from acreages found in the RARE II literature. In addition, certain areas for which included private land was indicated in RARE II do not indicate private land here. In some cases, the land has been acquired; in other cases, the land is on the area's periphery and was inappropriately included by RARE II within the area boundary.

"Other attractions" include primarily noteworthy wildlife species or associations of species. (Threatened, endangered, or sensitive species are discussed below under the capabililty section.)

The current uses of the area are summarized here; greater detail is found in the availability section of the narrative.

B. CAPABILITY

This section describes the area in terms of wilderness attributes, boundary manageability, and special features that enhance the area's wilderness values.

The wilderness attributes discussed are those identified in the Wilderness Act of 1964:

Natural integrity - the degree to which natural ecological processes in the area are free from the influence of human activities.

Natural appearance - the degree to which the area appears to the observer to be free from the influence of human activities. (This can differ from natural integrity. For example, a road that has very little influence on natural processes may be quite evident to the observer; or, conversely, grazing may have caused major vegetation changes which are not evident to the observer.)

Opportunity for solitude - the opportunity to be separated from other people and from evidence of human activity. This attribute is a function of the area's size and shape, topographic and vegetative screening, and the visibility of human activities outside the area.

Opportunity for primitive recreation - the opportunity to recreate without the aid of motor vehicles or developed facilities. Primitive recreation, like solitude, is related to size and screening. It also includes the elements of diversity (water sources, campsites, destination points, and kinds of recreational activity available); challenge (possibility of getting lost or injuring oneself in pursuit of recreational activities); and absence of developed facilities.

"Special features" include habitat for sensitive, threatened, or endangered species; and scientific research opportunities in the area.

This section of the narrative includes a discussion of boundary manageability. A wilderness boundary is considered manageable if conflicting uses can reasonably be excluded and if areas high in wilderness value can be separated from areas of lower value. In many cases, the further planning area boundary originally defined would not be manageable if the area were designated wilderness. However, in most cases, a manageable boundary for the area could be described without significant loss of acreage. This discussion addresses the manageability of the existing boundary and the feasiblity of alternate boundaries.

Some Inyo National Forest further planning areas adjoin roadless lands administered by the Bureau of Land Management (BLM). Specified BLM wilderness study areas adjoin two Inyo National Forest further planning areas: Area 5056 (Benton Range) and Area 5064 (Paiute). The amount of adjoining roadless BLM land, its status, and the Forest's role in evaluating that land is discussed in the capability section of the narratives for the affected areas.

C. AVAILABILITY

The availability section of each narrative addresses the subject of trade-offs between wilderness values and other resources and uses for a given area. The section discusses current and projected uses and/or developments by resource or activity. The following paragraphs define the terms and units of measurement used to describe each resource and highlights ways in which wilderness designation could involve a trade-off with other activities.

Recreation use is expressed in recreation visitor days (RVDs). Recreation is described in terms of the following categories: developed (involving facilities); dispersed nonmotorized (hiking, camping, nordic skiing); dispersed motorized (vehicle-based); and wildlife-related (hunting, fishing and wildlife observation). Motorized recreation, which includes much of the existing hunting and fishing, would be excluded from an area if it were designated wilderness.

Wildlife management opportunities are expressed in terms of acres suitable for habitat manipulation; fish habitat management is discussed in terms of proposed improvement projects such as construction of instream structures. Habitat manipulation and use of motorized construction equipment or vehicles would be prohibited or restricted in wilderness.

Water resources are described in terms of the downstream uses of water from the area and small hydroelectric proposals. If water is destined for domestic use, an undisturbed and undeveloped watershed (such as one would expect in wilderness) would have positive value. Small hydroelectric development represents a potential trade-off, as it would be precluded by wilderness designation.

Watershed condition is described in terms of watershed restoration projects proposed for the area. Such projects might be more costly without the option of using motorized equipment normally prohibited in wilderness.

Current and potential grazing levels are expressed in animal unit months (AUMs). The value of existing range improvements is noted. The distinction between actual and potential use reveals a possible wilderness/nonwilderness trade-off. Grazing in wilderness has typically been allowed to continue at or below those levels that were grazed before wilderness designation. Whereas grazing need not be reduced in wilderness, the potential to increase use may be foregone. The value of range improvements is an indirect indicator of the importance of the area to the range permittee and of the amount of vehicular access currently required to maintain improvements.

Ecological resources include existing or proposed research natural areas and special interest areas set aside to preserve or interpret noteworthy natural features. Wilderness management could conflict with the management objectives of such areas.

Timber in the area is described in terms of acres suitable for timber management and the commercial tree species present. Timber harvest would not be permitted in wilderness.

Acres by mineral potential rating and the number of active claims within the area are displayed. The results of recent mineral surveys are summarized. Areas which lie within a known geothermal resource area (KGRA), areas which have been withdrawn from mineral entry, and outstanding mineral rights are also noted. Mining claims can not be located in designated wilderness; valid existing rights as of December 31, 1983 will be recognized. Mineral development under existing claims, while not automatically excluded from wilderness, is more restricted there than on nonwilderness lands. Lands which have been withdrawn are not available for mineral entry, regardless of the wilderness/nonwilderness decision.

Cultural and historical resource values are described within the limits of our knowledge about the area (most Forest lands have not yet been inventoried for cultural features). Whereas wilderness designation could add a layer of protection to archaeological sites, it could also conflict with cultural resource management, if excavation or the retention of an historical structure not consistent with wilderness values were desired.

Finally, existing uses under special-use permit and included non-National Forest land are described. Special uses are identified by type of activity. Non-Forest land is identified by ownership [i.e., private, City of Los Angeles (DWP), Inyo or Mono Counties, or Southern California Edison (SCE)] and present or proposed use, if known. In the case of either special uses or inholdings, conflicts could arise from the desire for vehicle access across wilderness land and/or the type of use in relation to wilderness values.

D. NEED

The need for more wilderness acreage is examined in terms of several factors: current use of and geographical relationship with neighboring wildernesses and further planning areas; distance from population centers; interest by wilderness proponents; the results of public involvement for RARE II; the results of other public involvement activities related to the area; and the desire for representation of a full range of ecosystems in the wilderness preservation system.

Individual further planning area narratives address only those need variables specific to a given area. A discussion of variables that affect all Inyo National Forest further planning areas, or groups of similar areas, is contained below under the heading: "The Need for More Wilderness on the Inyo National Forest."

E. ENVIRONMENTAL CONSEQUENCES

This section displays the range of management prescriptions that were considered for the further planning area in question and the consequences of applying those prescriptions. It is important to note that the choice is not simply between wilderness and nonwilderness management, but also among different nonwilderness management options.

Factors that were examined include effects on present use, development opportunities foregone, and wilderness values foregone. Effects are quantified wherever possible and include relevant economic factors. A table of management prescription allocations by alternative and a table of key resource outputs from the area under each alternative are included in this section.

For purposes of this analysis, an alternative that was eliminated from detailed study is displayed in the discussion of environmental consequences. The reason for doing so is that some of the further planning areas analyzed were not recommended for wilderness in any of the alternatives studied in detail. Amenity C (AMC), an alternative eliminated from detailed study, did recommend all further planning areas for wilderness.

THE NEED FOR MORE WILDERNESS ON THE INYO NATIONAL FOREST

Current Use of Neighboring Wildernesses

The Inyo National Forest presently includes five wildernesses: the Hoover, the Ansel Adams (formerly Minarets), the John Muir, the Golden Trout, and the South Sierra. All of these areas but the South Sierra are heavily used; daily use quotas have been placed on trailheads for the Ansel Adams and John Muir in order to manage those areas within their capacities. There are more requests for wilderness permits on quota trailheads than there are permits issued. It would therefore appear that the public would make use of considerably more wilderness acreage on the Inyo National Forest if it were available.

The amount of use that can be projected for new wilderness is, however, influenced by factors other than the number of people who currently seek wilderness recreation in neighboring wildernesses. Current levels of use in existing wilderness are linked to the kind of terrain and the kind of recreational experiences available there. Water is almost an absolute requirement for most wilderness users--not only as a life-support factor, but also as a major component of wilderness aesthetics. Scenic variety and well-defined recreational destination points are also important to many people. Finally, people seem to seek those areas with the least evidence of human activity. Those wilderness attributes that foster heavy wilderness use are limited (or lacking) in many of the further planning areas on the Forest.

Most Inyo National Forest further planning areas lack reliable sources of water, recognizable destination points, and/or scenic variety. Many are visibly influenced by human activity and/or are visually intruded by activities outside the boundary.

In assessing need, it is important to note not only the current use levels in geographically neighboring areas, but the type of current use in physically and biologically similar areas. All of the Forest's existing, heavily-used wilderness is in the Sierra Nevada physiographic province. It is therefore difficult to directly assess the need for wilderness recreation opportunities in the Basin and Range province. Indirect measures of need are: 1) the types of recreation presently found in those areas, and 2) the attitude of wilderness proponents toward those areas during public involvement for the RARE II study.

There appears to be a low level of wilderness-type recreation use on lands in the Basin and Range. Due primarily to the lack of drinking water and the difficulty of carrying water over long distances, most recreation in arid country is vehicle-based. On the other hand, wilderness proponents in State and national organizations have targeted parts of the White and Inyo Mountains for wilderness designation. Local environmental groups were divided on this subject and responded more specifically to individual areas.

Distance from Population Centers

Approximately 60 percent of summer wilderness users on the Inyo National Forest come from Southern California; most of the remaining 40 percent come from the San Francisco Bay area. Further planning areas on the Forest are a four-to

Interest by Wilderness Proponents

Wilderness advocacy organizations singled out only a few further planning areas on the Inyo for wilderness recommendation. The Boundary Peak subpart of the White Mountains area has received the greatest amount of attention. The part of the Inyo Mountains around Seephole and Side Hill Springs is seen as desirable wilderness by some local environmental advocates.

RARE II Public Involvement Results

Written responses to the RARE II Draft EIS were weighted heavily in favor of wilderness designation for each area. On a Forest-wide basis, by signature, 70 to 80 percent of written responses favored wilderness. Most of these were personal letters, and approximately 85 percent came from within California. Only 20 to 30 percent of the total responses favored nonwilderness, of which most used response forms and about 70 percent came from within California. Very few respondents in either group addressed specific areas; most parties made broad statements which applied indiscriminately to all roadless areas on the Forest.

The majority of local opinion strongly opposed any additional wilderness acreage on the Inyo National Forest. Although only in a few cases was a measureable effect on local communities anticipated, overriding sentiment resisted additional restriction of public lands. The feeling is strong that big government is already too powerful (a sentiment that reflects the fact that only three percent of Inyo and Mono Counties are privately owned.) There is a perceived lack of local control over land-use decisions.

In addition, the majority of local people do not themselves seek wilderness recreation. The typical area resident hunts, fishes, gathers fuelwood, and/or camps from a pickup truck or 4-wheel drive vehicle. Many of the Forest's further planning areas represent the local "back-yard" for such people, and a sense of proprietary ownership is strong. Such people do not want to see the exclusion of vehicles from traditional recreation sites.

Various Forest user groups have expressed interest in the influence wilderness management would have on their activities. These groups are concerned with the situation that affects them, wherever it arises, rather than being especially interested in any particular area.

The mineral industry favors nonwilderness management of any lands with mineral potential. Geothermal interests favor nonwilderness for lands with geothermal potential. Small hydroelectric proponents favor nonwilderness where there is development potential.

Hunters and fishermen typically favor nonwilderness management so that they can reach their recreation sites by vehicle.

Range permittees favor nonwilderness where they access the range by vehicle, and/or where there is the potential to increase grazing. Special-use permittees and inholders generally favor nonwilderness in order to avoid further restrictions on access and/or activities.

Specific economic interests include timber management, mining, grazing, and recreation.

Need for Ecosystem Representation

The Inyo National Forest has further planning areas with ecosystems belonging to two physiographic provinces. The southern Sierra Nevada physiographic province is already well represented in wilderness on the Inyo, on other National Forests in the Pacific Southwest Region, and in the National Park Service backcountry.

On the other hand, ecosystems typical of the southern Basin and Range province are not represented in existing wilderness on the Forest or in the Region. If it is, indeed, desirable to designate wildernesses that represent major ecosystems, the Inyo National Forest could be in a good position to contribute to that end.

Results of Other Public Involvement

The Inyo National Forest has conducted public involvement activities for several reasons since the RARE II study. These efforts have included public involvement for the Forest planning process, for Mammoth Mountain Ski Area development, for geothermal leasing, for management of the Golden Trout Wilderness, and for the 1983-84 reevaluation of roadless areas. In addition, public hearings have been held by other government parties to review proposals for the Mono Basin National Forest Scenic Area and an alternate access road to the community of Mammoth Lakes.

These efforts have revealed little change in local public opinion during the years between RARE II public involvement and the present. There is still vocal resistance to any kind of additional restriction on public land. Economic growth is still seen as dependent on development, primarily in the recreation industry. Developments such as geothermal and small hydroelectric projects, which could potentially reduce the recreational attraction of the area, are viewed with more caution. There is considerable support for maintaining existing mining and commercial timber operations. Support for additional wilderness is represented by a small but vocal group of local citizens, as well as State and national wilderness advocacy organizations.

COYOTE SE (#5033) **Acres: 56,148 (410)**

A. DESCRIPTION

The Coyote SE area is located in Inyo County, on the White Mountain Ranger District. The Coyote jeep road leads six miles from Bishop to the area boundary, parallels the boundary for 15 miles, and forks to form a corridor that penetrates the area. Trails lead into the area from Big Pine Creek, Bishop Creek, the jeep road, and the foothills northwest of Big Pine.

The boundary is defined by the Glacier Lodge Road and the John Muir Wilderness on the south, the Bishop Creek Road on the west, Coyote jeep road on the northwest, and BLM and City of Los Angeles land on the east and northeast.

The area lies on the east side of the Sierra Nevada in the Owens River, Bishop Creek, and Big Pine Creek watersheds. It is roughly triangular, measures 13 miles long by 12 miles wide, and is nearly bisected by a road corridor. Elevations range from 4,800 feet on the east to 12,226 feet at The Hunchback.

Terrain forms an extensive, steep-sided, high-elevation plateau. The plateau is geologically significant for two reasons: 1) the rolling topography is the remnant of an ancient erosion surface that has been uplifted by earth movements, and 2) it is the only place in the eastern Sierra where the bedrock has bent (downwarped) rather than broken along fault lines as the mountains have risen relative to the valley. Twenty-six miles of perennial stream, of which 11 miles contain trout, cross the area; there are five lakes.

Primary vegetation types are big sagebrush, bitterbrush, and pine-juniper woodland.

Scenic variety in the area falls into class A, 35 percent; class B, 65 percent. The entire eastern side of the Sierra Nevada is a major landmark from Highway 395, which is State-designated as a scenic highway in the Owens Valley. Sugarloaf, Piper Peak, and Round Mountain are identifiable features.

The surrounding area is also scenic, including the dramatic glaciated canyons of Big Pine Creek and Bishop Creek, the rugged high peaks of the Sierra crest, and the Owens Valley.

Another attraction is Grouse Spring, which supports five species of one genus of chipmunk.

Current uses include recreation and cattle grazing.

B. CAPABILITY

The natural ecological integrity of the area has been influenced to a low degree, and natural appearance to a very low degree. A range improvement project replaced sagebrush with grasses 20 years ago, and grazing is scattered across the area. There are many fences and trails and some unimproved roads.

Opportunities for solitude are moderate. The intruding road corridor limits the benefits of the area's large size. The area is topographically isolated from the John Muir Wilderness and adjacent backcountry. Vegetative and topographic screening is moderate. Aircraft using the neighboring Coyote airstrip are seen and heard within the area.

Opportunities for primitive recreation, including diversity and challenge, are also moderate. There are no developed facilities.

A sensitive plant species, Lupinus dedeckerae, grows in the area between High Meadows and Logging Flat. A population has also been found near the area boundary west of Ford Flat.

The original inventory boundary would be unmanageable as wilderness. Vehicle access (4-wheel drive) to much of the area is easy, and evidence of human influence on the area could not be easily separated. A major boundary adjustment could allow for the western one-third of the area (that is lowest in conflicts and impacts) to be added to the John Muir Wilderness.

Six parcels of roadless BLM land, encompassing 2,231 acres, adjoin the area.

C. AVAILABILITY

There are several potential trade-offs between wilderness designation and other resources and activities. Wilderness management would close the area (except on identified road corridors) to vehicles, limit the potential to increase grazing or improve wildlife habitat, prohibit or severely modify potential small hydroelectric development on Baker Creek, and restrict or prohibit mineral exploration and development.

Dispersed nonmotorized recreation, including camping, sightseeing, backpacking, and nordic mountaineering, account for 1,000 RVDs a year; motorized recreation amounts to 500 RVDs. Other recreational activities include big game hunting (700 WFUDs) and fishing (700 WFUDs). Most recreationists are local area residents.

Approximately 4,230 acres are suitable for wildlife habitat manipulation. Green Lake and Rocky Bottom Lake are CDFG-designated for special management of Kamloops rainbow trout. Both lakes are also being considered for designation as wild trout fisheries.

Water from the area flows into the Owens River. Most of the water is exported for domestic use; the remainder is used for local irrigation and domestic needs. A small hydroelectric project has been proposed for Baker Creek.

Watershed restoration projects have been proposed for several meadows in the area. Vehicle access would be important for project sites in the Rawson Creek drainage.

Cattle grazing represents 1,050 AUMs of use; maximum potential is estimated at 2,140 AUMs. Existing improvements are valued at $14,000.

The area is incapable of producing commercial timber.

Of the lands in this area, 9 percent are rated high in mineral potential; 0 percent are medium, and 91 percent are low. There are four active mining claims in or immediately outside the area, of which none are currently producing. There are small, subeconomic tungsten resources, but the geology is not favorable for large deposits.

Cultural resource values include evidence of prehistoric human activity, historic mining and cattle ranching, and the Baker Creek Ranger Station site.

Special uses include a cabin and two fences. The boundary includes 410 acres of undeveloped private and DWP land.

D. NEED

The area belongs to the southern Sierra Nevada physiographic province; current use of wildernesses in that province is extremely heavy. The area is typical of the province. This area adjoins the existing John Muir Wilderness and is near the Table Mountain further planning area.

Public involvement for RARE II indicated strong local support for retaining this area as nonwilderness. The Coyote plateau symbolizes unrestricted recreation for local residents, who do not think of it as a roadless area. Many retired people dependent on vehicle access use the area. Local Paiute Indians use the area for teaching their children to live off the land.

E. ENVIRONMENTAL CONSEQUENCES

Table C-1 indicates which management prescriptions were applied to (all or part) of the roadless area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-2.

Table C-1
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Coyote Southeast (5033)

				Alternatives			
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness				55.6 100%	55.6 100%	11.8 21%	55.6 100%
11. Range		13.6 24%	13.6 24%				
17. Semi-Primitive Rec	55.6 100%	42.0 76%				43.8 79%	
18. Multiple Resource Area			42.0 76%				

Designation: Wilderness
Prescription: # 2
Alternative(s): CEE, AMN, AMC
Effects on the Area: Wilderness designation would maintain the natural integrity and appearance characteristic of the area. Opportunities for finding solitude would increase, as roads penetrating the area would be closed to vehicle use. Management of the area as wilderness would be difficult and costly. The terrain does not provide a natural barrier for preventing illegal vehicle access, and the evidence of human influence would not be easily mitigated.

A loss of motorized recreation would result; a consequence that would be of local concern, as the activity is deeply rooted in the area. Primitive recreation would dramatically increase. The quality of the wilderness experience offered would be high, but lower than experiences available in the adjacent John Muir Wilderness.

Opportunities to manipulate vegetation to enhance livestock grazing would be foregone, though current grazing would be maintained.

Watershed restoration projects could not use motorized equipment. The proposed small hydroelectric project would not be allowed to develop.

The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

Access to and development of private inholdings would degrade wilderness values. A permit authorizing a cabin occupancy would be terminated.

Economic consequences would include those associated with motorized recreation (including some hunting and fishing), grazing, hydroelectric development, and mining. Eight miles of trail and two trailheads would represent the initial costs of wilderness management. Annual administrative costs would increase considerably.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or major resource trade-offs requiring mitigation would result.

Designation: Wilderness (revised boundary)/nonwilderness
Prescription #: 2
Alternative(s): AMB
Effects on the Area: The intent of recommending this combination of prescriptions with the revised wilderness boundary would be to improve wilderness manageability and to recommend only those lands with the highest level of wilderness values, especially primitive recreation opportunities, for wilderness designation.

The revised boundary would reduce potential conflicts, as most other uses and resource opportunities are located on the nonwilderness part of the area.

The exception to this rule, however is mineral potential. Lands recommended for wilderness under this combination have higher proportional mineral potential ratings (21 percent high; 79 percent low) than the entire area (9 percent high; 91 percent low). The wilderness part of the area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted. For this reason, the increased likelihood of Congress designating wilderness with this revised boundary would be compromised by the potential for conflict with mineral activity would compromise that overall benefit.

Wilderness designation would maintain the natural integrity and appearance on lands managed under Prescription 2. Opportunities for solitude and primitive recreation would be also be maintained. Management of the area as wilderness would be fairly easy; terrain would discourage vehicle entry, there is little sign of human disturbance, and existing and most likely potential use patterns are compatible with wilderness. Primitive recreation on those lands would be expected to increase somewhat with the attraction of wilderness designation. The quality of the wilderness experience would be similar to that found in the adjacent John Muir Wilderness.

The wilderness characteristics of the nonwilderness lands would remain at a level similar to the current situation. Vehicle use would be restricted to existing routes, and any new mining roads would be closed to public use.

Opportunities to directly enhance livestock grazing and wildlife habitat would be maintained on nonwilderness lands. Current grazing and hunting would continue, and the opportunity to increase outputs maintained. Management of wildlife and grazing could make use of vehicles, new structural improvements, and vegetation manipulation.

Watershed restoration projects could be completed by conventional methods using motorized equipment. The proposed small hydroelectric project would be allowed to develop.

There would be no public roads constructed for discretionary purposes. Existing vehicle routes would be maintained and new mining roads, though closed to the public, could be constructed.

Access to and development of private inholdings would not represent a conflict, as those properties lie in the nonwilderness part of the area.

Economic consequences would include the maintenance of those benefits associated with motorized recreation (including most hunting and fishing), grazing, and hydroelectric development, with the additional benefits associated with wilderness recreation. Some mineral opportunities would be lost. Six miles of trail and one trailhead would represent the initial costs of wilderness management. Annual administrative costs would increase considerably.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or major resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 17
Alternative(s): PRF
Effects on the Area: Wilderness attributes would be essentially maintained, as the area would be managed to limit vehicle access and public road construction. The present motorized and nonmotorized recreation would continue to steadily increase. Vehicles would be limited to existing roads and trails; primitive and semiprimitive recreation would be emphasized.

Natural appearance would be maintained, except for localized impacts occurring from mining, motorized vehicle use, special use facilities and wildlife or grazing vegetation treatment. The overall impact would not be significant, however, primarily because vehicle use would be limited.

Cattle grazing AUMs would be allowed to increase; vehicle access for range management would be allowed.

Options to consider hydroelectric projects would be maintained. Watershed restoration projects could be accomplished with motorized equipment.

The area would remain available for mineral exploration and development. Activities on valid mining claims would be affected only by applicable mining restrictions. New mining roads would be closed to public entry.

Conflicts between private land uses and management under this prescription would not be significant in comparison with management under a wilderness prescription. Vehicle access to private land would not present a serious concern. Special-use activities would not be affected, and the option would exist to allow other special uses.

Economic consequences would include benefits associated with recreation (motorized and non-motorized), fish and wildlife, grazing, hydroelectric development, and mining. A social consequence would be the loss of the area as potential wilderness.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or major resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 11, 17
Alternative (s): CUR
Effects on the Area: The effects of these two prescriptions on wilderness values would be somewhat greater than those described above for Prescription # 17 alone. Lands managed under Prescription #11 are available for road construction, and any mining roads constructed on lands under that prescription could be left open for public access.

In addition, #11 indicates a greater likelihood of vegetation treatment and structural improvement for range management purposes than # 17.

If the number of fences and other structural improvements increased, some of the existing dispersed recreation in the area could be displaced.

All wildfires would be controlled under the CUR alternative.

The primary opportunity gained and economic benefit derived from this combination of prescriptions is the option of improved access for livestock management and associated benefits for range permittees. In addition, mining opportunities would be enhanced as access throughout the area would be increased.

Designation: Nonwilderness
Prescription #: 11, 18
Alternative (s): RPA
Effects on the Area: The effects of these two prescriptions on wilderness values would even greater than those described above for Prescriptions 11 and 17. Lands managed under both of these prescriptions are available for road construction or open ORV designation, and any mining roads constructed on lands under these prescriptions could be left open for public access.

Motorized recreation would be expected to increase; access for range management purposes would be virtually unrestricted, and mining opportunities would be enhanced as access throughout the area would be increased.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

The primary opportunities gained and economic benefits derived from this combination of prescriptions is the option of increased opportunities for motorized (including ORV) recreation. In addition, mining opportunities would be enhanced as access throughout the area would be increased.

Table C-2
Average Annual Outputs for Decades 1 and 5
Coyote Southeast (5033)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0	0	0	55.6	55.6	11.8	55.6
Nonwilderness (M acres)	--	55.6	55.6	55.6	0	0	43.8	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	1500	1500	1500	0	0	1185	0
	5	2250	2250	2250	0	0	1178	0
Wilderness Recreation (RVDs)	1	0	0	0	0	9300	1950	9300
	5	0	0	0	0	11400	2925	11400
Total Wildlife and Fish User Days (WFUDs)	1	1400	1400	1400	1000	1000	1320	1000
	5	2100	2100	2100	1350	1350	1980	1350
Grazing (AUMs)	1	1268	1268	1268	1050	1050	1268	1050
	5	2140	2140	2140	1050	1050	2140	1050
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	66	66	66	178	178	153	178
	5	86	86	86	220	220	189	220
Costs (M$)	1	18	18	18	336	336	291	336
	5	21	21	21	140	140	122	140
Net Benefits (M$)	1	48	48	48	-158	-158	-138	-158
	5	65	65	65	80	80	67	80

TABLE MOUNTAIN (#5035) **Acres: 4,138**

A. DESCRIPTION

The Table Mountain area lies in Inyo County on the White Mountain Ranger District. The Tyee Lakes trail leads across an arm of the area from the South Lake Road into the wilderness. The center of the area is most accessible on foot, cross-country north from the trail.

The boundary is defined by the South Lake and Lake Sabrina Roads on the northeast and northwest, and by the John Muir Wilderness on the south.

The area lies on the east side of the Sierra Nevada, in the Bishop Creek watershed. It is roughly triangular, approximately six miles long and two miles wide. Elevations range from 8,200 to 11,936 feet.

Terrain forms a steep-sided plateau. The plateau represents an ancient erosion surface that has been raised by mountain-building and separated from similar lands on the Coyote plateau by stream erosion. There is one mile of perennial stream, with trout found throughout, and no lakes.

Primary vegetation types in the area are eastside pine, big sagebrush, and subalpine fir forest.

The entire area falls into variety class A. The surrounding country is also scenic. The deep, glaciated canyons of Bishop Creek's middle and south forks, the rugged peaks of Thompson Ridge and the Sierra Crest, and two large, scenic reservoirs are visible at close range. The Owens Valley, the White Mountains, and the volcanic highlands north of Bishop can be seen in the distance.

The only current use is recreation.

B. CAPABILITY

The natural ecological integrity and natural appearance of the area are essentially unmodified. The Tyee Lakes trail is the only sign of human influence.

Opportunities for solitude are high. The area is large in combination with adjoining wilderness and National Park backcountry. Topographic screening is high; vegetative screening is moderate. The visual intrusion of the two adjacent roads is moderated by the steep slopes of the area and vertical distance from the traffic.

Opportunities for primitive recreation are low. Although the area (in combination with neighboring areas) is large and there are no facilities, diversity is limited by the steep topography and lack of water. There are few challenges.

The inventory boundary would be manageable as wilderness, with only minor adjustments at most; steep slopes form a natural barrier to vehicles.

C. AVAILABILITY

There are no trade-offs between wilderness designation and other resources and activities.

Hiking and camping account for 500 RVDs of use each year; big game hunting amounts to 80 WFUDs.

Water from the area flows into Bishop Creek, where it is used to generate hydroelectic power. Some is then used for local domestic needs; the rest flows into the Owens River from which it is exported for domestic use.

The area is not capable of commercial timber production.

Of the lands in this area, 7 percent are rated high in mineral potential; 51 percent are medium, and 42 percent are low. There is one active mining claim in the area, which has a subeconomic tungsten deposit.

D. NEED

The area belongs to the southern Sierra Nevada physiographic province; current use of wildernesses in that province is extremely heavy. The area is typical of the province. This area adjoins the existing John Muir Wilderness and is near the Coyote Southeast and Buttermilk further planning areas.

Public involvement for the RARE II study indicated that most local residents already see this area as wilderness; there appear to be no conflicts.

E. ENVIRONMENTAL CONSEQUENCES

Table C-3 indicates which management prescriptions were applied to (all or part) of the roadless area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-4.

Table C-3
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Table Mountain (5035)

	Alternatives						
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness	4.1 100%				4.1 100%		4.1 100%
17. Semi-Primitive Rec		4.1 100%				4.1 100%	
18. Multiple Resource Area			4.1 100%	4.1 100%			

Designation: Wilderness
Prescription #: 2
Alternative(s): PRF, AMN, AMC
Effects on the Area: Wilderness designation would preserve the wilderness attributes of the area. The quality of the experience and quantity of use received would be lower than that found in the contiguous John Muir Wilderness area. The inventory boundary would be manageable as wilderness; it would not be difficult or costly to administer.

Current uses would not change; recreation use would continue to be nonmotorized (primarily hiking, camping and big game hunting). Because of the lack of water and few challenges, the use level would remain low.

The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

There are no known social or economic dependencies related to the area. A social benefit would be formal wilderness designation.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 17
Alternative(s): CUR, AMB
Effects on the Area: Wilderness attributes would not be affected. The area is steep and difficult to access, hence it would be feasible to continue limiting vehicle acess to the area. There would be no effect on the present low level of nonmotorized recreation.

The area would remain available for mineral entry and leasing; only applicable mining restrictions would affect activities. New roads constructed for mining access would be closed to the public.

Economic and social benefits would not significantly change. A social cost would be the loss of a potential wilderness designation.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions. (All wildfires would be controlled under the CUR alternative.)

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 18
Alternative(s): RPA, CEE
Effects on the Area: The effects of Prescription # 18 would differ very little from those of # 17 in this area. Although road construction would be allowed, the terrain would tend to prevent such construction on all but the outside edges of the area. If a mining road were constructed, it could be left open for public access and increased motorized recreation opportunities.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

Table C-4
Average Annual Outputs for Decades 1 and 5
Table Mountain (5035)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	4.1	0	0	0	4.1	0	4.1
Nonwilderness (M acres)	--	0	4.1	4.1	4.1	0	4.1	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	0	500	500	500	0	500	0
	5	0	750	750	750	0	750	0
Wilderness Recreation (RVDs)	1	700	0	0	0	700	0	700
	5	1090	0	0	0	1090	0	1090
Total Wildlife and Fish User Days (WFUDs)	1	80	80	80	80	80	80	80
	5	120	120	120	120	120	120	120
Grazing (AUMs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits (M$)	1	12	8	8	8	12	8	12
	5	18	12	12	12	18	12	18
Costs (M$)	1	20	4	4	4	20	4	20
	5	13	4	4	4	13	4	13
Net Benefits (M$)	1	-8	4	4	4	-8	4	-8
	5	5	8	8	8	5	8	5

BUTTERMILK (#5038) Acres: 854 (300)

A. DESCRIPTION

The Buttermilk area is located in Inyo County, on the White Mountain Ranger District. The Buttermilk jeep road leads four miles from the Bishop Creek Road to the area boundary. The area is accessible on foot cross-country from that road.

The boundary is defined by the John Muir Wilderness on the west, the Buttermilk jeep road on the east, the McGee Creek road on the south, and the Horton Creek mining road on the north.

The area lies on the eastern escarpment of the Sierra Nevada, in the Owens River and Horton Creek watersheds. It is rectangular, and measures 1 mile wide by 2.25 miles long. Elevations range from 7,660 feet on the east to 8,400 feet on the west.

Terrain is moderately steep, consisting mainly of alluvial material. Two miles of perennial stream, of which one mile contains trout, cross the area; there are no lakes.

The predominant vegetation type is bitterbrush; small amounts of eastside pine are present at higher elevations.

Scenic variety in the area falls into class A, 50 percent; class B, 50 percent. The surrounding area is also scenic. Uphill and to the west, terrain rises steeply to the rugged peaks of the Sierra Crest. A cluster of jumbled, smoothly eroded granite domes lies east of the area. The White Mountains, Owens Valley, and Casa Diablo area are visible in the distance.

Current uses include recreation and cattle grazing.

B. CAPABILITY

The natural ecological integrity and natural appearance of the area have been influenced to a low degree. Grazing has changed the vegetation on more than 50 percent of the area, and a fence bisects the area.

Opportunities for solitude are low. Although the area is large when combined with the adjoining wilderness and National Park backcountry, there is little vegetative or topographic screening. Recreation use is concentrated in the aspen groves along the streams. Many dirt roads are easily seen, even from the center of the area. Opportunities for primitive recreation are also low. There is little diversity, and no challenge within the area.

The original inventory boundary would not be manageable as wilderness; although conflicting uses could be excluded with an adjustment, the evidence of human influence is scattered throughout the area and could not be separated.

C. AVAILABILITY

There are few potential trade-offs between wilderness designation and other resources and activities.

Dispersed nonmotorized recreation represents 200 RVDs and big game hunting 200 WFUDs a year.

Approximately 20 acres are suitable for wildlife habitat manipulation. There is some deer winter range in the area.

Water from the area is used locally for irrigation and domestic needs; most then flows into the Owens River, from which it is exported for domestic use.

Cattle grazing represents 100 AUMs of use; maximum potential is estimated at 152 AUMs. Existing range improvements are valued at $2,000.

The area is incapable of producing commercial timber.

Of the lands in this area, all are rated low in mineral potential. There are no active mining claims in the area.

The boundary includes 300 acres of private and DWP land; the only development is a water transmission line.

D. NEED

The area belongs to the southern Sierra Nevada physiographic province; current use of wildernesses in that province is extremely heavy. The area is not typical of the province, as it is low in elevation and lacking in recreational attraction. This area adjoins the existing John Muir wilderness and is near the Table Mountain further planning area.

Neither wilderness proponents nor opponents, locals nor non-locals have expressed much interest in the area.

E. ENVIRONMENTAL CONSEQUENCES

Table C-5 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-6.

Table C-5
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Buttermilk (5038)

	Alternatives						
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness					0.9 100%		0.9 100%
11. Mule Deer Habitat	0.9 100%					0.9 100%	
17. Range		0.9 100%	0.9 100%	0.9 100%			

Designation: Wilderness
Prescription #: 2
Alternative(s): AMN, AMC
Effects on the Area: Wilderness designation would maintain the wilderness attributes of the area. However, as the evidence of human influence and encroachment is distributed throughout the area, those attributes are not especially high. Developments or activities on private inholdings could further degrade the area's wilderness values.

Recreation use, primarily nonmotorized hiking, fishing, and big-game hunting, would remain low. The conditions necessary for attracting intensive wilderness recreation would not exist.

The options of constructing improvements or using prescribed fire for wildlife habitat improvement would be foregone.

Existing grazing use would continue under more stringent regulations. However, opportunities to improve range conditions and increase use would be foregone. The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

There are no known social or economic dependencies on the area except for grazing. Income generated in this area by increased recreation use would be insignificant. Formal wilderness designation would represent a social benefit.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or major resource affects requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 4
Alternative(s): PRF, AMB
Effects on the Area: The natural appearance and integrity of the area would be temporarily reduced where wildlife habitat was improved by vegetation treatment.

Options to manipulate wildlife habitat would remain available. However, only minor benefits would be received as the acreage suitable for treatment is limited. Cattle grazing would be held to current levels, as any increase in forage would be allocated to deer.

The area would remain available for new mineral claims.

Private inholdings would not present a conflict with management of the area.

A slight economic benefit would occur from increased big-game hunting opportunities on or near the area. These benefits would somewhat offset by the social loss of a potential wilderness designation.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or major resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 11
Alternative (s): CUR, CEE, RPA
Effects on the Area: The effects of this prescription on the area would be similar to that of Prescription 4, described above, except that new public roads for range management would be allowed, and any mining roads that developed would be open to public use. The major difference would be an increase of up to 50% in cattle grazing, as any increase in forage would be allocated to livestock.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions. (All wildfires would be controlled under the CUR alternative.)

Table C-6
Average Annual Outputs for Decades 1 and 5
Buttermilk (5038)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0	0	0	0	0.9	0	0.9
Nonwilderness (M acres)	--	0.9	0.9	0.9	0.9		0.9	0.9
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	200	200	200	200	0	200	0
	5	300	300	300	300	0	300	0
Wilderness Recreation (RVDs)	1	0	0	0	0	250	0	250
	5	0	0	0	0	310	0	310
Total Wildlife and Fish User Days (WFUDs)	1	200	200	200	200	200	200	200
	5	300	300	300	300	300	300	300
Grazing (AUMs)	1	100	112	112	112	100	100	100
	5	100	152	152	152	100	100	100
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	9	9	9	9	9	9	9
	5	9	9	9	9	10	9	10
Costs (M$)	1	2	2	2	2	6	2	6
	5	2	2	2	2	3	2	3
Net Benefits (M$)	1	7	7	7	7	3	7	3
	5	7	7	7	7	7	7	7

WHEELER RIDGE (#5040) Acres: 16,229

A. DESCRIPTION

The Wheeler Ridge area lies in Inyo (29 percent) and Mono (71 percent) Counties, on the White Mountain Ranger District. The area is accessible to 4-wheel drive vehicles by unimproved road, or on foot cross-country from the Kenneth and Dorothy Lakes areas in the John Muir wilderness.

The boundary is defined by the Pine Creek Road and the Pine Creek mining road on the southeast and southwest, the Forest boundary on the east, and the Sand Canyon mining road on the north and west. The area curves around a protrusion of the John Muir Wilderness.

The area lies on the east side of the Sierra Nevada, in the Rock Creek watershed. The area is long (11 miles) and narrow (3.75 miles wide), and curves around the lower slopes and north end of a projecting ridge.

Terrain includes the dissected, precipitous slopes on both sides of a ridge between deep canyons, and part of the rolling ridgetop area. Geology consists primarily of exposed metamorphic rock which has been upthrust several thousand vertical feet, then eroded by water and glacial action. There are four miles of perennial stream, but no fisheries, and one small lake.

Primary vegetation types are lodgepole pine forest, big sagebrush, and mountain mahogany, with smaller amounts of eastside pine and subalpine fir forest.

Scenic variety in the area falls into class A, 93 percent; class B, 5 percent; class C, 2 percent. Wheeler Ridge and Pine Creek canyon are major landmarks from Bishop and Highway 395. The surrounding area is also scenic, and views from the roadless area spectacular. The Owens Valley, Mt. Tom, the rugged high peaks of the Sierra Crest, the deep canyons of Big Pine and Rock Creeks, the White Mountains, and the volcanic highlands of the Casa Diablo Peak area are all visible from the center of the area.

Current uses include recreation and wildlife management.

B. CAPABILITY

The natural ecological integrity of the area is essentially unmodified; influences on its natural appearance are moderate. The top of Wheeler Ridge shows localized evidence of mining, including tailings and vegetation damage; cut-and-fill roads to Morgan Pass, and onto Wheeler Ridge are highly visible; air pollution from the Pine Creek tungsten mill affects the extreme southern end of the area.

Opportunities for solitude are high. The area is large, especially in combination with the adjoining wilderness and National Park backcountry. Screening is moderate, and visual intrusions separated by steep slopes. Only the Pine Creek mine and mill are visible at close range, and those only from a small part of the area.

Opportunities for primitive recreation are low, pas there are few challenges, and little diversity.

Special features include a herd of California bighorn sheep transplanted to the area in 1978.

Although the original inventory boundary would not be manageable as wilderness, major boundary adjustments could be made to exclude human impacts and conflicting activities.

Two parcels of roadless BLM land, encompassing 3,197 acres, adjoin the area.

C. AVAILABILITY

The Wheeler Ridge area represents two notable trade-offs between wilderness designation and other activities. Wilderness management would close the area to vehicular recreation, and would limit the feasibility of wildlife habitat manipulation.

Four-wheel drive recreation amounts to 100 RVDs, dispersed nonmotorized recreation 100 RVDs, and small game hunting 100 WFUDs a year. A State-funded green sticker project has been approved for the Wheeler Crest mine road area.

California bighorn sheep were reintroduced into the area in 1978. Approximately 40 acres are suitable for wildlife habitat manipulation.

Water from the area is used locally for irrigation and domestic needs, then flows into the Owens River and is exported for domestic use.

The area is incapable of commercial timber production.

Of the lands in this area, 15 percent are rated high in mineral potential; 85 percent are rated low. There are no active mining claims in the area. The Pine Creek Mine and other mines along the southern boundary of the roadless area have produced a large part of the world supply of tungsten.

D. NEED

The area belongs to the southern Sierra Nevada physiographic province; current use of wildernesses in that province is extremely heavy. The area is typical of the province, except for its lack of water. This area adjoins the existing John Muir Wilderness; no other further planning areas are nearby.

Neither proponents nor opponents of wilderness have expressed interest in this particular area.

E. ENVIRONMENTAL CONSEQUENCES

Table C-7 indicates which management prescriptions were applied to (all or part) of the roadless area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-8.

Table C-7
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Wheeler Crest (5040)

	Alternatives						
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness					16.2 100%		16.2 100%
3. Mountain Sheep Habitat	7.7 48%	7.7 48%				7.7 48%	
17. Semi-Primitive Rec	8.5 52%	8.5 52%				8.5 52%	
18. Multiple Resource Area			16.2 100%	16.2 100%			

Designation: Wilderness
Prescription #: 2
Alternative(s): AMN, AMC
Effects on the Area: Wilderness designation would maintain the attributes of solitude and natural integrity that are characteristic of the area. Bighorn sheep management concerns would be an essential consideration in determining wilderness recreation capacity. The many conflicting activities and human influences in the area would make wilderness administration difficult.

Motorized recreation would be eliminated from the area. While limited by the lack of water, the amount of primitive recreation would grow, particularly in the absence of vehicles. The experience offered would be of lower quality than that found in the adjacent John Muir Wilderness.

Options to improve wildlife habitat would be foregone. Bighorn sheep habitat would receive adequate protection. The scenic quality of the area as seen from Highway 395 would receive maximum protection.

The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

The Wells Meadow administrative site (of historical significance) would be impacted, as the facility is currently used to for government livestock grazing; that use could not continue in wilderness.

There are no direct economic dependencies on this area. Social benefits would result from increasing the amount of wilderness on the Forest and protecting an important viewshed. Economic costs would be incurred from the administration of wilderness regulations and construction of a trailhead. Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 3, 17
Alternative(s): PRF, CUR, AMB
Effects on the Area: Wilderness attributes would be essentially maintained for the eastern portion of the area, which would be managed with a bighorn sheep emphasis. Roads, trails, and recreation use would be prohibited or modified. Visual quality would be maintained.

Wilderness attributes on the western portion of the area would be slightly more affected than those on the east. Four-wheel drive recreation on existing routes would be allowed to continue and to increase. The potential for visual degradation would not be severe, however, as vehicles are mainly seen only from within the area.

Wildlife habitat manipulation options would be maintained. Management of bighorn sheep habitat would take priority over other management considerations on the eastern portion.

Mining opportunities would be retained; any new mining roads would be closed to the public.

Use of Wells Meadow area for administrative livestock would remain unchanged.

Economic and social benefits would be few. The most significant cost would be the loss of potential wilderness designation. The option of seeking State funding to develop a green sticker project for off-road vehicle use would be maintained.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions. (All wildfires would be controlled under the CUR alternative.)

No other foreseeable environmental changes or resource trade-offs would result.

Designation: Nonwilderness
Prescription #: 18
Alternative(s): RPA, CEE
Effects on the Area: Wilderness attributes would deteriorate over time under this prescriptions. As vehicle access improved, ORV use would increase with corresponding effects of natural appearance and opportunities for solitude. As motorized use increased, opportunities for primitive recreation would decrease.

Four-wheel drive recreation would be allowed to continue and to increase. Visual quality would deteriorate somewhat, especially if new mining roads were constructed or ORV tracks proliferated.

Options to improve wildlife habitat would be maintained. Bighorn sheep habitat would be managed for population viability, but would not be emphasized.

Mining opportunities would be enhanced as access throughout the area increased; any new mining roads could be left open for public access.

Use of Wells Meadow area for administrative livestock would remain unchanged.

Economic and social benefits would include improved opportunities for motirized recreation and mining. The most significant cost would be the loss of potential wilderness designation. The option of seeking State funding to develop a green sticker project for off-road vehicle use would be maintained.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs would result.

Table C-8
Average Annual Outputs for Decades 1 and 5
Wheeler Ridge (5040)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0	0	0		16.2	0	16.2
Nonwilderness (M acres)	--	16.2	16.2	16.2	16.2	0	16.2	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	200	200	200	200	0	200	0
	5	300	300	300	300	0	300	0
Wilderness Recreation (RVDs)	1	0	0	0	0	352	0	352
	5	0	0	0	0	546	0	546
Total Wildlife and Fish User Days (WFUDs)	1	100	100	100	100	100	100	100
	5	150	150	150	150	150	150	150
Grazing (AUMs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benfits(M$)	1	3	3	3	3	5	3	5
	5	4	4	4	4	8	4	8
Costs (M$)	1	2	2	2	2	22	2	22
	5	2	2	2	2	6	2	6
Net Benefits (M$)	1	1	1	1	1	-17	1	-17
	5	2	2	2	2	2	2	2

LAUREL-MC GEE (#5045) Acres: 9,090 (80)

A. DESCRIPTION

The Laurel-McGee area lies in Mono County on the Mammoth Ranger District. The McGee Creek, Convict Lake, Laurel Canyon and Sherwin Creek Roads lead to and/or parallel the boundary. Several jeep roads and four constructed trails lead into or across the area.

The boundary is defined by the McGee Creek Road on the south, the Sherwin Creek Road on the north, the Sherwin Lakes trail on the northwest, the John Muir Wilderness on the south and west, and the Forest Boundary on the east. The adjoining land is administered by the BLM, with some parcels in private ownership. The Laurel Canyon jeep road intrudes the area.

The area lies on the eastern escarpment of the Sierra Nevada, in the Lake Crowley and Hot Creek watersheds. It is long and convoluted, and wraps around the lower slopes of McGee, Laurel, and Bloody Mountains. Total length is 9 miles; width varies from 0.75 to 3 miles. Elevations range from 7,160 to 11,067 feet.

Terrain ranges from steep to gradually sloping, rolling to flat. The exposed rock of the upper slopes is metamorphic; the lower slopes consist mostly of glacial till. The oldest fossils yet found in the Sierra Nevada are in this area. The lateral moraines of Convict, Laurel, and McGee canyons and the terminal moraine of Sherwin Creek are classic examples of those features. Six miles of perennial stream, with fisheries throughout, cross the area; there are four lakes.

The predominant vegetation type is bitterbrush.

Scenic variety in the area falls into class A, 65 percent; class B, 28 percent; class C, 7 percent. McGee Mountain, the unnamed peak just east of Mt. Morrison, and the lateral moraines listed above, are scenic landmarks from Highway 395; most of the area serves as a scenic backdrop for the Mammoth Lakes community. The surrounding countryside is also scenic. Mt. Morrison, Laurel and Bloody Mountains rise steeply to the west. Lake Crowley, the Glass Mountains, Mammoth Knolls, Mammoth Mountain, and the Sierra crest are visible from within the area.

Current uses include recreation, cattle grazing, and wildlife management.

B. CAPABILITY

The natural ecological integrity of the area has been influenced to a low degree, and its natural appearance to a very low degree. Most impacts are localized and/or very near the area boundary. Signs of human influence include several dirt roads, trails, an irrigation ditch, a powerline, a waterline, trailhead facilities, an organization camp, a cattle water tank, range fences, an effluent storage pond, spoil piles at the Tiptop and Laurel mines, grazing, vegetation type conversion areas, and several cabins.

Opportunities for solitude are high. The area is large, especially in combination with adjoining wilderness. Topographic screening is high, but

vegetative screening is low. Intrusions are low at the higher elevations, but high on the periphery. Noise from the Sherwin moto-cross track can be heard from the western end of the area.

Opportunities for primitive recreation are also high. Large size is a factor, along with limited development and very diverse opportunities. Ski mountaineering offers significant challenge.

The original inventory boundary would not be manageable as wilderness without adjustments. Terrain does not serve as an effective barrier against vehicle access. Most of the impacts, conflicting uses, and terrain accessible by vehicle are near the periphery and could be excluded by a boundary revision. One parcel of roadless BLM land, encompassing 100 acres, adjoins the area.

C. AVAILABILITY

There would be several potential conflicts between wilderness designation and other resources and activities. Wilderness management would close the area to vehicles; if roads were not excluded by boundary adjustment, some motorized recreation would be lost; management of the grazing area would be more difficult; use of the organization camp would be restricted. The effluent storage pond would represent a conflict unless the area boundary were revised to exclude the pond. The western half of the area would be affected by the sights and sounds of ski area use if the Sherwin Bowl potential ski area were developed.

Developed recreation accounts for 4,500 RVDs a year; hiking, stock travel, and camping, 5,000 RVDs; 4-wheel drive recreation, 6,400 RVDs; and cross-country skiing, 200 RVDs. Big game hunting amounts to 6,000 WFUDs, small game hunting, 2,600 WFUDs, and fishing 11,000 WFUDs. There is some helicopter skiing on McGee Mountain, and snowmobiling on the lower slopes.

The Sherwin mule deer herd migrates through the area. Approximately 30 acres are suitable for habitat manipulation.

Water from the area is used for local irrigation. It then flows into Lake Crowley, is used to generate hydroelectric power, and is then exported for domestic use. An effluent storage site is located near the boundary at Laurel Pond.

Grazing represents 1,890 AUMs; maximum potential is estimated at 2,265 AUMs. Existing improvements are valued at $9,000.

The area contains 880 acres of tentatively suitable timber land. Commercial species include Jeffrey pine and red fir. The remainder of the area is unsuitable for timber management.

Of the lands in this area, 16 percent are rated high in mineral potential; 84 percent are rated low. There are more than 100 active mining claims in, or immediately adjacent to the area, of which none is currently producing. Some tungsten has been produced from mines and prospects in, or adjacent to, the area. Subeconomic deposits of zinc, copper, silver, and lead have been found at Lucky Strike Mine; the potential for more, similar deposits is high.

Cultural resource values include an exceptionally large Indian encampment site near Laurel Springs; there are also historic mining and range management sites.

Potentially conflicting special uses include the Laurel Pond effluent facility and the Tobacco Flat Road. There are 80 acres of undeveloped private land.

D. NEED

The area belongs to the southern Sierra Nevada physiographic province; current use of wildernesses in that province is extremely heavy. Most of the area is typical of the province. This area adjoins the existing John Muir wilderness; there are no neighboring further planning areas.

Public involvment for the RARE II Study indicates little interest in the outcome of this area.

E. ENVIRONMENTAL CONSEQUENCES

Table C-9 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-10.

Table C-9
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Laurel McGee (5045)

				Alternatives			
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness				9.1 100%	9.1 100%	9.1 100%	9.1 100%
4. Mule Deer Habitat	0.8 9%						
10. High Level Timber			1.1 12%				
11. Range	0.5 5%	1.3 14%	7.0 77%				
17. Semi-Primitive Rec	7.8 86%	7.8 86%	1.0 11%				

Designation: Wilderness
Prescription #: 2
Alternative(s): CEE, AMN, AMB, AMC
Effects on the Area: Wilderness characteristics would be maintained, as new activities capable of affecting those characteristics would not be allowed. Opportunities for solitude would be enhanced, since numerous four-wheel drive roads would be closed to vehicle use. Management of the area as wilderness would be costly and difficult near the periphery; the many conflicting uses and potential for illegal vehicle encroachment would pose problems unless the boundary were adjusted.

The primary recreation opportunities foregone would be motorized and wheeled vehicle use (including vehicle-based hunting, fishing, camping, snowmobiling, and all-terrain bicycle riding) and developed sites (such as the existing organization camp). Opportunities for primitive recreation, on the other hand, would be enhanced.

The critical visual quality of the area would receive maximum protection, preventing further degradation of this resource (except for impacts caused by the development of existing mining claims).

An important deer migration route would be protected. Hunting and fishing would decline somewhat, as much of the existing use is vehicle based.

Although grazing would not be eliminated, opportunities to increase grazing outputs would be foregone. Use of the range allotment would be more restrictive.

Suitable timber occupying 880 acres would not be available for harvest.

The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted. Since profitable mining operations exist, and since there is evidence of additional mineral resources, there would be a predicted adverse effect on mineral opportunities.

Social and economic dependencies include sheep and cattle grazing, mining, recreation, and special-use activities. Wilderness designation would not eliminate grazing or mining, but these activities would be considerably more restricted. Costs associated with these operations would be greater than at present, with little or no opportunity to increase outputs.

Other adverse socioeconomic impacts would be associated with a sewage effluent storage pond, an organization camp, recreation residences, and helicopter skiing.

Social benefits would be gained with more wilderness and lost with the loss of a popular four-wheel drive area. [illegible]derness management, including the enforcement of regulations (particula[illegible]ong the north and east boundaries) would be costly. Trail and trailhea[illegible]sts would also be associated with implementing this prescription.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or major resource tradeoffs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 4, 11, 17
Alternative(s): PRF
Effects on the Area: For the most part, wilderness characteristics would be maintained in the area, as the activities most capable of affecting those characteristics (such as new road construction or timber harvest) would be restricted or prohibited. Only mineral activity and vegetation treatment for wildlife could affect natural intergrity and natural appearance. Opportunities for solitude and primitive recreation would remain essentially the same as at present.

Primary recreation opportunities would still include motorized and wheeled vehicle use (including vehicle-based hunting, fishing, camping, snowmobiling, and all-terrain bicycle riding) as well as hiking and equestrian use. The existing organization camp could continue in operation. The critical visual quality of the area would receive a high level of protection.

An important deer migration route would be protected, and vegetation could be manipulated to benefit wildlife.

Although grazing would not be eliminated, opportunities to increase grazing outputs would be foregone as wildlife would have priority for any increases in forage.

Suitable timber occupying 880 acres would not be available for harvest, as those acres would be managed with an emphasis on primitive recreation.

New mining claims could be filed, and mining activities would be subject only to applicable mining laws and coordination with other resources; any new mining roads would be closed to public use.

The need for access to private inholdings would not conflict with the management of adjoining lands.

Social and economic dependencies such as grazing, mining, motorized recreation, and special-use activities would benefit from the range of management options available (in contrast with wilderness). Other socioeconomic benefits would be associated with maintenance of a sewage effluent storage pond, the organization camp, recreation residences, four-wheel drive recreation, and helicopter skiing. There would be a social cost in the lack of wilderness designation for an area with wilderness values similar to those in the adjoining John Muir Wilderness.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or major resource tradeoffs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 11, 17
Alternative(s): CUR
Effects on the Area: Wilderness attributes of solitude, natural integrity and appearance would be little affected for most of the area. Near the periphery, however, those attributes would be degraded by activities such as recreation, grazing, wildlife, timber, and special uses.

Motorized recreation would continue to increase; the increase would be greater under Prescription 11 as new public roads would not be constructed under Prescription 17. Nonmotorized recreation, especially in winter, would also maintain a steady growth rate.

There would be many potential impacts on visual resources; although overall visual integrity would be maintained, isolated impacts would occur throughout the area.

Vegetation could be manipulated to improve grazing with temporary effects on natural appearance. Other range improvements could be developed; duck nesting habitat would probably be constructed at Laurel Pond and water sources and fencing added to the range allotments. Range outputs would increase.

Timber harvesting would be prohibited, as it would adversely affect emphasized recreation and wildlife values.

The area would remain open to new mining claims. Mining activities would be affected only by applicable regulations. New road construction or upgrading of existing roads would be likely to result. New mining roads would be closed to public use unless they fell within lands administered under Prescription 11.

Existing improvements would not be affected. The option to permit additional special uses would exist.

Economic benefits would occur from increasing grazing, motorized recreation (including hunting and fishing), and mining opportunities. Social costs would include a loss of potential wilderness designation for an area with wilderness qualities comparable to the existing John Muir Wilderness.

All wildfires would be controlled under the CUR alternative.

No other foreseeable environmental changes or major resource tradeoffs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 10, 11, 17
Alternative(s): RPA
Effects on the Area: The effects of this combination of prescriptions would be similar to the effects of 11 and 17 discussed above. The only difference would be commercial timber harvest affecting 880 acres of trees over a 1,100-acre area. Additional roads would be built, improving access to the

area. The appearance of vegetation would shift from natural to managed. Existing recreational use of those lands would drop. Mining opportunities would be enhanced as access throughout the area would be increased. All wildfires would be controlled on lands under Prescription 10.

The economic benefit would amount to 134,000 board feet of timber in the first decade, dropping to 78,000 board feet by the fifth decade.

Table C-10
Average Annual Outputs for Decades 1 and 5
Laurel-McGee (5045)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0	0	0	9.1	9.1	9.1	9.1
Nonwilderness (M acres)	--	9.1	9.1	9.1	0	0	0	0
Total Developed Recreation (RVDs)	1	4500	4500	4500	0	0	0	0
	5	4500	4500	4500	0	0	0	0
Dispersed Recreation (RVDs)	1	11600	11600	11600	0	0	0	0
	5	17400	17400	17400	0	0	0	0
Wilderness Recreation (RVDs)	1	0	0	0	18000	18000	18000	18000
	5	0	0	0	19500	19500	19500	19500
Total Wildlife and Fish User Days (WFUDs)	1	19600	19600	19600	15000	15000	15000	15000
	5	29400	29400	29400	22500	22500	22500	22500
Grazing (AUMs)	1	1890	1965	1965	1890	1890	1890	1890
	5	1890	2265	2265	1890	1890	1890	1890
Suitable Timber Land (acres)	1	0	0	882	0	0	0	0
	5	0	0	882	0	0	0	0
Timber Volume (MMCF)	1	0	0	.021	0	0	0	0
	5	0	0	.012	0	0	0	0
(MMBF)	1	0	0	.134	0	0	0	0
	5	0	0	.078	0	0	0	0
Gross Benefits (M$)	1	597	612	616	572	572	572	572
	5	791	799	801	848	848	848	848
Costs (M$)	1	465	475	479	46	46	46	46
	5	123	131	132	64	64	64	64
Net Benefits (M$)	1	132	137	137	526	526	526	526
	1	668	558	669	784	784	784	784

HORSE MEADOW (#5049) Acres: 5,580

A. DESCRIPTION

The Horse Meadow area lies in Mono County on the Mono Lake Ranger District. Several dirt roads lead from Highway 395 or the Tioga Pass Road to the area boundary. Three trails cross the area.

The boundary is defined by the Parker Lake road on the south, the Big Bend campground road on the north, the Minarets Wilderness on the west, and several dirt roads on the east.

The area lies on the east side of the Sierra Nevada in the Mono Lake watershed. It is irregular in shape, consisting of three arms projecting from a center. Each arm is 2-3 miles long and 0.25 to 0.5 mile wide. Elevations range from 6,880 to 8,841 feet.

The terrain ranges from rolling to steep. The lower slopes lie on glacial moraines; the upper elevations on precipitous cliffs of exposed metamorphic rock. The lateral moraines below Bloody Canyon are geologically significant because they provided the evidence that led to Russell's hypothesis that there had been more than one glacial episode in the Sierra Nevada. There are four miles of perennial stream, of which two miles contain trout, but no lakes.

Primary vegetation types are eastside pine, bitterbrush, big sagebrush, and pine-juniper woodland. There are several large, scenic meadows.

Scenic variety in the area falls into class A, 67 percent; class B, 33 percent. The foothills of the Sierra Crest, Williams Butte, the lower slopes of Lee Vining Canyon are scenic landmarks from Highways 395 and 120. There are several large, scenic meadows and aspen stands within the area; fall colors are outstanding. The surrounding area is also scenic. Mono Lake and the Mono Craters are seen to the east; Bloody Canyon and the dramatic peaks of the Sierra Crest rise steeply to the west.

Current uses include recreation and sheep grazing.

B. CAPABILITY

The natural ecological integrity and natural appearance of the area have been influenced to a moderate degree. Impacts include a buried penstock associated with hydroelectric generation on Lee Vining Creek, a small water transportation ditch, sheep grazing scattered through the area, and a few unimproved roads.

Opportunities for solitude are moderate to low. The area is fairly large, and screening is moderate to high. There are, however, intrusions from surrounding highways and scattered developments; one protruding finger of the area lies within a mile of Highway 395.

Opportunities for primitive recreation are low. There is little challenge or diversity.

The area would not be manageable as wilderness. Although some impacts could be excluded by major boundary adjustments, the natural integrity and appearance of the remaining area would not be significantly improved. The ease of access from roads near and parallel to the boundary would make wilderness permit administration quite difficult.

C. AVAILABILITY

The Horse Meadow area represents several trade-offs between wilderness designation and other resources or uses. In particular, wilderness management would eliminate the dispersed motorized recreation that now occurs in the area, and would complicate interaction between National Forest management and the owners of adjoining private lands.

Dispersed nonmotorized recreation amounts to 400 RVDs; motorized recreation,

200 RVDs; big game hunting, 200 WFUDs, and fishing 100 WFUDs.

Approximately 540 acres are suitable for wildlife habitat manipulation.

The majority of water from the area is channeled under Deadman Summit into the Owens River, used to generate hydroelectric power, and exported for domestic use. The remainder is used locally for domestic and livestock needs, or flows into Mono Lake for wildlife needs.

Grazing accounts for 2,000 AUMs of use per year; maximum potential is estimated at 2,150 AUMs. Range improvements are valued at $6,000.

The area contains no land suitable for commercial timber management.

Of the lands in this area, 29 percent are rated medium in mineral potential;

71 percent are rated low. There are no active mining claims.

Special uses include water gauging devices and an associated access road.

D. NEED

The area belongs to the southern Sierra Nevada physiographic province; current use of wildernesses in that province is extremely heavy. The area is somewhat typical of the province, but is lower in elevation and more arid than the most popular wildernesses. This area adjoins the existing Ansel Adams wilderness and is near the Tioga Lake and Log Cabin-Saddlebag further planning areas.

Public involvement for the RARE II study indicated local interest in maintaining this area as nonwilderness. The area receives heavy recreation use, much of which is vehicle-based. The economy of the June Lake Loop depends on revenue related to that recreation. Due to the amount of adjoining private land and the number of unimproved roads, local people do not see wilderness values in the area. Local Indians use the area for pine nut gathering.

E. ENVIRONMENTAL CONSEQUENCES

Table C-11 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-12.

Table C-11
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Horse Meadow (5049)

	Alternatives						
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness					5.6 100%		5.6 100%
11. Range		5.6 100%	5.6 100%				
17. Semi-Primitive Rec	5.6 100%			5.6 100%		5.6 100%	

Designation: Wilderness
Prescription #: 2
Alternative(s): AMN, AMC
Effects on the Area: Where they exist, the wilderness attributes of natural appearance and integrity would be maintained. Opportunities for finding solitude would increase upon eliminating vehicle use. However, it would be difficult to avoid the evidence of human influence in much of the area. It would be difficult and costly to manage the area as wilderness, since the terrain does not readily restrict vehicle access at many locations.

Existing motorized recreation use would be lost. The primitive recreation that would displace the motorized recreation would occur at a relatively low intensity compared with that found in the adjacent Ansel Adams wilderness.

The valuable visual quality of this area as viewed from local scenic highways and the Mono Basin National Forest Scenic Area would receive maximum protection.

Options to manipulate vegetation for wildlife habitat improvement would be foregone.

Grazing would be maintained. However, activities associated with the grazing of the area would be considerably more restricted, and ultimately, more costly.

The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

Conflicts would be likely between the management of this area and that of adjoining private lands would be evident.

Grazing is the only economic dependency on the area. Recreation use generates the greatest revenue associated with the area. While the type of use would change, the amount of use would remain fairly constant. Therefore, economic changes would be minor. Costs for developing trails and a trailhead would result. The greatest social benefit would be a formal wilderness designation.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or major resource trade-offs would result.

Designation: Nonwilderness
Prescription #: 17
Alternative(s): PRF, AMB, CEE
Effects on the Area: Wilderness attributes would be little affected by application of this prescription, as vehicle access would be limited to existing routes. The present recreation use would be maintained.

Visual resources would be protected to a high degree by application of visual quality objectives and limitations on the proliferation of roads. Wildlife would also benefit from limitations on increased access.

Options to manipulate vegetation for wildlife habitat or livestock would remain available; under this prescription, increased forage would probably go to wildlife.

The area would remain open to new mining claims; any new mining roads would be closed to public use.

Activities occurring on adjacent private lands, and under special use permit on National Forest Lands, would generally not be in conflict with the overall management objectives of the area.

Social and economic consequences would be few. The greatest social cost would be a loss of potential wilderness designation. Grazing and recreation activities would continue with opportunities for some further development.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other known environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 11
Alternative(s): RPA, CUR
Effects on the Area: The effects of this prescription would be similar to those of Prescription 17 discussed above. The primary difference would be a subtle change of emphasis from dispersed recreation and wildlife to domestic

livestock grazing. Any vegetation treatment would probably be undertaken to benefit livestock rather than deer. Although road construction would be allowed, it is unlikely that any new roads would be developed for purposes of grazing administration. If any roads were constructed, they could be open for public use.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions. (All wildfires would be controlled under the CUR alternative.)

Table C-12
Average Annual Outputs for Decades 1 and 5
Horse Meadow (5049)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0	0	0	0	5.6	0	5.6
Nonwilderness (M acres)	--	5.6	5.6	5.6	5.6	0	5.6	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	600	600	600	600	0	600	0
	5	900	900	900	900	0	900	0
Wilderness Recreation (RVDs)	1	0	0	0	0	700	0	700
	5	0	0	0	0	800	0	800
Total Wildlife and Fish User Days (WFUDs)	1	300	300	300	300	300	300	300
	5	450	450	450	450	450	450	450
Grazing (AUMs)	1	2030	2030	2030	2030	2000	2030	2000
	5	2150	2150	2150	2150	2000	2150	2000
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	42	42	42	42	39	42	39
	5	56	56	56	56	47	56	47
Costs (M$)	1	20	20	20	20	27	20	27
	5	28	28	28	28	23	28	23
Net Benefits (M$)	1	22	22	22	22	12	22	12
	5	28	28	28	28	24	28	24

TIOGA LAKE (#5050) **Acres: 920**

A. DESCRIPTION

The Tioga Lake area lies in Mono County on the Mono Lake Ranger District. The Tioga Pass Road leads to within 0.1 mile of the boundary. An unimproved trail leads across the area into the wilderness.

The boundary is defined by the Tioga Pass Road on the north and west, the Minarets Wilderness on the east, and the Forest boundary on the south. Adjoining lands are administered by the National Park Service.

The area lies on the east side of the Sierra Nevada in the Mono Lake watershed. It is roughly rectangular, 2 miles long by 1 mile wide. Elevations range from 9,500 to 11,360 feet.

Most of the terrain is very steep, as the area lies on the upper wall of Lee Vining Canyon. There are a few small benches, and gentle meadowy slopes. The exposed rock is metavolcanic and metasedimentary. The canyon has been glacially scoured, and the area lies at the mouth of a hanging valley cut off by a glacier. Flowing across the area are 1.5 miles of stream, but no fisheries; there are a few small tarns in the southwest corner.

The primary vegetation type is lodgepole pine forest. Subalpine fir forest, alpine shrub, and barren areas are also present.

The entire area falls into variety class A. The canyon wall and hanging valley are scenic landmarks from the Tioga Pass Road. The surrounding area is extremely scenic, with Mt. Dana and the Dana Plateau above, Lee Vining Canyon below, and Mono Lake in the distance.

The only current use is recreation.

B. CAPABILITY

The natural ecological integrity of the area is essentially unmodified; its natural appearance has been altered to a very low degree. A powerline that crosses the area is buried, but the scar of vegetation removal remains; an unmaintained trail is the only other sign of human disturbance.

Opportunities for solitude are moderate. The area is large in combination with adjoining wilderness and National Park backcountry, and there is good vegetative screening. Topographic screening, however, is poor and there are many visual intrusions from developments and activities along the Tioga Pass Road.

Opportunities for primitive recreation are high. Size and the absence of facilities enhance these opportunities and there are some challenges.

The existing boundary would be manageable as wilderness; the only impact is a pipeline which would not be easy to separate by a boundary adjustment.

C. AVAILABILITY

The Tioga Lake area represents no major trade-offs between wilderness designation and other resources and uses.

Recreation includes dispersed nonmotorized recreation (200 RVDs) and big game hunting (200 WFUDs).

Water from the area flows into Lee Vining Creek, where it is used for power generation. Most of this water is then channeled into the Owens River and exported for domestic use; the remainder is used locally for irrigation, mining, or livestock watering or released into Mono Lake for wildlife.

The area is incapable of commercial timber production.

Of the lands in this area, all are rated low in mineral potential. There are two active mining claims for molybdenum and tungsten in the area, of which neither is producing. Samples show low value for those minerals and a low level of potential for other valuable minerals. A mineral entry withdrawal covers 100 acres.

D. NEED

The area belongs to the southern Sierra Nevada physiographic province; current use of wildernesses in that province is extremely heavy. The area is typical of the province. This area adjoins the existing Ansel Adams wilderness and is near the Hall and Log Cabin-Saddlebag further planning areas.

Public involvement for the RARE II study indicated little interest in the outcome of this area. Wilderness proponents did not identify it as a target area. Local residents see it as wilderness already.

E. ENVIRONMENTAL CONSEQUENCES

Table C-13 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-14.

Table C-13
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Tioga Lake (5050)

	Alternatives						
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness	0.9			0.9	0.9	0.9	0.9
	100%			100%	100%	100%	100%
17. Semi-Primitive Rec		0.9	0.9				
		100%	100%				

Designation: Wilderness
Prescription #: 2
Alternative(s): PRF, CEE, AMN, AMB, AMC
Effects on the Area: Wilderness designation would maintain the wilderness attributes of the area. The type of use received would be similar to the contiguous Ansel Adams Wilderness and Yosemite National Park backcountry; the amount of use would be expected to increase under wilderness designation. The inventory boundary would not be difficult or costly to administer as wilderness.

Designation as wilderness would provide the highest degree of visual protection for this area as it would be viewed from the Tioga Pass Road (a scenic highway).

The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

There are no known direct social or economic dependencies on the area. A slight economic benefit would result from increased wilderness recreation. Social benefits would come from formal wilderness designation. Wilderness management of this area would complement that of the surrounding wilderness.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 17
Alternative(s): CUR, RPA
Effects on the Area: Wilderness values would be little affected as vehicle access would be limited, both by the management prescription and by the steep terrain. The only other potential impact on wilderness quality would be road access for mining purposes.

Dispersed recreation activities (hunting, hiking, ice-climbing and camping) would increase only slightly. Visual quality would remain high, to meet the retention VQO.

The area would remain open to new mining claims; only applicable mining restrictions would affect activities. New roads constructed for mining access would be closed to the public.

Economic and social benefits would not change. A social cost would be a loss of potential wilderness designation.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions. (All wildfires would be controlled under the CUR alternative.)

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Table C-14
Average Annual Outputs for Decades 1 and 5
Tioga Lake (5050)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0.9	0	0	0.9	0.9	0.9	0.9
Nonwilderness (M acres)	--	0	0.9	0.9	0	0	0	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	0	200	200	0	0	0	0
	5	0	300	300	0	0	0	0
Wilderness Recreation (RVDs)	1	620	0	0	620	620	620	620
	5	750	0	0	750	750	750	750
Total Wildlife and Fish User Days (WFUDs)	1	200	200	200	200	200	200	200
	5	300	300	300	300	300	300	300
Grazing (AUMs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	11	6	6	11	11	11	11
	5	16	9	9	16	16	16	16
Costs (M$)	1	7	3	3	7	7	7	7
	5	1	4	4	1	1	1	1
Net Benefits (M$)	1	4	3	3	4	4	4	4
	5	15	5	5	15	15	15	15

HALL NATURAL AREA (#5051) Acres: 5,029

A. DESCRIPTION

The Hall Natural area lies in Mono County on the Mono Lake Ranger District. The Tioga Pass and Saddlebag Lake Roads lead to and parallel the boundary. An improved road leads into the area to rustic facilities at the experiment station. There are no improved trails, but cross-country foot travel is easy.

The boundary is defined by the Tioga Pass Road on the south, the Hoover Wilderness on the north, the Saddlebag Lake Road on the east, and the Forest boundary on the west. Adjoining lands are administered by the National Park Service.

The area lies on the east side of the Sierra Nevada in the Mono Lake watershed. It is rectangular, 6 miles long by 2 miles wide. Elevations range from 9,600 feet to 12,590 feet at Mt. Conness.

Terrain is extremely rugged; slope varies from moderate to steep. There are many points of geologic interest. The eastern fourth of the area is metasedimentary; the western three-fourths, granitic. Cirques, U-shaped valleys, polish, and till are signs of recent glaciation. There are also several currently active glaciers in the area. There are 12 miles of perennial stream, of which 5 miles contain trout.

Primary vegetation types are lodgepole pine forest and alpine shrub, in roughly equal proportions. There are more than 500 species of flowering plants, and a grove of outstanding mountain hemlock specimens.

The entire area falls into variety class A. The surrounding area is also extremely scenic. The rugged granite peaks of the Yosemite National Park backcountry can be seen west from the ridge; Saddlebag Lake and the Twenty Lakes Basin are visible to the north, and Mt. Warren and Lee Vining Peak to the east.

The area is currently used primarily for scientific research, and secondarily for daytime recreation.

B. CAPABILITY

The natural ecological integrity of the area has been influenced to a very low degree; its natural appearance to a low degree. There is a cut-and-fill road and rustic facilities associated with an experiment station belonging to the Carnegie Insitution.

Opportunities for solitude are high. The area is large, especially in combination with adjoining wilderness and National Park backcountry. Topographic screening is excellent, though there is little vegetative screening; there are no visual intrusions.

Opportunities for primitive recreation are high. Challenge and diversity are limited only by existing management of the area, which precludes overnight use.

Special features include the essentially undisturbed alpine plant community, and a rare insect (Behr's sulfur butterfly). The Hall area has been heavily used for botanical research since the late 1920's. Dr. John C. Merriam wrote in 1932, "this natural area may be one of the most significant opportunities for certain aspects of scientific research in this country." R.V. Stuart, Chief of the Forest Service, proposed the area for management with a research emphasis in the same year with the following words: "There was complete agreement that the future value of the area for such [scientific] purposes undoubtedly transcended any other values or uses to which it might be dedicated."

The original inventory boundary would not be manageable as wilderness. Although adjustments could separate all impacts, even the revised boundary would not be definable on the ground.

C. AVAILABILITY

The Hall Natural area represents one potential trade-off between wilderness designation and other management opportunities. The majority of the roadless area is designated as a research natural area (RNA). The uses and management direction appropriate to an RNA may not always be compatible with those appropriate to wilderness.

Dispersed nonmotorized recreation amounts to 5,000 RVDs; fishing amounts to 1,100 WFUDs. There is a short interpretive trail to the Bennetville historic site.

Water from the area flows into Lee Vining Creek, where it is used to generate hydroelectric power. Much of the water is then exported for domestic use, while the remainder is used locally for domestic and livestock needs, or released into Mono Lake for wildlife.

Approximately 260 acres are suitable for wildlife habitat manipulation.

The Hall Research Natural Area includes 3,883 of the area's 5,209 acres.

The area is incapable of commercial timber production.

Of the lands in this area, 61 percent are rated medium in mineral potential; 30 percent are low. There are 10 active mining claims in the area, of which none are currently producing. Geologic features indicate subeconomic levels of gold and silver near the Great Sierra Mine. There is low to moderate potential for molybdenum and tungsten in the eastern part of the area. Outstanding reserved mineral rights cover 100 acres; 4,000 acres have been withdrawn from mineral entry.

Cultural resource values include signs of prehistoric occupancy and historic mining.

Research station facilities and access road are maintained under a cooperative agreement with the Carnegie Institution.

D. NEED

The area belongs to the southern Sierra Nevada physiographic province; current use of wildernesses in that province is extremely heavy. The area is typical of the province. This area adjoins the existing Hoover wilderness and Yosemite National Park backcountry; it is near the Tioga Lake and Log Cabin-Saddlebag further planning areas.

Public involvement for the RARE II study indicated no strong interest in the outcome for this area. However, Forest correspondence files indicate that in 1971 the Sierra Club raised the question of designating the area as wilderness. The Carnegie Institution has not expressed itself on the subject. Local people see this area as wilderness already.

E. ENVIRONMENTAL CONSEQUENCES

Table C-15 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-16.

Table C-15
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Hall Natural (5051)

	Alternatives						
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness				5.2	5.2		5.2
				100%	100%		100%
5. Research Natural Area	3.9	3.9	3.9			3.9	
	75%	75%	75%			75%	
17. Semi-Primitive Rec	1.3	1.3	1.3			1.3	
	25%	25%	25%			25%	

Designation: Wilderness
Prescription #: 2
Alternative(s): CEE, AMN, AMC
Effects on the Area: Wilderness designation would maintain the wilderness attributes of the area, a character similar to the contiguous wilderness area and Yosemite National Park. As the majority of the area would also be designated as a research natural area (RNA), management conflicts could easily develop. The purposes and uses of wilderness and RNAs are not entirely compatible. Overnight recreation use would continue to be prohibited, but day use would increase to approximately the same levels as neighboring wildernesses. Research activities would be more costly and restricted. The inventory boundary would be difficult and costly to administer as wilderness.

Use of the area would not change, except that recreation use of the 1,300 acres outside the RNA would increase to levels similar to those in adjacent

wildernesses. Many of the potential wilderness recreation opportunities within the RNA could not be fully realized.

Under wilderness designation, the Bennetville interpretive site would be eliminated, representing a lost opportunity to interpret cultural values.

The amount of fishing would not change markedly.

Most of the area is presently withdrawn from mineral entry. Upon designation, the remainder of the area would be withdrawn. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

Existing research facilities (a road and buildings) under a cooperative agreement with the Carnegie Institution would present a nonconforming use within wilderness. Unless specifically exempt by a congressional act, these facilities would be removed.

Only minor economic benefits would occur, as most of the potential to increase wilderness recreation would be lost due to the restriction on overnight camping within the RNA. The social benefit of wilderness designation would be gained. There would be increased costs associated with wilderness administration.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource tradeoffs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 5 and 17
Alternative(s): PRF, CUR, RPA, AMB
Effects on the Area: Wilderness values would be little affected, as the area would either remain within the RNA or be managed under limited vehicle access. The only activity that would be likely to affect this area would be mining.

Research activities would not be subject to conflicting management direction. Nonmotorized daytime recreation would not change from the current situation. The historical interpretation would continue, and options to actively manage cultural properties would remain available. While the visual resource would receive considerable protection, the potential for activities, such as mining, that could affect it would remain on the 1,300 acres outside the RNA.

The area outside the RNA would remain open to new mining claims; only applicable mining restrictions would affect activities. New mining roads would be closed to the public.

Economic and social benefits would not change. A social cost would be a loss of potential wilderness designation. A benefit would be the continued scientific emphasis within the Hall RNA.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions. (All wildfires would be controlled under the CUR alternative.)

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Table C-16
Average Annual Outputs for Decades 1 and 5
Hall Natural (5051)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0	0	0	5.2	5.2	0	5.2
Nonwilderness (M acres)	--	5.2	5.2	5.2	0	0	5.2	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	5000	5000	5000	0	0	5000	0
	5	7500	7500	7500	0	0	7500	0
Wilderness Recreation (RVDs)	1	0	0	0	7500	7500	0	7500
	5	0	0	0	10000	10000	0	10000
Total Wildlife and Fish User Days (WFUDs)	1	1100	1100	1100	1100	1100	1100	1100
	5	1650	1650	1650	1650	1650	1650	1650
Grazing (AUMs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	112	112	112	119	119	112	119
	5	169	169	169	173	173	169	173
Costs (M$)	1	25	25	25	26	26	25	26
	5	37	37	37	11	11	37	11
Net Benefits (M$)	1	87	87	87	93	93	87	93
	5	132	132	132	162	162	132	162

LOG CABIN-SADDLEBAG (#5052) Acres: 17,093

A. DESCRIPTION

The Log Cabin-Saddlebag area lies in Mono County on the Mono Lake Ranger District. Highway 395 and the Tioga Pass, Saddlebag Lake, and Lundy Lake Roads lead to and parallel the boundary. Two constructed trails and a few user trails lead into the area; a mining road intrudes to the center of the area.

The boundary is defined by the Tioga Pass Road on the south, the Hoover Wilderness on the west, the Lundy Lake Road on the north, and Highway 395 on the east.

The area lies on the east side of the Sierra Nevada, in the Mono Lake watershed. It is irregular in shape, approximately 7 miles long and ranging from 0.25 to 4 miles wide. Elevations range from 6,640 feet to 12,327 feet at Mt. Warren.

Terrain forms a steep-sided plateau consisting of glacially-scoured metasedimentary rock. There are nine miles of perennial stream, of which two miles contain trout, and one lake.

Primary vegetation types are lodgepole pine forest, subalpine fir forest, mountain mahogany, low sagebrush, and barren areas.

Scenic variety in the area falls into class A, 93 percent; class B, 7 percent. Mono Dome, Lee Vining Peak, Mt. Warren, and Tioga Peak are all scenic landmarks from Highway 395 and the Tioga Road. The surrounding area is also extremely scenic. Lee Vining Canyon and the peaks of the Sierra crest can be seen to the east and south; Lundy Canyon, Lundy Lake, and the Mono-Walker divide to the north; Mono Lake and the Mono Craters to the east; and the White and Sweetwater Mountains on the eastern horizon.

Current uses include recreation and grazing.

B. CAPABILITY

The natural ecological integrity of the area has been influenced to a low degree; its natural appearance to a moderate degree. Impacts include an underground water tank, a 6-inch pipeline, an abandoned telegraph line, inactive mining sites including tailings and diggings, sheep grazing on meadows in the center of the area, and many unimproved roads near the eastern boundary.

Opportunities for solitude are high. The area is large, especially in combination with adjoining wilderness and National Park backcountry. Screening and visual intrusions are moderate.

Opportunities for primitive recreation are moderate. The area is large, especially in combination with adjoining wilderness. There is a moderate amount of diversity and challenge.

The original inventory boundary would be manageable as wilderness only with major adjustments. Adjustments could exclude impacts along the eastern and western edges. Approximately 3,000 acres would be lost, and most unimproved roads would be eliminated. Only mining impacts, grazing, and a waterline would remain.

C. AVAILABILITY

The Log Cabin-Saddlebag area represents a few trade-offs between wilderness designation and other resources and activities. If the boundary were not adjusted, the potential for four-wheel drive recreation on the area's unimproved roads would be foregone. Some aspects of Scenic Area management could conflict with wilderness management, but the details of the latter have yet to be developed.

Dispersed nonmotorized recreation presently accounts for 400 RVDs; fishing, 200 WFUDs.

The eastern-most 4,806 acres of the area lie within the Mono Basin National Forest Scenic Area, designated by Congress in 1984. The Scenic Area was designated with the intention of emphasizing public enjoyment and interpretation of the outstanding scenic and scientific values of the Mono Basin.

Peregrine falcons have been introduced, and California bighorn sheep have been proposed for introduction into Lee Vining Canyon; both species are likely to range into the area. Approximately 50 acres are suitable for wildlife habitat manipulation.

Most of the water from the area is used locally for mining, irrigation, livestock, or domestic needs, then flows into Mono Lake. Some is diverted into the Owens River and exported for hydroelectric power generation and domestic use.

Grazing represents 800 AUMs of use per year; maximum potential is estimated at 985 AUMs.

The area contains no land suitable for commercial timber management.

Of the lands in this area not already withdrawn 3 percent are rated high in mineral potential; 31 percent are medium, and 56 percent are low. More than 100 claims were recorded for the entire area between 1895 and 1915; of these, 7 claims are now active, but none are producing. Moderate levels of gold and silver are known in the area of the Klondike, North Log Cabin, and Centipede Prospects and the Log Cabin and Lakeview Mines on the east side of the area and the Saddlebag Lake Prospect and Australian claim on the west. There is high potential for additional reserves near known deposits. There are also minor amounts of tungsten, copper, lead, and zinc. A mineral entry withdrawal covers 4,900 acres.

Cultural resource values include signs of prehistoric occupancy and historic mining.

D. NEED

The area belongs to the southern Sierra Nevada physiographic province; current use of wildernesses in that province is extremely heavy. The area is typical of the province. This area adjoins the existing Hoover wilderness and is near the Hall Natural and Tioga Lake further planning areas.

Public involvement for the RARE II study indicated some local concern that the roadless area boundary came too close to the town of Lee Vining. There was also local concern that wilderness designation might restrict the potential for mining development in the area.

E. ENVIRONMENTAL CONSEQUENCES

Table C-17 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-18.

Table C-17
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Log Cabin-Saddlebag (5052)

				Alternatives			
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness				17.1 100%	17.1 100%	17.1 100%	17.1 100%
3. Mountain Sheep Habitat	3.0 18%						
6. Mono Basin NF Scenic Area*	4.8 28%	4.8 28%	4.8 28%	(4.8)	(4.8)	(4.8)	(4.8)
11. Range		4.3 25%	4.3 25%				
17. Semi-Primitive Rec	9.3 54%	8.0 47%	8.0 47%				

* Acres in parentheses indicate dual designation: Wilderness and MBNFSA.

Designation: Wilderness
Prescription #: 2
Alternative(s): CEE, AMN, AMB, AMC
Effects on the Area: Wilderness designation would enhance the wilderness attributes of the area. The natural integrity, appearance and opportunities for finding solitude would be improved with the exclusion of vehicles, roads, and various minor improvements. The type of use received would be similar to that in the contiguous Hoover Wilderness. The inventory boundary would be difficult and costly to administer as wilderness along the eastern edge, where there are many roads and influences of the town of Lee Vining.

Motorized recreation would be eliminated. The amount of recreation use would increase moderately under wilderness designation. The wilderness experience would be somewhat compromised by unnatural visual detractions associated with grazing, mining, old roads and off-site developments.

The level of grazing would remain constant. Opportunities to manipulate the vegetation or construct improvements would be foregone. Motorized equipment could not be used to facilitate use of the allotment.

The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

Economic dependencies on the area include grazing, mining, and recreation (primarily vehicle-based). These activities would be adversely impacted by wilderness designation. The economic benefits associated with more primitive recreation would not outweigh the losses of existing economic benefits. The greatest social benefit would be formal wilderness designation. Administrative costs of managing the area would increase. There would also be costs associated with developing needed trails and a trailhead.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions except within Prescription 6.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 3, 6, 17
Alternative(s): PRF
Effects on the Area: Wilderness attributes would be essentially maintained for most of the area. Approximately 18 percent of the area, primarily the slopes within Lee Vining Canyon, would be managed to provide high quality bighorn sheep habitat. Another 54 percent of the area would be managed under limited vehicle access. Twenty-eight percent would be managed for scenic and interpretive values as part of the Scenic Area.

This combination of management prescriptions would provide considerable protection for the natural integrity and appearance of the area. Recreation use would be little affected; however, more stringent vehicle access restrictions would be imposed to protect the scenic resource and bighorn sheep habitat. Motorized recreation opportunities would be limited to existing routes. Opportunities for nonmotorized recreation would remain high.

Bighorn sheep habitat would receive maximum protection.

Domestic livestock grazing would probably be reduced in response to bighorn sheep habitat needs.

The area would remain open to new mining claims, except for the 4,900 acres now under mineral withdrawal. New roads constructed for mining access would be closed to the public.

Direct economic dependencies would be little affected. Opportunities to realize economic growth, however, would be limited for certain activities. A social implication would be the loss of potential wilderness designation.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions except within Prescription 6.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 6, 11, 17
Alternative(s): RPA, CUR
Effects on the Area: The effects would be similar to those for the combination of Prescriptions 3, 6, and 17 discussed above. The primary difference would be the lack of emphasis on bighorn sheep habitat; under this combination, bighorn sheep would probably not be reintroduced into Lee Vining Canyon; domestic livestock grazing would increase. The 25% of the area managed under Prescription 17 would be available for new public roads constructed for mining or range management purposes.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions except within Prescription 6. (All wildfires would be controlled under the CUR alternative.)

Table C-18
Average Annual Outputs for Decades 1 and 5
Log Cabin-Saddlebag (5052)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0	0	0	17.1	17.1	17.1	17.1
Nonwilderness (M acres)	--	17.1	17.1	17.1	0	0	0	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	400	400	400	0	0	0	0
	5	600	600	600	0	0	0	0
Wilderness Recreation (RVDs)	1	0	0	0	800	800	800	800
	5	0	0	0	1200	1200	1200	1200
Total Wildlife and Fish User Days (WFUDs)	1	200	200	200	200	200	200	200
	5	300	300	300	300	300	300	300
Grazing (AUMs)	1	800	840	840	800	800	800	800
	5	600	985	985	800	800	800	800
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	20	21	21	25	25	25	25
	5	20	23	23	32	32	32	32
Costs (M$)	1	9	9	9	23	23	23	23
	5	9	9	10	18	18	18	18
Net Benefits (M$)	1	11	12	12	2	2	2	2
	5	11	14	14	14	14	14	14

BENTON RANGE (#5056) Acres: 10,451 (+4,052 BLM)

A. DESCRIPTION

The Benton Range roadless area lies in Mono County on the Mono Lake and the White Mountain Ranger Districts. Two adjoining parcels comprise BLM wilderness study area (WSA) No. CA-010-077. The Inyo National Forest has the lead role in joint study of the National Forest and BLM roadless lands in this area. Maintained roads lead to and parallel the boundaries of the lands being studied.

The further planning area boundary is defined on the west by the road between Chidago Flat and Watterson Meadow, on the south by the Red Rock Canyon Road, and on the north and east by the Forest boundary. The adjoining BLM WSA parcels are adjacent to the northern and eastern edges of the further planning area.

The entire area lies in the Benton Range, in the North Owens River and Hammil Valley watersheds. It is roughly rectangular, measuring 9.5 miles long by an average of 4.5 miles wide. Elevations range from 5,800 to 8,252 feet.

Most of the terrain is steep and rugged, with some gentler slopes and flats on the northern end. Rock is volcanic and granitic, with a ridge of eroded granitic domes along the northeastern boundary. There are no perennial streams or lakes.

The predominant vegetation type is pine-juniper woodland.

Scenic variety in the area falls into class A, 4 percent; class B, 94 percent; class C, 2 percent. The immediate surroundings, including the BLM land, are similar in appearance to the area itself. The White and Glass Mountains are visible from high points in the area.

Current uses include woodcutting, recreation, prospecting, and grazing.

B. CAPABILITY

The natural ecological integrity and natural appearance of the area have been influenced to a low degree. There are small and scattered mineral developments, scattered grazing, and a short, narrow mining road.

Opportunities for solitude are moderate to low. Although there is the some topographic and vegetative screening, the area is small, even in combination with the BLM land. Buildings and roads in the Hammil Valley, though distant, are visible.

Opportunities for primitive recreation are low. There is very little challenge or diversity; there is no reliable surface water.

The inventory boundary would be manageable as wilderness only with major boundary adjustments to exclude a mining road and the lower elevations of the BLM land. A revised boundary could be manageable, as topography would prevent vehicle access.

C. AVAILABILITY

The Benton Range area and the adjoining BLM WSA represent some trade-offs between wilderness designation and other activities. The small amount of vehicle-based recreation and public wood cutting would be excluded by wilderness management, mineral exploration and development would be restricted, and the option of increasing grazing would be precluded.

Dispersed nonmotorized recreation on National Forest land accounts for 100 RVDs; motorized recreation, 200 RVDs and big game hunting, 300 WFUDS; use on BLM land is estimated at 30 RVDs and 30 WFUDs.

Cattle grazing on NF land accounts for 1,130 AUMs per year; maximum potential is estimated at 1,300 AUMs; the BLM parcels support 118 AUMs, with no potential for increase.

The area is incapable of producing commercial timber.

Of the National Forest and BLM lands making up this area, 65 percent are rated high in mineral potential; 7 percent are medium, and 28 percent are low. Since 1865, at least 685 unpatented claims have been filed on lands within this area; of these, 28 were current in 1980. Subeconomic levels of gold and silver have been identified. There is potential for tungsten outside, and perhaps extending into the area. None of the mines are currently in production.

Cultural resource values include some prehistoric features.

D. NEED

There appears to be little wilderness-type recreation use in the Basin and Range physiographic province. The Benton Range area is typical of the province. There are no neighboring wildernesses or further planning areas.

Public involvement for the RARE II study indicated little interest in the area by wilderness proponents. The residents of the Benton community strongly oppose wilderness designation for any neighboring National Forest lands.

E. ENVIRONMENTAL CONSEQUENCES

Table C-19 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-20.

Table C-19
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Benton Range (5056)

	Alternatives						
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness							10.5 *(4.1) *100%
4. Mule Deer Habitat	9.0 86%			9.0 86%	9.0 86%	9.0 86%	
11. Range	1.5 14%	10.5 100%	10.5 100%	1.5 14%	1.5 14%	1.5 14%	

*BLM acres are in parentheses; percentage figure applies to total acres--National Forest and BLM taken together.

THE FOLLOWING NARRATIVES ADDRESS BOTH NATIONAL FOREST AND BLM LANDS

Designation: Wilderness
Prescription #: 2
Alternative(s): AMC
Effects on the Area: Wilderness attributes would be retained or even improved, as any activities affecting those attributes would be prohibited. The area represents an ecological type not yet represented in wilderness on the Forest. Administration of the area as wilderness would be difficult without a major boundary adjustment, as the terrain does not present a natural barrier to vehicles at many locations.

The character of recreation use would change dramatically. Traditional motorized recreation would be prohibited, and various 4-wheel drive vehicle routes would be closed. Big-game hunting would be restricted to foot travel. Recreation use would decrease, as few people would find the area attractive for a wilderness experience. The small size of the area, the lack of water, and the lack of challenge would maintain use at a low level.

Since considerable impacts on cultural resources have already resulted from artifact-hunters accessing the area with 4-wheel drive vehicles, closing the area to all motorized use would add protection for those values.

Some mule deer winter range would be affected, as the option of manipulating wildlife habitat would be foregone.

Cattle grazing would remain unchanged, though any opportunities to manipulate the range for increased forage production would be foregone.

Fuelwood gathering would be prohibited.

The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

There would be an overall loss of potential revenue from the area, as cattle grazing, motorized vehicle use, and new mining claims would be eliminated. A benefit would be a formal wilderness designation, adding small acreage in an underrepresented ecological type to the wilderness preservation system.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 4, 11
Alternative(s): PRF, AMN, AMB, CEE
Effects on the Area: Under the combination, wilderness values in the area would erode over time. Four-wheel drive and ORV recreation, range and wildlife habitat manipulation, and mining activities would incrementally degrade the area of its natural values. The acres under Prescription 11 (14 percent) would be the most affected.

Historical recreation uses (big-game hunting, four-wheel drive recreation, wood and pine-nut collecting) would be unchanged. On 86 percent of the area, new public roads would not be allowed and mining roads would be closed to public use; the remaining 14 percent would not be subject to that restriction.

Cultural resources would be exposed to continuing vandalism and theft.

On 86 percent of the area, cattle grazing would be held at current levels; any increase in forage would go to mule deer. Prescribed fire would be used to rejuvenate vegetation for deer. Big game hunting would be expected to increase with an increase in the mule deer population. On the remaining 14 percent of the area, cattle grazing would continue at current levels or increase; any vegetation treatment would.

The area would remain open to new mining claims; only applicable mining restrictions would affect activities.

Fuelwood gathering would continue where compatible with other resources.

Social and economic impacts would be represented by the lost opportunity to increase grazing on 80 percent of the area; increased hunting and associated benefits would offset that loss. Local residents favoring easy access and a nonwilderness designation would benefit. There would be a social cost of a loss of potential wilderness designation for an ecological type not yet represented on the Inyo National Forest.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 11
Alternative(s): CUR, RPA
Effects on the Area: The effects of this prescription would be similar to the effects of Prescription 4 with a few key exceptions. A primary range emphasis on the entire area would entail vegetation treatment to benefit livestock and an increase in animal numbers.

New road construction for range management would be allowed, and new mining roads could be open for public use. Improved access would result in overall increases in habitat disturbance for deer.

If access were improved, the use of the area for fuelwood gathering would increase, until and unless pinyon pine stands had been replaced by shrub and grass types.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions. (All wildfires would be controlled under the CUR alternative.)

Mining opportunities would be enhanced as access throughout the area would be increased. Any mining roads constructed in the area could remain open for public use.

Table C-20
Average Annual Outputs for Decades 1 and 5
Benton Range (5056)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0	0	0	0	0	0	10.5
Nonwilderness (M acres)	--	10.5	10.5	10.5	10.5	10.5	10.5	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	300	300	300	300	300	300	0
	5	450	450	450	450	450	450	0
Wilderness Recreation (RVDs)	1	0	0	0	0	0	0	150
	5	0	0	0	0	0	0	300
Total Wildlife and Fish User Days (WFUDs)	1	500	300	300	500	500	500	100
	5	750	450	450	750	750	750	150
Grazing (AUMs)	1	1165	1165	1165	1165	1130	1130	1130
	5	1300	1300	1300	1300	1130	1130	1130
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	39	38	38	39	39	39	6
	5	48	40	40	48	48	48	9
Costs (M$)	1	20	20	20	20	20	20	6
	5	22	18	18	22	22	22	4
Net Benefits (M$)	1	19	18	18	19	19	19	0
	5	26	22	22	26	26	26	5

WHITE MOUNTAINS (#5058 A&B) Acres: 251,868

A. DESCRIPTION

The White Mountains area lies in California's Inyo and Mono Counties, and Nevada's Mineral and Esmeralda Counties. This area has such a complex and potentially confusing history of names and numbers that it might be useful to summarize that history here.

The RARE II study identified subparts A and B, naming "A" White Mountains and "B" Pellesier-Bristlecone. Pellesier-Bristlecone represented the higher elevations of the area, constituting an island within the larger White Mountains area. Both subparts were placed in further planning by the RARE II Final EIS in January 1979.

The President, in his April 1979 wilderness recommendations to Congress, recommended most of 5058B and some of 5058A for wilderness. Since the boundary of the recommended wilderness differed from the RARE II boundaries, the subparts were now given different names and numbers: the recommended wilderness subpart was named Boundary Peak (5058W); the remainder was kept in further planning under the name White Mountains (5058F). Wilderness bills from 1980 to 1983 included 5058W as wilderness.

In March 1983 the Forest Service was directed to reevaluate all roadless areas as part of the Forest planning process, regardless of RARE II recommendations. The entire 5058 area was, therefore, included in the reevaluation. The interior boundaries between subparts were dissolved for analysis purposes.

The California Wilderness Act of 1984 listed White Mountains A and B (California only) for further planning; the Nevada portion of the area is still subject to the reevaluation process, as no wilderness legislation for Nevada has yet been passed. The following discussion deals with the entire White Mountains area; where one subpart is recommended for wilderness and another for nonwilderness, the boundary was drawn with concern for manageability and elimination of conflicts and does not coincide with any earlier subpart boundaries.

The White Mountains area is on the White Mountain Ranger District. The lower reaches of most of its many canyons are accessible by mining roads. Some jeep tracks lead further toward the interior. The southern half of the area is bisected by the White Mountain Road, which follows the crest of the range from Westgard Pass to White Mountain Peak. Cross-country access on foot from the White Mountain road is fairly easy. Access to the northern half of the area (north of White Mountain Peak) is quite difficult.

The boundary is defined on the north by the Forest boundary and the Queen Canyon-Trail Canyon road; on the south by the Silver Canyon and Crooked Creek roads; and on the east and west by the Forest boundary, except where mining road corridors intrude the area. Most of the adjoining land is administered by the BLM; some parcels are in private ownership.

The area lies in the White Mountains and in the watersheds of the Southeast and Northeast White Mountains; the Owens River; and the Chalfant, Hammil, Benton, Queen, Fish Creek, and Deep Springs Valleys.
The area is elongated, irregular in shape, and intruded by mining road corridors. It is 39 miles long and ranges in width from 7 to 18 miles. The wider southern half is bisected by the White Mountain Road corridor. Elevations range from 4,560 feet to 14,242 feet at White Mountain Peak.

Terrain consists mainly of extremely steep slopes dissected by steep, narrow canyons, leading to a narrow summit ridgeline. There is some rolling plateau on the crest, and a few small benches in the canyons. There are 128 miles of perennial stream, of which 38 miles contain trout, and many intermittent streams and springs, but no lakes. The rock is metasedimentary, much of it dolomite, with large granitic intrusions. Geologic points of interest include evidence of glaciation unusual for desert mountains, and the highest waterfalls in the desert ranges.

Primary vegetation types are pine-juniper woodland, alpine shrub, and big sagebrush.

Scenic variety in the area falls into class A, 62 percent; class B, 38 percent. The entire White Mountain range, most of which is in the roadless area, is a scenic landmark from Bishop, Highway 6, and Fish Lake Valley. White Mountain, Montgomery, and Boundary Peaks are identifiable features. The immediately surrounding area is somewhat less varied, composed primarily of arid desert valleys with little topographic relief. However, the middle and far distances provide spectacular views of the Glass Mountains, Benton Range, and Sierra Nevada on the west, and the desert ranges of Nevada on the east.

Other attractions include ancient bristlecone pines; Boundary Peak, which is the highest point in Nevada; wild horses, desert bighorn sheep, and beavers; and Pellisier Flat, which contains classic examples of active, polar-type frost features including large solifluction terraces.

Current uses include recreation, grazing, scientific research, and mineral exploration.

B. CAPABILITY

The natural ecological integrity of the area is essentially unmodified; its natural appearance has been influenced to a low degree. Impacts include scattered fences, trails, and mining sites (including structures, diggings, and machinery); widely scattered grazing; and unimproved roads. Impacts are localized, and the area is so large that most are easily absorbed.

Opportunities for solitude are high. The large size of the area offsets its low to moderate amount of screening and the visual intrusions of neighboring mines, roads, and the Barcroft Laboratory.

Opportunities for primitive recreation are moderate. Size, challenge, and diversity are the main contributors to this rating; there is, however, little water.

Special features include two species of sensitive plants (Arabis pinzlae and Hackelia brevicula), the threatened Paiute cutthroat trout, and extensive ecological and archaeological research.

The inventory boundary would be very difficult to manage as wilderness, due to the many intruding road corridors and vehicle routes. A manageable boundary could, however, be developed by managing only the steeper upper elevations as wilderness. This boundary is applied where part of the area is recommended for wilderness in the alternatives discussed below.

Eleven parcels of roadless BLM land, encompassing 5,419 acres, adjoin the area.

C. AVAILABILITY

The area represents some trade-offs between wilderness designation and other resources and activities. Wilderness management would restrict mineral exploration and development, small hydro development, vegetation manipulation to benefit range or wildlife, and (possibly) some kinds of scientific research that would conflict with wilderness values.

Dispersed nonmotorized recreation, accounts for 7,000 RVDs; big game hunting for 2,000 WFUDs.

Approximately 500 acres are suitable for wildlife habitat manipulation. The Cottonwood Creek basin is proposed for fish habitat enhancement (including spawning bed treatment and instream flow control structures) and expansion of the range for threatened Paiute cutthroat trout.

Water from the area is used for irrigation, domestic, and livestock needs in Hammil, Chalfant, Oasis, and Fish Lake Valleys. A small amount flows into the Owens River and is exported. Small hydroelectric projects have been proposed for Cottonwood, Lone Tree, Coldwater, Upper Piute, Pellisier and Rock Creeks along the area's western edge. There are presently two one-acre impoundments in the area.

Watershed restoration projects have been proposed for meadows on Chiatovich Flat and the drainage of Cottonwood Creek. Cost-effectiveness would require helicopter use and vehicle access over existing roads.

Cattle grazing represents 680 AUMs; maximum potential is estimated at 900 AUMs. Existing improvements are valued at $23,000.

Existing and proposed special areas within the roadless area boundary recognize points of ecological significance. The Ancient Bristlecone Pine Forest is a botanical special interest area which highlights the world's oldest living trees. The White Mountain Research Natural area (RNA) affords additional protection to a unique stand of bristlecone pines. The McAfee Meadow recommended RNA would represent the Great Basin alpine fellfield plant community. The entire White Mountain range has been nominated by the Department of Interior for listing as a national natural landmark (NNL).

The area is incapable of producing commercial timber.

Of the lands in this area, 8 percent are rated high in mineral potential; 27 percent are medium, and 65 percent are low. There are 133 active mining claims in the area, of which none are currently producing. Withdrawal from mineral entry affects 8,400 acres; outstanding reserved mineral rights, 400 acres.
There is a large number of prehistoric and historic cultural resource sites. Recent research into prehistoric high-elevation encampments has uncovered sites above 12,000 feet in the White Mountains, and prompted plans for additional research in the area. Historic sites include sheep and cattle camps, mines, a ranger station site, a powerline shack, and a toll road.

A power line in the area is operated under special-use permit; a helicopter test site is operated under a memorandum of understanding. Two mining access roads have been permitted, but not yet constructed. There is one included patented mining claim which is not currently active but has many signs of past disturbance.

D. NEED

There appears to be little wilderness-type recreation use in the Basin and Range physiographic province. The White Mountains area differs from many areas in that province by having outstanding scenic attractions and recreational challenges. However, lack of water and difficulty of access would probably limit the amount of use in this particular area. Neighboring further planning areas include Sugarloaf, Blanco Mountain, and Black Mountain.

Public involvement for the RARE II study indicated strong advocacy of wilderness in the White Mountains by State and national environmental groups They value the White and Inyo Mountains for unique plants, animals, and ecosystems and for the solitude they offer.

Local residents, in contrast, see the Whites as an escape area, and value their remoteness and lack of restrictions.

E. ENVIRONMENTAL CONSEQUENCES

Table C-21 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-22.

Table C-21
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
White Mountains (5058 A&B)

	Alternatives						
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness	120.0	53.2		251.9	251.9	53.2	251.9
	47%	21%		21%	100%	21%	100%
3. Mountain Sheep Habitat	19.4	19.4				19.4	
	8%	8%				8%	
5. Research Natural Area*	4.6	4.6	4.6	(4.6)	(4.6)	4.6	(4.6)
	2%	2%	2%			2%	
7. Ancient Bristlecone	6.0	6.0	6.0	(6.0)	(6.0)	6.0	(6.0)
	3%	3%	3%			3%	
17. Semi-Primitive Rec	101.9	90.5	53.2			168.9	
	40%	36%	21%			66%	
18. Multiple Resource Area		78.2	188.0				
		30%	74%				

*Acres with dual designation (proposed wilderness and RNA, Scenic Area, etc.) are displayed in the acreage total for Prescription 2 and indicated in parentheses under the other applicable prescription.

Designation: Wilderness
Prescription#: 2
Alternative(s): CEE, AMN, AMC
Effects on the Area: Wilderness designation would maintain the exceptionally high quality wilderness attributes of the area. Within subparts of the area containing vehicle use and other signs of human influence, this prescription would actually enhance wilderness attributes, as vehicles and various conflicting uses would be prohibited. Management of the area as wilderness would be difficult in certain area subparts, as vehicle intrusion and various nonconforming uses would be difficult to eliminate. Certain existing and potential research activities could conflict with wilderness management. That part of the Ancient Bristlecone Pine Forest within the area would receive maximum protection, but visitors to that area would be subject to additional regulation associated with wilderness.

Vehicle-based recreation would be prohibited. Nonmotorized recreation would increase considerably wilderness designation. Opportunities for a high quality wilderness experience would be exceptional. One of the highest valued scenic mountain ranges in California would receive maximum visual protection.

Cultural resources in the area, known to be regionally significant, would receive maximum protection. Archaeological research would become slightly more costly, and perhaps limited.

Options to manipulate wildlife or fish habitat would be foregone. Bighorn sheep habitat would receive adequate protection, as wilderness management would acknowledge bighorn habitat needs. Proposed projects involving the expansion of Paiute cutthroat trout (a threatened species) range would

probably not be implemented. The presence and use of the area by wild horses would pose a conflict for wilderness management, as these animals are not native to the area.

The current light grazing would continue. However, use and management of the range resource would be more difficult and limited. Opportunities to increase outputs would be foregone.

Watershed restoration projects, if implemented, could not make use of motorized equipment. Small hydroelectric development opportunities would be foregone.

The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

Unique geological features would be protected from damage or destruction. Numerous nonconforming uses (power line, helicopter test site, mining access roads and sites, and a patented mining claim) would be difficult to manage and would detract from wilderness values if retained.

Wilderness designation would protect sensitive plant, wildlife, and fish species.

Mining, wildlife and fish, grazing, research, and water extracted from the area constitute the direct economic dependencies associated with the area. There would be increased costs associated with these activities and, in some cases, a reduction in development opportunities. This would be particularly true for mineral exploration and small hydroelectric development. Significant long-term economic benefits related to wilderness recreation would result. The greatest social implication would be the preservation of a unique and significant wilderness resource of national stature. Some adverse research consequences would be a social concern.

Necessary costs of implementation would be construction of approximately 40 miles of trails and 5 to 7 trailheads. Administrative costs would increase dramatically.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Wilderness (revised boundary)/nonwilderness
Prescription #: 2, 3, 5, 7, 17
Alternative(s): PRF, AMB
Effects on the Area: This combination of prescriptions includes both wilderness designation for the higher elevations (47 percent in the PRF and 21 percent in the AMB) of the area and an emphasis on amenity values on the remainder of the area. Wilderness attributes in the wilderness part of the area would receive maximum protection and enhancement, as described for the entire area under Prescription 2, above. The wilderness recommendation would encompass approximately 120,000 acres under the PRF Alternative and 53,200 acres under the AMB.

The wilderness boundary proposed under this combination would greatly improve the chances of eventual wilderness designation. The boundary would be manageable, as topography would reinforce statutory closures to prevent vehicle entry. The wilderness characteristics of the area proposed for wilderness are much higher, and primitive recreation opportunities greater in the area recommended for wilderness under this combination than in the remainder of the White Mountains area.

The revised area clearly separates the recommended wilderness from the majority of existing conflicting uses and potential development opportunities. The lands outside the recommended wilderness are rated higher in mineral potential than those inside. The two RNAs and the botanical area would lie outside the recommended wilderness, thus avoiding potential conflicts in management. The majority of watershed improvement needs and fish habitat expansion potential lie outside recommended wilderness. And, finally, all identified potential hydroelectric projects lie outside recommended wilderness.

Nonwilderness amenity values, such as scenic quality, fish and wildlife habitat management, scientific research, and dispersed recreation would be maintained at high levels on all nonwilderness lands; the wilderness attributes on those lands would also be expected to remain at high levels.

Watershed improvement projects could be accomplished using vehicle access and motorized equipment. Cultural resources would be protected to a moderate degree while opportunites for research and interpretation were retained.

Commodity production and off-road vehicle travel would be restricted under these prescriptions. There would be no open ORV areas; all vehicle travel would be restricted to existing routes. Mining roads in nonwilderness areas would be closed to public use. Grazing would continue at current low levels of intensity; although vehicles could be used for range management, the amount of vegetation treatment and structural improvement would be small.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

Wild horses would not represent a conflict.

Designation: Wilderness (revised boundary)/nonwilderness
Prescription #: 2, 3, 5, 7, 17, 18
Alternative(s): CUR
Effects on the Area: This combination of prescriptions would have virtually the same effects as those of the wilderness/nonwilderness combination discussed above. The difference is that the 30 percent of the area managed under Prescriptions 18 would be available for mining roads open to public use and for open ORV areas. On those lands, natural appearance and natural integrity would be expected to decline as access and vehicle use increased. Mining opportunities would be enhanced as access throughout the area improved. (All wildfires would be controlled under the CUR alternative.)

Designation: Nonwilderness
Prescription #: 5, 7, 17, 18
Alternative(s): RPA
Effects on the Area: Nonwilderness management could have negative long-term effects on the wilderness attributes of the area. Those effects would be greatest in the parts of the area with the lowest level of wilderness quality, i.e., lands below 9,000 to 10,000 feet elevation. On those lower slopes, vehicle use and other signs of human influence would continue and, probably, increase. Mineral exploration and development could have major impacts if the economic situation made currently uneconomic deposits valuable enough for extraction. The higher elevations would be subject to fewer impacts, primarily because vehicle access would be difficult-to-impossible and because of the lower level of estimated mineral potential associated with the geology of those areas.

Existing and potential research activities could take place with minimal restriction, but the natural features subject to scientific study could be damaged by increased impacts. That part of the Ancient Bristlecone Pine Forest within the area would receive the level of protection and type of use it currently receives.

Vehicle-based recreation would be confined to existing roads and trails, and no new public roads could be constructed under Prescriptions 5, 7, or 17. Open ORV areas could, however, be established, new roads could be constructed, and mining roads could be left open for public use on lands managed under Prescription 18. Primitive recreation would be confined to the higher elevations inaccessible by vehicle.

The scenic values of the mountain range would be most subject to impacts where Prescription 18 was applied; the major potential for visual impacts would be associated with mining.

Cultural resources in the area, known to be regionally significant, would receive moderate protection. Archaeological research would be less costly and limited than under wilderness designation.

Options to manipulate wildlife or fish habitat would be retained. Bighorn sheep habitat would be managed for population viability, but would not be emphasized. Proposed projects involving the expansion of Paiute cutthroat trout (a threatened species) range could be implemented. The presence and use of the area by wild horses would not represent a conflict.

Livestock grazing would increase where there was an opportunity to do so. Vegetation treatment and structural improvements would increase. Management of the range resource would be accomplished using traditional means, including unrestricted vehicle access.

Watershed restoration projects could be implemented with full use of motorized equipment and vehicle access. Small hydroelectric development opportunities would be retained.

Most of the area would remain open to new mining claims, subject only to applicable mining laws and regulations. The existing mineral withdrawal would continue to apply, and the recommended RNAs would be withdrawn from mineral entry; those withdrawals would, however, affect only five percent of the area. Mining opportunities would be enhanced on lands managed under Prescription 18, as access throughout the area would be increased. Under the other prescriptions, only mining roads would be constructed, and they would be closed to public use. While the extent of the mineral reserve is undetermined, the opportunities for mining could be significant in some parts of the area.

The numerous special uses (power line, helicopter test site, mining access roads and sites, and a patented mining claim) could continue.

Sensitive plants, wildlife, fish, and unique geologic features would have moderate to high levels of protection based on the Forest-wide standards and guidelines and the direction contained in Prescriptions 5, 7, and 17.

Mining, wildlife and fish, grazing, research, and motorized recreation constitute the direct economic dependencies associated with the area. Those activities and associated development opportunities would be retained. Long-term economic benefits related to wilderness recreation and the social benefits of wilderness designation would be foregone.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Table C-22
Average Annual Outputs for Decades 1 and 5
White Mountains (5058 A&B)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	120.6	53.2	0	251.9	251.9	53.2	251.9
Nonwilderness (M acres)	--	131.3	198.7	251.9	0	0	198.7	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	1000	1000	7000	0	0	1000	0
	5	1500	1500	10500	0	0	1500	0
Wilderness Recreation (RVDs)	1	8200	8200	0	16000	16000	8200	16000
	5	12710	12710	0	24800	24800	12710	24800
Total Wildlife and Fish User Days (WFUDs)	1	2000	2000	2000	2000	2000	2000	2000
	5	3000	3000	3000	3000	3000	3000	3000
Grazing (AUMs)	1	725	725	725	680	680	725	680
	5	900	900	900	680	680	900	680
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	233	233	302	279	279	233	279
	5	334	334	402	427	427	334	427
Costs (M$)	1	462	462	257	572	572	462	572
	5	174	174	142	294	294	174	294
Net Benefits (M$)	1	-229	-229	45	293	293	-229	-293
	5	160	160	260	133	133	160	133

BLANCO MOUNTAIN (#5059) Acres: 16,348 (100)

A. DESCRIPTION

The Blanco Mountain area lies in Mono and Inyo Counties, on the White Mountain Ranger District. Constructed dirt roads lead to and parallel the boundary; jeep trails and foot trails penetrate the area.

The boundary is defined by the Crooked Creek road on the north, the Wyman Canyon road on the south, the Dead Horse Meadow road on the east, and the Sage Hen Flat road on the west.

The area lies in the White Mountains, in the Deep Springs Valley and Northeast and Southeast White Mountains watersheds. It is rectangular, 7 miles long by 4 miles wide. Elevations range from 8,200 feet to 11,278 feet at Blanco Mountain.

Terrain is mostly rugged, with some gently sloping plateau. Canyons are deeply incised. There are 5 miles of perennial stream, of which 2 miles contain trout, and many intermittent streams, but no lakes. Most of the rock is metasedimentary, with some granite outcrops.

Primary vegetation types are big sagebrush and pine-juniper woodland. Smaller amounts of mountain mahogany and subalpine fir forest are also present. Other botanical attractions include the ancient bristlecone pine trees.

Scenic variety in the area falls into class A, 56 percent; class B, 44 percent. The surroundings are similar in appearance to the area itself; views from high points include the Sierra Nevada in the distance to the west, and rows of desert mountains to the east.

Current uses include grazing and recreation.

B. CAPABILITY

The natural ecological integrity of the area has been influenced to a very low degree; its natural appearance to a moderate degree. Impacts include a telephone line with associated service roads, a few fences, scattered grazing, vegetation manipulation, and some unimproved roads.

Opportunities for solitude are moderate. The area is small, and screening is low to moderate. Surrounding roads, Camp Bristlecone, and powerlines are somewhat intrusive.

Opportunities for primitive recreation are low. There is some diversity, but rare opportunities for challenge.

Special features include a sensitive plant species, Trifolium dedeckerae.

The original inventory boundary would not be manageable as wilderness. None of the impacts listed above would be separable by boundary adjustments, as they are scattered and penetrate to the interior of the area.

C. AVAILABILITY

The Blanco Mountain area represents some trade-offs between wilderness designation and other resources and activities. Wilderness management would exclude vehicle-based big game hunting, wildlife habitat or range improvements involving vegetation manipulation, and watershed restoration using earth-moving equipment.

The major recreational use of the area is big game hunting, which represents 600 WFUDs; other dispersed motorized recreation amounts to 400 RVDs.

Approximately 930 acres are suitable for wildlife habitat manipulation.

Water from the area is used locally for domestic needs, livestock, and agriculture in Deep Springs Valley.

Major watershed restoration projects have been proposed for meadows on the Cave
Fork and South Fork of Crooked Creek. Proposed methods, including the use of bulldozers, would not be compatible with wilderness management.

Cattle grazing amounts to 135 AUMs a year; maximum potential is estimated at 150 AUMs. Existing improvements are valued at $23,000.

The Ancient Bristlecone Pine Forest, a botanical special interest area, encompasses about one-third of the roadless area.

The area is incapable of producing commercial timber.

Of the lands in this area, 9 percent are rated high in mineral potential; 67 percent are medium, and 24 percent are low. There are 49 active mining claims in the area, of which none is currently producing. Lead, silver, and gold deposits are sparse and scattered. A mineral entry withdrawal affects 4,900 acres.

The included private land (100 acres) is undeveloped.

D. NEED

There appears to be little wilderness-type recreation use in the Basin and Range physiographic province. The Blanco Mountain area is typical of the province. This area is near the Birch Creek and White Mountains further planning areas.

Public involvement for the RARE II study indicates strong support for wilderness in the White and Inyo Mountains on the part of national, state, and local environmental organizations. This area was not singled out for specific treatment.

E. ENVIRONMENTAL CONSEQUENCES

Table C-23 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present

uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-24.

Table C-23
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Blanco Mountain (5059)

	Alternatives						
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness							16.3 100%
7. Ancient Bristlecone	7.3 45%	7.3 45%	7.3 45%	7.3 45%	7.3 45%	7.3 45%	(7.3)
17. Semi-Primitive Rec	9.0 55%				9.0 55%	9.0 55%	
18. Multiple Resource Area		9.0 55%	9.0 55%	9.0 55%			

*Acres with dual designation (proposed wilderness and RNA, Scenic Area, etc.) are displayed in the acreage total for Prescription 2 and indicated in parentheses under the other applicable prescription.

Designation: Wilderness
Prescription #: 2
Alternative(s): AMC
Effects on the Area: Wilderness designation would maintain, or even enhance, the present wilderness attributes of the area, as motorized vehicle use and various improvements would be eliminated. As the quality of the wilderness experience offered would be relatively low, recreation use would also remain low. Management of the area as wilderness would be difficult, considering the existing non-conforming uses and opportunity for illegal ORV use. The Ancient Bristlecone Pine Forest would receive maximum protection under wilderness designation, but public use of the area would be more restricted than at present. On-site interpretation of the area would not be appropriate.

The natural appearance of the area would improve, as 4-wheel drive trails and other visual impacts would be eliminated to restore to a natural condition.

Opportunities to manipulate wildlife habitat would be foregone.

Cattle grazing would continue essentially unchanged, except that motorized vehicles could not be used to monitor cattle, nor would structural improvements be allowed. Maintenance of existing range improvements would be more difficult and costly. Opportunities to increase grazing outputs would be foregone.

Watershed restoration projects proposed for the area would be more costly without the option of using motorized equipment.

The part of the area not yet withdrawn from mineral entry would be withdrawn upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on existing valid claims could be restricted.

There would be a negligible economic effect. Mining and grazing activities would continue, but under more costly restrictions. The change in recreation use from motorized to nonmotorized would not contribute a noticeable economic change. However, a social cost would be the loss of more motorized recreation in the future. A social benefit of a formal wilderness designation would result. There would be no costs associated with constructing trails or trailheads, as there are not opportunities for those facilities. Administrative costs would be high due to the difficulty of managing the boundary.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 7, 17
Alternative(s): PRF, AMN, AMB
Effects on the Area: Wilderness attributes of the area would be essentially maintained. The Ancient Bristlecone Pine Forest would be managed in near-natural condition, while management of the remainder of the area would limit vehicle access and public road construction. Four-wheel drive recreation would be confined to existing roads and trails.

Recreation use would not be affected; the low level of historical use would continue. Motorized vehicle access would be similar to the existing access situation.

Opportunities would exist to implement wildlife habitat improvement projects. Grazing use and management would not change as opportunities to increase outputs are limited. Watershed improvement projects could be accomplished efficiently with motorized equipment.

The area outside the existing mineral withdrawal would remain open for new mineral claims. Mining claims would be affected only by applicable mining restrictions. New mining roads would be closed to public use.

The present socioeconomic situation would be maintained. The few grazing, wildlife, recreation, and mining benefits would be maintained with opportunities for some further development. A social cost would be the loss of potential wilderness designation.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 7 and 18
Alternative(s): CUR, RPA, CEE
Effects on the Area: For the Ancient Bristlecone Pine Forest, the consequences of applying this prescription would be the same as the previous nonwilderness combination, as the special management direction for that area would prevail. However, the remainder of the area would be managed to allow motor vehicles to travel anywhere, providing opportunities for challenge and freedom of movement. The wilderness attributes of natural appearance, integrity, and solitude could be significantly lost through the enhancement of ORV, grazing, wildlife, and mining opportunities.

Motorized recreation use would increase as the area became more accessible. Visual impacts would result from resource management activities, ORV use, and mining.

Vegetation treatments for wildlife habitat and livestock grazing would probably ocur.

Watershed restoration projects could be accomplished efficiently using motorized equipment.

Mining opportunities would be enhanced as access throughout the area would be increased.

Economic benefits would occur from increased motorized recreation, hunting, grazing, and mining opportunities. Economic costs would be those necessary to implement resource and use opportunities. A social consequence would be the loss of potential wilderness designation.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions. (All wildfires would be controlled under the CUR alternative.)

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Table C-24
Average Annual Outputs for Decades 1 and 5
Blanco Mountain (5059)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0	0	0				16.3
Nonwilderness (M acres)	--	16.3	16.3	16.3	16.3	16.3	16.3	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	200	300	300	300	200	200	0
	5	300	450	450	450	300	300	0
Wilderness Recreation (RVDs)	1	0	0	0	0	0	0	150
	5	0	0	0	0	0	0	233
Total Wildlife and Fish User Days (WFUDs)	1	300	400	400	400	300	300	100
	5	450	600	600	600	450	450	150
Grazing (AUMs)	1	140	140	140	140	140	140	135
	5	150	150	150	150	150	150	135
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	19	25	25	25	19	19	9
	5	29	38	38	38	29	29	10
Costs (M$)	1	9	11	11	11	9	9	5
	5	16	19	19	19	16	16	4
Net Benefits (M$)	1	10	14	14	14	10	10	4
	5	13	19	19	19	13	13	6

BIRCH CREEK (#5060) Acres: 32,705 (600)

A. DESCRIPTION

The Birch Creek area lies in Inyo County on the White Mountain Ranger District. Constructed dirt roads lead to and parallel the boundary; unimproved roads penetrate the area.

The boundary is defined by the Wyman Canyon road on the north, the Forest boundary on the south and east, and the White Mountain Road and some if its side roads on the west. Adjoining lands are administered by the BLM.

The area lies in the White Mountains in the Deep Springs Valley, North Owens River, and Southeast White Mountains watersheds. It is roughly triangular, 9 miles long by 2 to 9 miles wide; two road corridors deeply intrude the area.

Terrain is rugged and slopes steep, with some rolling, high plateau. The steep canyons channel intermittent streams; there are 2 miles of perennial stream, but no fisheries, and no lakes. Rock is mostly metasedimentary, with granite outcrops.

The primary vegetation type is pine-juniper woodland, with smaller amounts of big sagebrush, saltbush-greasewood, mountain mahogany, and subalpine fir forest. Another botanical attraction is the Methuseleh Tree, a bristlecone pine that is the world's oldest known living thing.

Scenic variety in the area falls into class A, 23 percent; class B, 77 percent. The surroundings are similar in appearance to the area itself. Views from high points include the desert ranges to the east and the Sierra Nevada far to the west.

Current uses include cattle grazing and recreation.

B. CAPABILITY

The natural ecological integrity and natural appearance of the area have been influenced to a very low degree. There are many small mining prospects with localized impacts, scattered grazing, a trail, and a few unimproved roads.

Opportunities for solitude are moderate. Size and screening are moderate, and there are no visual intrusions.

Opportunities for primitive recreation are low, as there is little diversity or challenge.

Special features include the research in dendrochronology and species ecology associated with the Schulman Grove of bristlecone pines.

The original inventory boundary would not be manageable as wilderness; the impacts are widely scattered and could not be separated by boundary adjustments.

One parcel of roadless BLM land, encompassing 851 acres, adjoins the area.

C. AVAILABILITY

The Birch Creek area represents few trade-offs between wilderness designation and other resources and activities. Wilderness management would exclude vehicle access for big game hunters and prospectors, preclude vegetation manipulation to benefit wildlife or range, and restrict mineral exploration and development.

Big game hunting amounts to 200 WFUDs of recreation use a year; dispersed motorized recreation, 100 RVDs.

Approximately 70 acres are suitable for wildlife habitat manipulation.

Water in the area is used locally for livestock.

Cattle grazing represents 115 AUMs; maximum potential is estimated at 160 AUMs. Existing improvements are valued at $3,000.

The Ancient Bristlecone Pine Forest, a botanical special interest area, includes about one-fifth of the area.

The area is incapable of producing commercial timber.

Of the lands in this area, 44 percent are rated high in mineral potential; 39 percent are medium, and 17 percent are low. There are 245 active mining claims in the area, of which none is currently producing. Subeconomic deposits of silver, lead, zinc, and gold are inferred to contain 31,000 tons. There is moderate to high potential that more will be found. Withdrawal from mineral entry affects 5,900 acres.

Cultural resource values include signs of prehistoric occupancy and historic mining.

The 600 acres of included private and County land is undeveloped.

D. NEED

There appears to be little wilderness-type recreation use in the Basin and Range physiographic province. The Birch Creek area is typical of the province. This area is near the Blanco Mountain and Black Canyon further planning areas.

Public involvement for the RARE II study indicate that wilderness proponents strongly favor wilderness designation for all of the White and Inyo Mountains. The Birch Creek area has not been singled out for special treatment.

Local people in general prefer nonwilderness management for remaining roadless areas. Local Paiute Indians collect pine nuts in the area.

E. ENVIRONMENTAL CONSEQUENCES

Table C-25 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table

discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-26.

Table C-25
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Birch Creek (5060)

	Alternatives						
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness							32.7 100%
7. Ancient Bristlecone Pine Forest*	9.1 28%	9.1 28%	9.1 28%	9.1 28%	9.1 28%	9.1 28%	(9.1)
17. Semi-Primitive Rec	23.6 72%				23.6 72%	23.6 72%	
18. Multiple Resource Area		23.6 72%	23.6 72%	23.6 72%			

*Acres with dual designation (proposed wilderness and RNA, Scenic Area, etc.) are displayed in the acreage total for Prescription 2 and indicated in parentheses under the other applicable prescription.

Designation: Wilderness
Prescription #: 2
Alternative(s): AMC
Effects on the Area: Wilderness designation would maintain or enhance the wilderness attributes of the area, as motorized vehicle use would be prohibited. As the quality of the wilderness experience offered would be low use would also be low. Management of the area as wilderness would be difficult due to the various non-conforming uses. The Ancient Bristlecone Pine Forest would receive maximum protection under wilderness designation, but public use of the area would be more restricted than at present. On-site interpretation of the area would not be appropriate.

The natural appearance of the area would improve as 4-wheel drive trails and many other visual impacts would be eliminated or restored to a natural condition.

Wildlife habitat would not be manipulated; however, little opportunity for this activity is found in the area.

Grazing would not be affected, except that monitoring of livestock and structural or vegetative improvements would be more restricted. Opportunities to increase grazing outputs would be foregone.

The area not already withdrawn from mineral entry would be withdrawn upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

Socioeconomic effects would be few. Mining and grazing activities would continue, but under more costly restrictions. Recreation use, changing from motorized to nonmotorized would not produce a noticeable economic effect. However, a social cost would be the loss of motorized recreation opportunities. A social benefit would be a formal wilderness designation. A trailhead and approximately eight miles of new trail would be a cost of implementation.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 7 and 17
Alternative(s): PRF, AMN, AMB
Effects on the Area: Wilderness values would be essentially maintained. The Ancient Bristlecone Pine Forest would be managed in its near-natural condition with adequate protection. The remainder of the area would be managed to limit vehicle access and public road construction. Recreation use would continue at the present low level. Motorized recreation would be restricted to existing roads and trails. Natural appearance would be expected to change little from the present.

The options of making wildlife or range habitat improvements would be maintained; however the opportunities are limited. Only marginal outputs would be received from these investments. Grazing and hunting would increase slightly.

The entire area outside the existing mineral withdrawal would remain available for new mineral claims. Mining activities would be affected only by applicable mining restrictions. New mining roads would be closed to public use.

The current economic situation would be maintained. A social cost would be the loss of potential wilderness designation.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-off requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 7 and 18
Alternative(s): CUR, CEE, RPA
Effects on the Area: For the Ancient Bristlecone Pine Forest, the consequences of applying this prescription would be the same as for the nonwilderness combination described above, as the established special management direction for that area would prevail. The remainder of the roadless area would be managed to allow motor vehicle use with minimal restrictions, providing opportunities for challenge and freedom of movement. The wilderness attributes of natural appearance, integrity, and solitude

would be lost for much of the area if ORV use and mining activities increased in response to this lack of restriction. Motorized recreation use would increase if the area became more accessible.

Some wildlife and grazing enhancement opportunities would exist, but only minor benefits could be realized.

Economic benefits would occur from motorized recreation, hunting, grazing, and mining. Economic costs would be associated with implementing resource improvements. The loss of potential wilderness designation would be a social cost.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions. (All wildfires would be controlled under the CUR alternative.)

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Table C-26
Average Annual Outputs for Decades 1 and 5
Birch Creek (5060)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0	0	0	0	0	0	32.7
Nonwilderness (M acres)	--	32.7	32.7	32.7	32.7	32.7	32.7	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	600	600	600	600	400	400	0
	5	900	900	900	900	600	600	0
Wilderness Recreation (RVDs)	1	0	0	0	0	0	0	150
	5	0	0	0	0	0	0	200
Total Wildlife and Fish User Days (WFUDs)	1	800	800	800	800	600	600	150
	5	1200	1200	1200	1250	900	900	200
Grazing (AUMs)	1	120	120	120	120	120	120	115
	5	145	145	145	145	145	145	115
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	50	50	50	50	38	38	13
	5	76	76	76	76	58	58	19
Costs (M$)	1	22	22	22	22	18	18	26
	5	38	38	38	38	32	32	9
Net Benefits (M$)	1	28	28	28	28	20	20	-13
	5	36	36	36	36	26	26	10

BLACK CANYON (#5061) Acres: 34,804

A. DESCRIPTION

The Black Canyon area lies in Inyo County on the White Mountain Ranger District. State Route 168 (Westgard Pass), the Bristlecone Road, and several dirt roads lead to and parallel the boundary; some unimproved roads penetrate the area.

The boundary is defined by the Forest boundary on the west, the White Mountain Road and associated side roads on the east, Highway 168 on the south, and Silver Canyon Road on the north. Most of the adjoining land is administered by the BLM; some parcels are privately owned.

The area lies on west slope of the White Mountains in the North Owens River and Southeast White Mountains watersheds. It forms a rectangle with intruding road corridors, measuring 11.5 miles long by 6 miles wide. Elevations range from 4,200 to 10,454 feet.

Terrain is mostly steep, with some rolling high plateau. There are springs and intermittent streams; 2 miles of perennial stream, but no fisheries; and no lakes. Rock is metasedimentary with granite outcrops.

Primary vegetation types are pine-juniper woodland and big sagebrush. Saltbush-greasewood and shadscale scrub are also present in smaller amounts.

Scenic variety in the area falls into class A, 34 percent; class B, 66 percent. The west face of the White Mountains is a scenic landmark from Bishop, Big Pine, and Highway 395. The surroundings are also scenic; the open plateau country of the White Mountain crest lies to the east; the dramatic Owens Valley with its Sierra Nevada backdrop are seen to the west.

Current uses include recreation and woodcutting.

B. CAPABILITY

The natural ecological integrity and natural appearance of the area have been influenced to a very low degree. The unimproved road which leads up Black Canyon to Schulman Grove is the only impact.

Opportunities for solitude are moderate. The area is fairly large, and affords a moderate amount of screening. Visual intrusions from the Owens Valley and noise from ORV use in Poleta Canyon are only significant at lower elevations.

Opportunities for primitive recreation are low, as there is little diversity or challenge.

A sensitive plant species, Dedeckera eurekensis, grows on the area's western boundary.

The original inventory boundary would only be manageable as wilderness if the Black Canyon Road could be closed. That road bisects the area, and is therefore not separable by a boundary adjustment.

Three parcels of roadless BLM land, encompassing 6,518 acres, adjoin the area.

C. AVAILABILITY

The Black Canyon area represents two major trade-offs between wilderness designation and other activities. If the Black Canyon road were closed, the associated 4-wheel drive recreation would be lost, and under wilderness designation the area would be withdrawn from mineral entry.

Big game hunting accounts for 600 WFUDs of use a year; other motorized recreation amounts to 400 RVDs. The canyon has been used in recent years by hang gliders traveling to their take-off point.

The lower elevations fall into Tule elk range.

Approximately 60 acres are suitable for wildlife habitat manipulation.

The area is incapable of producing commercial timber, but there is some public wood gathering at the higher elevations.

Of the lands in this area, 20 percent are rated high in mineral potential; 68 percent are medium, and 12 percent are low. There are 15 active mining claims in the area, of which none are currently producing. Mineral resources include gold, silver, lead, zinc, and tungsten. Eight mines have produced ore. Two other properties have 40,000 tons of identified subeconomic gold and silver deposits. Five additional properties have gold, silver, and lead potential.

Cultural resource values include prehistoric features and signs of historic mining and woodcutting.

D. NEED

There appears to be little wilderness-type recreation use in the Basin and Range physiographic province. The Black Canyon area is typical of the province. This area is near the White Mountains, Blanco Mountain, and Birch Creek further planning areas.

Public involvement for the RARE II study indicated strong support on the part of wilderness proponents for wilderness in the White and Inyo Mountains; that interest was not focused on this area in particular.

Local people favor nonwilderness. Local Paiute Indians use the area for pine nut gathering.

E. ENVIRONMENTAL CONSEQUENCES

Table C-27 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities.

Resource and activity outputs for the area under each alternative are displayed in Table C-28.

Table C-27
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Black Canyon (5061)

	Alternatives						
Management Prescription	**PRF**	**CUR**	**RPA**	**CEE**	**AMN**	**AMB**	**AMC**
2. Proposed Wilderness							34.8 100%
17. Semi-Primitive Rec	34.8 100%				34.8 100%	34.8 100%	
18. Multiple Resource Area		34.8 100%	34.8 100%	34.8 100%			

Designation: Wilderness
Prescription #: 2
Alternative(s): AMC
Effects on the area: Wilderness designation would slightly enhance wilderness attributes of the area, as vehicle access over the Black Canyon Road would be eliminated. The type of recreation would change from motorized to nonmotorized, with an overall decline in the intensity of use. Other mechanized activities, such as hang gliding and all-terrain bicycling, would also be prohibited.

Fuelwood gathering would be eliminated. Pine-nut gathering would pose a source of potential conflict with wilderness administration.

The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

The only existing or potential economic dependencies on the area are motorized recreation and mining, which would be lost or restricted under wilderness. The greatest social benefit would be a formal wilderness designation. Administrative costs would increase slightly. There would be a cost associated with constructing trailheads to facilitate use of the area.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 17
Alternative(s): PRF, AMN, AMB
Effects on the Area: Wilderness values would be essentially maintained. The area would be managed to limit vehicle access and public road construction. The present motorized recreation would continue at a low level. Vehicles would be limited to existing roads and trails.

Natural appearance would be maintained, with the exception of a few isolated road, ORV, and mining impacts; the visual quality of the area as seen from U.S. Highway 395 (a State designated scenic highway) would be maintained at a moderately high level.

The option to allow fuelwood and pine-nut gathering would not change.

The area would remain available for new mineral claims. Mining activities would be affected only by applicable mining restrictions. New mining roads would be closed to the public.

There would be no direct economic effect. The limited recreation and mining would continue without change. Social losses would result from the loss of potential wilderness designation and the loss of an open ORV area.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or major resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 18
Alternative(s): CUR, RPA, CEE
Effects on the Area: Wilderness values would decline, and eventually be lost as the area would be managed to allow motor vehicle use to travel essentially uncontrolled, providing opportunities for challenge and freedom of movement. Motorized recreation use would increase as the area became roaded and more accessible. Natural appearance would be affected by increased, uncontrolled motorized recreation.

The option to allow fuelwood and pine-nut gathering would not change.

The area would remain available for new mineral claims. Mining opportunities would be enhanced as access throughout the area improved.

Economic consequences would be few. Increased mining and recreation opportunities would create minor benefits. The greatest social cost would be the losses of potential wilderness designation and a natural environment.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions. (All wildfires would be controlled under the CUR alternative.)

No other foreseeable environmental changes or major trade-offs requiring mitigation would result.

Table C-28
Average Annual Outputs for Decades 1 and 5
Black Canyon (5061)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0	0	0				34.8
Nonwilderness (M acres)	--	34.8	34.8	34.8	34.8	34.8	34.8	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	400	600	600	600	400	400	0
	5	600	900	900	900	600	600	0
Wilderness Recreation (RVDs)	1	0	0	0	0	0	0	150
	5	0	0	0	0	0	0	200
Total Wildlife and Fish User Days (WFUDs)	1	600	800	800	800	600	600	150
	5	900	1200	1200	1200	900	900	200
Grazing (AUMs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	38	50	50	50	38	38	9
	5	58	76	76	76	58	58	14
Costs (M$)	1	18	22	22	22	18	18	15
	5	32	38	38	38	32	32	5
Net Benefits (M$)	1	20	28	28	28	20	20	-6
	5	26	36	36	36	26	26	9

ANDREWS MOUNTAIN (#5063) Acres: 13,619

A. DESCRIPTION

The Andrews Mountain area lies in Inyo County on the Mt. Whitney Ranger District. A number of unimproved roads and vehicle tracks penetrate the area.

The boundary is defined by a loop jeep road that leads from the Waucoba road to Papoose Flat and Squaw Flat and returns.

The area lies in the Inyo Mountains in the Owens River watershed. It is diamond-shaped, 8 miles long by 4 miles wide. Elevations range from 7,000 to 9,460 feet.

Terrain is mostly rolling, with some flats and steep slopes. A few intermittent streams provide the only water. Rock is metasedimentary with granite outcrops.

The primary vegetation type in the area is pine-juniper woodland.

Scenic variety in the area falls into class B, 97 percent; class C, 3 percent. The surroundings are similar in appearance to the area itself. The Sierra Nevada on the west and desert ranges to the east can be seen in the far distance from the highest points. The surrounding scenery is similar to scenery within the area.

Current uses include recreation, wood gathering, and prospecting.

B. CAPABILITY

The natural ecological integrity of the area has been influenced to a low degree; its natural appearance to a very low degree. There are several cat-constructed mining roads, which though limited in area are visible for 2 to 3 miles. Mining claims and diggings are also visible, though they are scattered and their impact localized. Many scattered unimproved roads are also apparent.

Opportunities for solitude are low. The area is small, and screening is low to moderate; however there are no intrusions.

Opportunities for primitive recreation are also low. There is no diversity or challenge.

The original inventory boundary would not be manageable as wilderness. Minor adjustments could exclude the constructed roads mentioned above; the remaining impacts are scattered throughout the area.

C. AVAILABILITY

The Andrews Mountain area represents trade-offs between wilderness designation and vehicle-based recreation, wood gathering, and mining.

Existing recreation use includes dispersed motorized recreation (100 RVDs), nonmotorized recreation (100 WFUDs), and big game hunting (100 RVDs).

The area is incapable of producing commercial timber. The public gathers pinyon-juniper fuelwood in the area.

Of the lands in this area, 69 percent are rated high in mineral potential; 31 percent are rated low. There are 3 active mining claims in the area, of which none are currently producing.

Cultural resource values include prehistoric features and historic mining sites.

D. NEED

There is apparently little wilderness-type recreation use in the Basin and Range physiographic province. The Andrews Mountain area is typical of the province. This area is near the Paiute further planning area.

Public involvement for the RARE II study indicates that State and National environmental organizations favored the designation of wilderness in the White and Inyo Mountains. The Andrews Mountain area was not singled out for special treatment.

Local people favor nonwilderness options.

E. ENVIRONMENTAL CONSEQUENCES

Table C-29 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-30.

Table C-29
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Andrews Mountain (5063)

	Alternatives						
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness					13.6 100%		13.6 100%
17. Semi-Primitive Rec						13.6 100%	
18. Multiple Resource Area	13.6 100%	13.6 100%	13.6 100%	13.6 100%			

Designation: Wilderness
Prescription #: 2
Alternative(s): AMN, AMC
Effects on the Area: Wilderness attributes would be maintained, or even enhanced, as motorized use would be prohibited. As the quality of the wilderness experience offerred would be low, use would also remain low. Management of the area as wilderness would be difficult, as the terrain does not provide a natural barrier to vehicle entry. The natural appearance of the area would gradually improve, as 4-wheel drive trails would be allowed to restore, and prospecting for new mineral claims would be prohibited.

Fuelwood gathering would be prohibited.

The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

There are only minor potential economic dependencies on the area; they are associated with motorized recreation and mining. A social benefit would be a formal wilderness designation of an ecological type underrepresented in wilderness on the Forest. Administrative costs would increase. Approximately six miles of trial would be constructed.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription(s): 17
Alternative(s): AMB
Effects on the Area: Wilderness attributes would be maintained, as motorized use would be confined to existing routes and would not be expected to increase. Only a major mining operation could noticeably affect natural appearance and integrity and opportunities for solitude and primitive recreation.

Fuelwood gathering would continue to be allowed.

The area would be open to new mining claims; mining activities would be subject only to applicable mining laws. Any new mining roads would be closed to public use.

There are only minor potential economic dependencies associated with motorized recreation and mining in the area; they would be retained at current or increased levels. A social cost would be the lack of formal wilderness designation.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 18
Alternative(s): PRF, CUR, RPA, CEE
Effects on the Area: Wilderness values would be lost over time as the area would be managed to allow motor vehicle use to travel essentially uncontrolled, providing opportunities for challange and freedom of movement. Motorized recreation use would increase as the area became roaded and more easily accessible.

Natural appearance would be affected by increased motorized recreation travelling uncontrolled.

The option to allow fuelwood and pine-nut gathering would not change.

The area would remain open to new mining claims. Mining opportunities would be enhanced as access throughout the area increased.

Economic consequences would be few. Increased mining and recreation opportunities and activites would contribute minor benefits. The greatest social cost would be the loss of potential wilderness designation in an underrepresented ecolocial type.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions. (All wildfires would be controlled under the CUR alternative.)

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Table C-30
Average Annual Outputs for Decades 1 and 5
Andrews Mountain (5063)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0	0	0	0	13.6	0	13.6
Nonwilderness (M acres)	--	13.6	13.6	13.6	13.6	0	13.6	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	200	200	200	200	0	100	0
	5	300	300	300	300	0	150	0
Wilderness Recreation (RVDs)	1	0	0	0	0	100	0	100
	5	0	0	0	0	150	0	150
Total Wildlife and Fish User Days (WFUDs)	1	150	150	150	150	150	100	100
	5	225	225	225	225	225	150	150
Grazing (AUMs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	12	12	12	12	12	10	7
	5	19	19	19	19	19	15	11
Costs (M$)	1	6	6	6	6	6	5	22
	5	10	10	10	10	10	8	6
Net Benefits (M$)	1	6	6	6	6	6	5	-15
	5	9	9	9	9	9	7	5

PAIUTE (#5064 A&B) **Acres: 130,563**

A. DESCRIPTION

The Paiute area lies in Inyo County on the Mt. Whitney Ranger District. It is accessible from the Waucoba and Saline Valley roads, which parallel the boundary; and from the Papoose-Squaw Flat, Harkless Flat, and Mazourka Canyon jeep roads which intrude the area. Many additional unimproved roads and trails penetrate the interior.

Subparts A and B were assigned by the RARE II study; the boundary between the two was a north-south line that roughly bisected the area. The subparts have been reaggregated for purposes of this analysis; where only part of the area is recommended for wilderness, the revised boundary was drawn to improve manageability and reduce conflicts and does not coincide with the internal subpart boundary from RARE II.

The boundary of the entire are is defined by the Waucoba and Saline Valley roads on the north, and the Forest boundary on the east, west, and south. The road corridors mentioned above intrude the area. Adjoining lands are administered by the BLM or the City of Los Angeles.

The area encompasses a large part of the Inyo Mountains, in the North and South Owens River, Southeast White Mountains, and Saline Valley watersheds. Its irregular shape is due primarily to the abundance of road corridor intrusions. The perimeter is roughly rectangular, 11 miles wide and 24 miles long. Elevations range from 3,800 feet to 11,123 feet at Waucoba Mountain.

Terrain comprises a steep-sided ridge with high, rolling summit plateaus and flat benches. Intermittent streams follow steep, narrow canyons down both sides of the crest; there are 3 miles of perennial stream, but no fisheries. Several major springs nourish pockets of riparian vegetation.

The geology of the area is noteworthy. Mazourka Canyon itself represents a deeply-eroded layer of shale between two masses of granite, resulting in the deepest canyon in the range. Several impressive, smoothly-eroded granite monoliths stand out on the ridgetop. The exposed rock on the east slope of Waucoba and Squaw Mountains includes a distinctive marble outcrop and rock representing a variety of metasedimentary formations and geologic periods.

Primary vegetation types are pine-juniper woodland, big sagebrush, and shadscale scrub. Seep Hole and Side Hill Springs support unique plant associations. Spring desert wildflower displays in Mazourka and Rose canyons are especially attractive.

Scenic variety in the area falls into class A, 32 percent; class B, 64 percent; class C, 4 percent. The west slope of the Inyo Mountains is banded with colorful rock layers. This slope is a scenic landmark from Highway 395, State-designated a scenic highway in the Owens Valley. The surrounding area is also quite scenic. There are excellent views of the Owens Valley and Sierra crest to the west, and of Saline Valley to the east.

Other attractions include Nelson bighorn sheep and wild horses and burros.

Current uses include recreation, grazing, woodcutting and mining.

B. CAPABILITY

The natural ecological integrity of the area has been influenced to a high degree; its natural appearance to a very high degree. The major impacts, which affect 50 to 75 percent of the area, are numerous mining sites involving considerable disturbance and many miles of unimproved road and vehicle tracks. Additional signs of disturbance are scattered cabins, signs of woodcutting, two one-acre reservoirs, fences, foot trails, grazing, water pollution and trampling at springs used by cattle and wild horses and burros, and wildlife guzzlers. There are also two unauthorized mining occupancies in the area.

Opportunities for solitude are high. The area is quite large, and adjoins additional roadless land administered by the BLM. Screening is poor, and there are some intrusions from traffic on intruding roads.

Opportunties for primitive recreation are low, in spite of the size of the area. Access is difficult--there are few trails, and terrain is steep. There is little diversity, and only a little challenge.

Special features include research being conducted on the Inyo herd of Nelson bighorn sheep, and three sensitive plant species (Sclerocactus polyancistrus, Cryptantha roosiorum, and Caulostramina jaegeri). The latter two species grow at Sidehill and Seephole Springs.

The area would not be manageable as wilderness without major boundary adjustments. Due to the number of unimproved roads, vehicle access would be very difficult to control. If the area were reduced in size to approximately 55,000 acres in the southeast corner, the boundary would be manageable, the key wilderness values would be retained, trade-offs with other resources and uses would be minimized, and major mining sites and roads would be excluded. The revised area would rate very high in natural integrity and natural appearance.

Five parcels of roadless BLM land, encompassing 34,427 acres, adjoin the area. Of these, two are wilderness study areas currently favored by the BLM for wilderness, which adjoin the National Forest lands on the southeast.

C. AVAILABILITY

The Paiute area represents trade-offs between wilderness designation and vehicular recreation, woodcutting, and vegetation manipulation to benefit wildlife. Mining development could also conflict with wilderness values.

Current recreation use includes dispersed nonmotorized recreation (600 RVDs), dispersed motorized recreation (500 RVDs), big game hunting (500 WFUDs), small game hunting (200 WFUDs), and wildlife observation (200 WFUDs).

Approximately 4,460 acres are suitable for wildlife habitat manipulation.

Water from the area is used locally for mining, irrigation, livestock, wildlife, and domestic needs.

The proposed Whippoorwill Flat research natural area on the east side of Squaw and Waucoba Mountains would preserve undisturbed stands of pinyon pine and limber pine.

Grazing amounts to 120 AUMs with no potential for increased outputs; improvements are valued at $8,000.

The area is incapable of commercial timber production. Some public woodcutting takes place in pinyon pine areas.

Of the lands in this area, 34 percent are rated high in mineral potential; 15 percent are medium, and 51 percent are low. There are 39 active mining claims in the area, of which none are currently producing. Eleven mines have produced ore. Metals known or suspected to occur in the area are gold, silver, tungsten, and scheelite. Nonmetal minerals of possible value are marble, graphite, and talc.

Cultural resource values include prehistoric features and many historic mining sites. The Paiute Monument (also called Winnedumah) is a granite monolith on the divide. Various Paiute legends have developed around this feature.

D. NEED

There is little apparent wilderness-type recreation use in the Basin and Range physiographic province. The Paiute area is typical of the province, except for a few destination points at perennial springs, and scenic views in every direction. This area is near the Andrews Mountain further planning area.

Public involvement for the RARE II study indicated strong National and State interest in wilderness designation for the majority of the White and Inyo Mountains. Local people favored nonwilderness options.

There is, nevertheless, interest in some form of protection and/or recognition for unique features within the area. Local Paiute Indians value the Winnedumah Monument. Geologists value the close association of varied rock strata. The local chapter of the California Native Plant Society would like to see the proposed research natural area established, and some form of protection given to vegetation at Side Hill and Seep Hole Springs. Wildlife enthusiasts favor protection of the Nelson bighorn sheep.

E. ENVIRONMENTAL CONSEQUENCES

Table C-31 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-32.

Table C-31
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Paiute (5064 A&B)

	Alternatives						
Management Prescription	**PRF**	**CUR**	**RPA**	**CEE**	**AMN**	**AMB**	**AMC**
2. Proposed Wilderness	47.5	54.4			130.6	130.6	130.6
	37%	41%			100%	100%	100%
5. Research Natural Area	3.3	3.3	3.3	3.3	(3.3)	(3.3)	(3.3)
	3%	3%	3%	3%			
18. Multiple Resource Area	79.8	73.3	127.2	127.2			
	60%	56%	97%	97%			

Designation: Wilderness
Prescription #: 2
Alternative(s): AMN, AMB and AMC
Effects on the Area: Wilderness designation would maintain wilderness attributes within areas of existing high levels of natural ecological integrity and appearance. In areas containing low natural integrity and appearance, wilderness attributes would be somewhat enhanced, as motorized vehicle use would be eliminated. For much of the area, opportunities for finding solitude would be high. However, the overall quality of the primitive experience would remain low, due to the degree of past human influence and perceived desirability of the wilderness environment. Primitive recreation use in the area would, nevertheless, increase somewhat upon wilderness designation. Established motorized recreation would be eliminated.

Management of the area as wilderness would be difficult and costly, as the terrain does not restrict vehicle access at many locations. Since the area is quite isolated and difficult to manage, monitoring of use would be a problem. Mining under existing valid claims would also significantly complicate management.

Options to directly enhance wildlife habitat would be foregone; however, bighorn sheep habitat would receive considerable protection. Management of wild horses and burros would be more complicated and costly. Since these animals are nonnative species, they would constitute a wilderness management conflict.

The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

Unique geological features and sensitive vegetation would receive maximum protection from human influences. Wilderness designation would provide full protection for the proposed research natural area (RNA); however, the purposes and uses of wilderness and the RNA would not be completely compatible. Management conflicts could develop.

Socioeconomic consequences include lost opportunities for motorized recreation, hunting, woodcutting, and mining. The greatest social benefit would be a formal wilderness designation in an ecological type not yet represented in wilderness on the Forest. Costs of implementation would include construction of approximately 21 miles of trail and 5 trailheads. Administrative costs would increase dramatically.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource tradeoffs requiring mitigation would result.

Designation: Wilderness(revised boundary)/nonwilderness
Prescription #: 2, 5, 18
Alternative(s): PRF, CUR
Effects on the Area: The area recommended for wilderness under this combination of prescriptions would rate much higher in wilderness values, be more manageable as wilderness, and would conflict less with other existing and potential uses than would be the case if the entire area were managed as wilderness. For these reasons, a wilderness recommendation with the revised boundary proposed here would be more likely to be designated by Congress than the entire areas would be. The fact that the size of the revised area is considerably smaller than the entire area is offset by the fact that the revised area adjoins two large BLM wilderness study area currently favored by the BLM for wilderness.

Under this combination, wilderness designation and RNA management would maintain wilderness attributes within areas with existing high levels of natural ecological integrity and appearance. Areas containing low natural integrity and appearance would be open for vehicle access, and the existing low quality of wilderness attributes would continue to deteriorate over time.

For much of the area, both inside and outside of wilderness, opportunities for solitude would be high. The overall quality of the primitive experience would be low, even in wilderness, due primarily to lack of water. Primitive recreation use in the wilderness part would nevertheless increase upon wilderness designation. There is no existing motorized recreation in that area.

Management of the wilderness part would not be difficult or costly, as the terrain presents natural barriers to vehicle access along most parts of the boundary. Since the area is quite isolated, monitoring of use would be a problem.

The recommended wilderness and RNA areas would be withdrawn from mineral entry upon designation, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted. This effect would be moderated by the fact that the wilderness part of the area rates lower in mineral potential (5% high, 39% medium, and 56% low) than the entire area (34% high, 15% medium. and 51% low).

The effects of wilderness designation, in combination with RNA management, on other resources and activities would be similar for the wilderness and RNA parts of the area to those discussed above for the entire area under Prescription 2. The following discussion will address only the effects of Prescription 18 on the remaining area.

Parts of the area seen from Highway 395 would be nonwilderness, allowing for greater potential visual impacts as seen from a major scenic highway. Assigned VQOs for that area would, however, represent a fairly high level of protection.

Options to enhance wildlife habitat would be maintained. Bighorn sheep habitat would receive little protection. Wild horses and burros would represent no conflicts with management objectives.

Unique geological and ecological features are concentrated in the wilderness part of the area, and would, therefore, be protected from human influences.

Most facilities would be retained, as they are concentrated in the nonwilderness part of the area.

Exercise of lawful rights for road access to private land would constitute no conflict, as the private land is in the nonwilderness part.

As the proposed research natural area would lie outside of wilderness, there would be no potential conflicts between the management of wilderness and the RNA.

Socioeconomic benefits include opportunities for continued and increased motorized recreation, grazing, hunting, woodcutting, and mining. The greatest social loss would be a loss of potential wilderness designation for considerable acreage in an ecological type not yet represented in wilderness on the Forest.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions. (All wildfires would be controlled under the CUR alternative.)

No other foreseeable environmental changes or resource tradeoffs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 5, 18
Alternatives(s): RPA, CEE
Effects on the Area: The effects of this combination of prescriptions would be similar to those described above under the combination of Prescriptions 2, 5, and 18 except that wilderness attributes would be expected to deteriorate over the entire area (outside 3,300 acres in the RNA) in this scenario.

Bighorn sheep would be managed for population viability, but would receive no overall protection. Outstanding ecological and geological features would be increasingly vulnerable to damage or destruction as vehicle use increased in the area.

Mining opportunities would be enhanced as access throughout the area would be increased.

Vehicle-based recreation opportunities and mining with minimal restrictions would be social benefits under this combination.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

Table C-32
Average Annual Outputs for Decades 1 and 5
Paiute (5064 A&B)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	54.4	54.4	0	0	130.6	130.6	130.6
Nonwilderness (M acres)	--	76.2	76.2	130.6	130.6	0	0	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	1000	1000	1300	1300	0	0	0
	5	1500	1500	1950	1950	0	0	0
Wilderness Recreation (RVDs)	1	600	600	0	0	1800	1800	1800
	5	900	900	0	0	2000	2000	2000
Total Wildlife and Fish User Days (WFUDs)	1	500	500	1000	1000	400	400	400
	5	750	750	1500	1500	600	600	600
Grazing (AUMs)	1	120	120	120	120	120	120	120
	5	120	120	120	120	120	120	120
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	78	78	80	80	50	50	50
	5	117	117	120	120	65	65	65
Costs (M$)	1	520	520	183	183	638	638	638
	5	70	70	47	47	47	42	42
Net Benefits (M$)	1	-442	-442	-103	-103	-588	-588	-588
	5	47	47	73	73	23	23	23

A. DESCRIPTION

The Sugar Loaf area lies in Mineral and Esmeralda Counties, Nevada; on the White Mountain Ranger District. Mining roads lead from Highway 6, 2-3 miles to the area boundary. Many unimproved roads and some stock driveways lead into the area.

The boundary is defined by the Forest boundary and mining roads on the north, the Queen Canyon-Trail Canyon jeep road and the B & B Mine-Trail Canyon road on the south, and the Forest boundary on the east and west. Most adjoining lands are administered by the BLM; the remainder are privately owned.

The area lies at the north end of the White Mountains in the North Owens River and Northeast White Mountains watersheds. It is roughly rectangular, 5 miles long by 4.5 miles wide. Elevations range from 6,480 feet to 10,248 feet at Horseshoe Rock.

Terrain is a steep and dissected escarpment with gentler plateau on top. There are many intermittent streams; one mile of perennial stream, but no fisheries; and no lakes. Rock is primarily metasedimentary, with granitic intrusions.

The primary vegetation type is pine-juniper woodland. Bitterbrush and mountain mahogany are also present in moderate amounts.

Scenic variety in the area falls into class A, 21 percent; class B, 79 percent. The surrounding area is also fairly scenic. Views include the desert valleys and mountains to the west, north, and east, and the high ridges and peaks of the White Mountains at short range to the south.

The current uses are grazing and mineral exploration.

B. CAPABILITY

The natural ecological integrity of the area has been influenced to a moderate degree, its natural appearance to a high degree. A powerline passes through the area, there are scattered mineral impacts, and many unimproved roads crisscross the area.

Opportunities for solitude are moderate. The area is small, and there are some intrusions, but screening is moderate.

Opportunities for primitive recreation are low. There is little diversity and challenges are rare.

The original inventory boundary would be unmanageable as wilderness. Impacts are not separable, and vehicle access on unimproved roads is fairly easy.

C. AVAILABILITY

The Sugar Loaf area represents a few trade-offs between wilderness designation and other uses. Wilderness management would preclude increasing

grazing or improving wildlife habitat by vegetation manipulation, and would restrict mineral exploration and development.

Motorized recreation amounts to 200 RVDs per year; big game hunting amounts to 200 WFUDs.

Water in the area is used locally for irrigation, mining, livestock, and domestic needs.

Cattle grazing amounts to 50 AUMs; maximum potential is estimated at 60 AUMs.

The area is incapable of producing commercial timber.

Of the lands in this area, 2 percent are rated high in mineral potential; 20 percent are medium, and 78 percent are low. More than 600 claims have been filed for the area since 1862; 255 of these were filed between 1980-1982; there are no producing mines. There is one mine on a patented claim and one prospecting permit. The principal metallic minerals in the area are silver, gold, and mercury. There are smaller amounts of lead, zinc, and copper. Alurite, a possible source of aluminum, is widespread in the southeast part of the area. Geologic formations indicate the likelihood of additional resources.

Cultural resource values include prehistoric features and remnants of gold and silver mining in the 1870's.

The included private land (120 acres) is undeveloped.

D. NEED

There appears to be little wilderness-type recreation use in the Basin and Range physiographic province. The Sugar Loaf area is typical of the province. This area is near the White Mountains further planning area.

Public involvement for the RARE II study indicated support from national and state environmental organizations for wilderness in the White and Inyo Mountains.

Local residents and prospectors strongly favor nonwilderness in order that mining and other existing uses can continue with minimum restrictions.

E. ENVIRONMENTAL CONSEQUENCES

Table C-33 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-34.

Table C-33
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Sugar Loaf (5296)

	Alternatives						
Management Prescription	PRF	CUR	RPA	CEE	AMN	AMB	AMC
2. Proposed Wilderness							10.7 100%
17. Semi-Primitive Rec					10.7 100%	10.7 100%	
18. Multiple Resource Area	10.7 100%	10.7 100%	10.7 100%	10.7 100%			

Designation: Wilderness
Prescription #: 2
Alternative(s): AMC
Effects on the Area: Wilderness values would be maintained, or possibly improved. Activities capable of affecting wilderness values (except valid existing mining claims) would be prohibited. Administration of the area, as inventoried, would be difficult and costly.

The amount of wilderness recreation would be low due to the small size of the area, the lack of water or challenges and active mining influences. The area would be used primarily to access the north end of wilderness in the White Mountains area. Natural appearance would be improved with the exclusion of motor vehicles and elimination of 4-wheel drive trails.

Cattle grazing would continue essentially unchanged, except that motorized vehicles could not be used to monitor cattle, nor would structural improvements or vegetation manipulation be allowed.

The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

There would be a negative economic effect on the area. Mining and grazing activities would continue, but under costly restrictions. Motorized recreation would be eliminated. Benefits of increase wilderness recreation would be minor. However, there would be a social benefit of a formal wilderness designation of an ecological type underrepresented in wilderness on the Forest.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resoruce trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 17
Alternative(s): AMN, AMB
Effects on the Area: Wilderness attributes would likely be reduced from the existing situation due to the potential for further mineral exploration and development. Other activities capable of eroding wilderness values would be 4-wheel drive vehicle access and range improvements.

Motor vehicle use would be limited to existing roads and trails; use would resemble the existing situation but not be allowed to increase uncontrolled. Illegal vehicle use would, however, be difficult to control. Hunting and 4-wheel driving would not be affected. Natural appearance would be expected to gradually degrade over parts of the area with the continuation of mining and vehicle access.

The option of increasing livestock grazing would be retained.

Mining in the area would not be affected, nor would opportunities for future exploration and development change. Only applicable mining restrictions would affect mineral activites.

The present socio-economic situation would be maintained. Grazing and mining activites would continue with opportunities for some futher development.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

No other foreseeable environmental changes or resource trade-offs requiring mitigation would result.

Designation: Nonwilderness
Prescription #: 18
Alternative(s): PRF, CUR, RPA, CEE
Effects on the Area: The effects of Prescription 18 on this area would not be very different from the effects of 17, discussed above. The major differences would be that new vehicle routes would be allowed to develop, open ORV areas could be established, and mining roads could be left open to public use. The increased vehicle use that would result from this lower level of restriction would ease access and improve opportunities for nonwilderness recreation and resource management activities, but would have a corresponding negative effect on wilderness attributes.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions. (All wildfires would be controlled under the CUR alternative.)

Mining opportunities would be enhanced as access throughout the area would be increased.

Table C-34
Average Annual Outputs for Decades 1 and 5
Sugar Loaf (5296)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0	0	0	0	0	0	10.7
Nonwilderness (M acres)	--	10.7	10.7	10.7	10.7	10.7	10.7	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	250	250	250	250	200	200	0
	5	425	425	425	425	300	300	0
Wilderness Recreation (RVDs)	1	0	0	0	0	0	0	150
	5	0	0	0	0	0	0	225
Total Wildlife and Fish User Days (WFUDs)	1	250	250	250	250	200	200	100
	5	425	425	425	425	300	300	150
Grazing (AUMs)	1	51	51	51	51	51	51	50
	5	57	57	57	57	57	57	50
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	9	9	9	9	8	8	6
	5	13	13	13	13	12	12	9
Costs (M$)	1	8	8	8	8	8	8	7
	5	8	8	8	8	8	8	5
Net Benefits (M$)	1	1	1	1	1	0	0	-1
	5	5	5	5	5	4	4	4

EXCELSIOR (#5989-Nevada part only) Acres: 8,039 (35)

A. DESCRIPTION

The Excelsior area lies in Mineral County, Nevada. It is administered by the Mono Lake Ranger District. Many unimproved roads lead into the area from the direction of U.S. Highway 6.

The boundary is defined on the north and east by the Forest boundary, and on the southeast by the Nevada state line. Adjoining lands are administered by the BLM or by the Toiyabe National Forest.

The area lies on the south end of the Excelsior Mountains, in the Huntoon Creek watershed. The area forms an irregular triangle, roughly five miles on each side.

Terrain is moderately rugged. There are some seeps and springs, but no fisheries and no lakes.

Vegetation types are pine-juniper woodland and big sagebrush.

Scenic variety in the area falls into class B, 36 percent; and class C, 64 percent. The immediate surroundings are similar in appearance to the area itself. The Excelsior and White Mountains can be seen to the northeast and south from high points within the area.

Another attraction is the Pizona herd of wild horses, which ranges over the area. Current uses include recreation and grazing.

B. CAPABILITY

The natural ecological integrity and natural appearance of the area have been influenced to a low degree. Unimproved roads in the area receive continuing use and would be very difficult to close. Other signs of human activity include fences, other range improvements, and grazing animals.

Opportunities for solitude are high. The area is quite large when considered in combination with adjoining roadless lands on the Toiyabe National Forest. Screening and visual intrusions are moderate.

Opportunities for primitive recreation are low, due primarily to the size of the area in combination with Toiyabe National Forest lands. Diversity and challenge are low, and there is no available water.

Special features include abundant cultural resource sites.

The area boundary would be difficult to manage as wilderness due to the ease and history of vehicle access and the distance from Forest Service administrative centers.

C. AVAILABILITY

The Excelsior area represents some trade-offs between wilderness designation and other resources and activities. Wilderness management would exclude

vehicle-based recreation, which is currently the primary use of the area. It would also preclude the increase of grazing or improvement of wildlife habitat by vegetation manipulation. Although wilderness designation would protect cultural resources from vehicle-based artifact hunters, it would also restrict access for legitimate research.

Dispersed motorized recreation accounts for approximately 200 RVDs of use in the area; big game hunting amounts to 200 WFUDs. The majority of visitors to the area come from the local Benton community.

Approximately 3,800 acres within the area are suitable for wildlife habitat manipulation; Truman Meadows is key mule deer winter range.

Watershed improvement projects have been proposed for Truman Meadows and McBride Springs. Vehicle access would be needed for the projects to be cost effective.

There is currently no cattle grazing in the area, as wild horses have priority for forage. The area is, however, suitable for grazing and could be managed with that emphasis if priorities changed. The Pizona herd of wild horses ranges through the area.

The area is incapable of producing commercial quality timber.

There are many prehistoric cultural sites, including Indian pine-nut gathering and wintering areas.

Of the lands in this area, all are rated low in mineral potential. There are no active mining claims in the area.

There is one parcel of undeveloped private land (35 acres).

D. NEED

There appears to be little wilderness-type recreation use in the Basin and Range physiographic province. The Excelsior area is typical of, though perhaps more scenic than average for the province. This area adjoins the Excelsior roadless area on the Toiyabe National Forest.

The area is an 8-hour drive from Los Angeles, and 8.5 hours from San Francisco.

The area described here (in combination with 45,938 additional acres in California) was recommended for wilderness by the RARE II Final EIS and by all California wilderness legislation drafted between 1979 and 1983. In 1983, this area (along with most roadless lands nationwide) was identified for reevalution. The adjoining California lands were subsequently released for nonwilderness uses by the California Wilderness Act of 1984, while the Nevada lands remained under reevaluation. Wilderness legislation for Nevada currently being considered in congressional committees does not propose this area or the adjoining Toiyabe National Forest lands for wilderness designation. The proposed Toiyabe National Forest plan (now in public review) allocates the Toiyabe Excelsior area to nonwilderness uses.

Public involvement for the RARE II study indicated general support from State and national environmental organizations for wilderness designation; however, this area was not targeted for special attention.

There was, in contrast, considerable opposition to wilderness management of this area (and adjoining California lands). Local residents, especially senior citizens, resist exclusion of vehicles from the area; they do not see the area as roadless.

E. ENVIRONMENTAL CONSEQUENCES

Table C-35 indicates which management prescriptions were applied to (all or part) of the area under each alternative. The narratives following the table discuss the effects of each prescription on the area in terms of present uses, wilderness attributes, and nonwilderness development opportunities. Resource and activity outputs for the area under each alternative are displayed in Table C-36.

Table C-35
Management Prescription Allocations
by Alternative (M Acres and Percent of Area)
Excelsior - Nevada part (5989)

	Alternatives						
Management Prescription	**PRF**	**CUR**	**RPA**	**CEE**	**AMN**	**AMB**	**AMC**
2. Proposed Wilderness							8.0 100%
4. Mule Deer Habitat	3.1 39%				3.1 39%	3.11 39%	
17. Semi-Primitive Rec	4.9 61%				4.9 61%	4.9 61%	
18. Multiple Resource Area		8.0 100%	8.0 100%	8.0 100%			

Designation: Wilderness
Prescription #: 2
Alternative(s): AMC
Effects on the Area: Wilderness values would be maintained, or possibly improved under this prescription. Activities capable of affecting wilderness values would be prohibited. Administration of the area as wilderness would, however, be difficult and costly. The isolation of the area and ease of access would make illegal vehicle entry very likely.

The amount of wilderness recreation would be low, based on the area's lack of water, diversity, and challenge. Opportunities for solitude would be high. Existing natural appearance would be maintained, or possibly improved with the exclusion of vehicles and restoration of 4-wheel drive trails.

Options to manipulate vegetation and construct improvements for wildlife or livestock benefits would be foregone. As wild horses are a nonnative species, their presence in wilderness would represent a conflict.

Cultural resources would receive maximum protection from damage or destruction, but wilderness designation would restrict ease of access for legitimate research.

The area would be withdrawn from mineral entry upon designation as wilderness, resulting in a loss of mineral opportunity. No new mining claims could be located, and activities on mining claims with existing valid claims could be restricted.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

There are no major economic dependencies in the area. As big game hunting and other vehicle-based based recreation are locally based, they do not affect the local economy. Wilderness designation could bring more nonlocal people into the area, with benefits for the local economy. The potential to graze livestock in the area represents an economic opportunity foregone (this opportunity is already, however, foregone with the emphasis on wild horses). There would be a negative social impact on the area, as historical recreation patterns would be disrupted. On the other hand, a social benefit would be derived from wilderness designation in an ecological type not yet represented in wilderness on the Forest.

Designation: Nonwilderness
Prescription #: 4, 17
Alternative(s): PRF, AMN, AMB
Effects on the Area: Wilderness values would generally be maintained under this combination of prescriptions. Most activities capable of affecting wilderness values (such as new public road construction or open ORV areas) would be restricted or prohibited. The amount of recreation use would remain low. Options to manipulate vegetation and construct improvements for wildlife would be retained. Wild horses would not represent a conflict with wilderness, but might come into competition with deer.

Cultural resources would receive moderate protection from damage or destruction, as no new vehicle routes would be allowed. Research parties would have the option of vehicle access to research sites.

The area would be open for new mining claims; only applicable mining laws would apply. Any new mining roads would be closed to vehicle access.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions.

There are no major economic dependencies in the area. Existing big game hunting and other vehicle-based based recreation would continue unchanged, representing a social benefit. On the other hand, a social loss would be derived from lack of wilderness designation for the area.

Designation: Nonwilderness
Prescription #: 18
Alternative(s): CUR, RPA, CEE
Effects on the Area: Wilderness attributes in the area would be expected to decline under this prescription, as vehicle access (including open ORV areas)

could increase, and new routes proliferate. Under conditions of improved access, natural integrity and appearance would decline. Use would increase somewhat, although the distance of the area from population centers would prevent major increases. Opportunities for solitude would probably remain high, and opportunities for primitive recreation would continue to be limited by lack of water. Mining opportunities would be enhanced as access throughout the area increased.

Confinement or containment would be the appropriate fire suppression strategies applied under most conditions. (All wildfires would be controlled under the CUR alternative.)

The maintenance of traditional recreation opportunities would be a social benefit; the lack of formal wilderness designation would be a social cost. There would be no major economic effects.

Table C-36
Average Annual Outputs for Decades 1 and 5
Excelsior - Nevada part (5989)

Resource or Activity	Decade	Alternatives PRF	CUR	RPA	CEE	AMN	AMB	AMC
Recommended Wilderness (M acres)	--	0	0	0	0	0	0	8.0
Nonwilderness (M acres)	--	8.0	8.0	8.0	8.0	8.0	8.0	0
Total Developed Recreation (M RVDs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Dispersed Recreation (RVDs)	1	200	200	200	200	200	200	0
	5	300	300	300	300	300	300	0
Wilderness Recreation (RVDs)	1	0	0	0	0	0	0	150
	5	0	0	0	0	0	0	200
Total Wildlife and Fish User Days (WFUDs)	1	200	200	200	200	200	200	100
	5	300	300	300	300	300	300	150
Grazing (AUMs)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Suitable Timber Land (acres)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Timber Volume (MMCF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
(MMBF)	1	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	0
Gross Benefits(M$)	1	8	8	8	8	8	8	6
	5	12	12	12	12	12	12	9
Costs (M$)	1	8	8	8	8	8	8	7
	5	8	8	8	8	8	8	5
Net Benefits (M$)	1	1	1	1	1	1	1	-1
	5	5	5	5	5	5	5	4

Appendix D

Roadless Area Allocations

APPENDIX D. ROADLESS AREA ALLOCATIONS

INTRODUCTION

The California Wilderness Act of 1984 called for nonwilderness management on 338,319 acres of roadless land in 21 areas on the Inyo National Forest. None of these nonwilderness areas have been considered for potential wilderness designation in the present 10-year planning period. These areas could be considered for wilderness in future planning periods if they continued to meet the minimum criteria for wilderness designation. Table 1 lists nonwilderness areas by number and name and the National Forest System acreage in each. Table 2 displays the management prescriptions under which each area would be managed under the various alternatives.

Table 1
Nonwilderness Roadless Areas

Code Number	Name	NFS Acres *
5029	South Sierra	43,203
5030	Wonoga Peak	11,279
5031	Independence Creek	14,024
5032	Tinemaha	28,002
5034	Coyote North	15,293
5036	North Lake	2,584
5039	Horton Creek	6,414
5041	Nessie	1,243
5042	Rock Creek West	2,854
5043	Whiskey Creek	1,152
5044	Nevahbe Ridge	519
5046	Sherwin	3,968
5047	San Joaquin	21,214
5053	Dexter Canyon	17,735
5054	Glass Mountain	53,975
5055	Watterson	7,465
5057	Deep Wells	7,433
5062	Soldier Canyon	44,774
5288	Mono Craters	6,900
5988	Mt. Olsen	2,395
5989	Excelsior (California)	45,893

* This acreage was derived from the Forest data base; it does not necessarily match acreage figures for the same roadless areas in other documents.

KEY TO ABBREVIATIONS USED IN TABLE 2:

1.	Designated Wilderness	=	Des Wld
2.	Proposed Wilderness	=	Prp Wld
3.	Bighorn Sheep Habitat	=	Bighorn
4.	Mule Deer Habitat	=	Deer
5.	Research Natural Areas	=	RNA
6.	Mono Basin NF Scenic Area	=	MBNFSA
7.	Ancient Bristlecone Pine Forest	=	ABPF
8.	Wild and Scenic River	=	W/SR
9.	Uneven-aged Timber Managment	=	U/A Tbr
10.	High Level Timber Management	=	Hi Tbr
11.	Range	=	Range
12.	Concentrated Recreation Area	=	Con Rec
13.	Alpine Ski Area	=	Ski
14.	Potential Alpine Ski Area	=	Pot Ski
15.	Developed Recreation Site	=	Rec Site
16.	Dispersed Recreation	=	Disp Rec
17.	Semi-Primitive Recreation	=	S-P Rec
18.	Multiple Resource Area	=	MR Area

Table 2
Acres by Management Prescription
by Alternative for Nonwilderness Areas

Nonwilderness Area Number/Name	Acres by Prescription by Alternative					
	PRF	CUR	RPA	CEE	AMN	AMB
5029 South Sierra	Deer 25,800 *	Range 5,900	Deer 20,000	Deer 25,600	Deer 25,600	Deer 25,600
	W/SR 2,300	W/SR 2,300	W/SR 2,300	W/SR 2,300	W/SR 2,300	W/SR 2,300
	S-P Rec 15,100	S-P Rec 24,000	Hi Tbr 11,000	Hi Tbr 11,000	S-P Rec 15,300	S-P Rec 15,300
		Hi Tbr 11,000	Range 9,900	Range 4,300		
5030 Wonoga Peak	S-P Rec 11,300	S-P Rec 11,300	S-P Rec 11,300	Roaded 11,300	S-P Rec 11,300	S-P Rec 11,300
5031 Independence Creek	Bighorn 2,600	Bighorn 2,600	Bighorn 2,600	Bighorn 2,600	Bighorn 2,600	Bighorn 2,600
	S-P Rec 11,400	S-P Rec 11,400	S-P Rec 11,400	Roaded 11,400	S-P Rec 11,400	S-P Rec 11,400
5032 Tinemaha	Bighorn 2,200	Bighorn 2,200	Bighorn 2,200	Bighorn 2,200	Bighorn 2,200	Bighorn 2,200
	Deer 11,600	S-P Rec 25,800	Range 12,200	Deer 12,200	Deer 12,200	Deer 12,200
	S-P Rec 14,200		S-P Rec 13,600	S-P Rec 11,800	S-P Rec 13,600	S-P Rec 13,600
				MR Area 1,800		
5034 Coyote North	S-P Rec 15,300	Range 3,000	Range 3,000	MR Area 15,300	S-P Rec 15,300	S-P Rec 15,300
		S-P Rec 12,300	MR Area 12,300			

* Figures have been rounded off to nearest hundred.

Table 2 (continued)
Acres by Management Prescription
by Alternative for Nonwilderness Areas

Nonwilderness Area Number/Name	Acres by Prescription by Alternative PRF	CUR	RPA	CEE	AMN	AMB
5036 North Lake	Deer 2,600	S-P Rec 2,600	S-P Rec 2,600	S-P Rec 2,600	Deer 2,600	Deer 2,600
5039 Horton Creek	Deer 6,400	S-P Rec 6,400	Range 5,200	Deer 5,200	Deer 5,200	Deer 5,200
			MR Area 1,200	MR Area 1,200	S-P Rec 1,200	S-P Rec 1,200
5041 Nessie	S-P Rec 1,200	S-P Rec 1,200	S-P Rec 1,200	S-P Rec 1,200	S-P Rec 1,200	S-P Rec 1,200
5042 Rock Creek West	S-P Rec 2,900	S-P Rec 2,900	S-P Rec 2,900	S-P Rec 2,900	S-P Rec 2,900	S-P Rec 2,900
5043 Whisky Creek	S-P Rec 1,200	S-P Rec 1,200	Range 1,200	S-P Rec 1,200	S-P Rec 1,200	S-P Rec 1,200
5044 Nevahbe	S-P Rec 500	S-P Rec 500	Range 500	S-P Rec 500	S-P Rec 500	S-P Rec 500
5046 Sherwin	Ski 3,100	Ski 3,100	Ski 3,100	Ski 3,100	S-P Rec 4,000	S-P Rec 4,000
	S-P Rec 900	S-P Rec 900	S-P Rec 900	S-P Rec 900		

Table 2 (continued)
Acres by Management Prescription
by Alternative for Nonwilderness Areas

Nonwilderness Area Number/Name	Acres by Prescription by Alternative PRF	CUR	RPA	CEE	AMN	AMB
5047 San Joaquin	UA Tbr 600	Hi Tbr 3,700	Hi Tbr 11,300	Hi Tbr 3,700	Hi Tbr 3,700	UA Tbr 2,600
	Con Rec 200	Pot Ski 2,300	S-P Rec 9,900	Ski 13,000	Con Rec 700	Hi Tbr 3,700
	Ski 1,300	S-P Rec 15,200		S-P Rec 4,500	S-P Rec 16,800	Con Rec 3,700
	Disp Rec 1,200					Ski 7,100
	S-P Rec 21,200					S-P Rec 7,100
	Pot Ski 13,000					
5053 Dexter Canyon	Hi Tbr 600	Hi Tbr 3,300	Hi Tbr 3,300	Hi Tbr 3,300	Hi Tbr 3,300	Hi Tbr 3,300
	Range 17,100	Range 14,400	Range 14,400	Range 14,400	Range 14,400	Range 14,400
5054 Glass Mountain	RNA 3,100	RNA 3,100	RNA 3,100	RNA 3,100	RNA 3,100	RNA 3,100
	Hi Tbr 5,400	Hi Tbr 2,700	Hi Tbr 2,700	Hi Tbr 2,700	Hi Tbr 2,700	Hi Tbr 2,700
	Range 30,800	Range 33,500	Range 34,900	Range 33,500	Range 4,900	Range 4,900
	S-P Rec 14,700	S-P Rec 14,700	S-P Rec 13,300	S-P Rec 14,700	S-P Rec 43,300	S-P Rec 43,300
5055 Watterson	Range 7,500	Range 7,500	Range 7,500	Range 7,500	S-P Rec 7,500	S-P Rec 7,500

Table 2 (continued)
Acres by Management Prescription
by Alternative for Nonwilderness Areas

Nonwilderness Area Number/Name	Acres by Prescription by Alternative PRF	CUR	RPA	CEE	AMN	AMB
5057 Deep Wells	S-P Rec 7,400	S-P Rec 7,400	Range 7,400	MR Area 7,400	S-P Rec 7,400	S-P Rec 7,400
5062 Soldier Canyon	MR Area 44,800	MR Area 44,800	MR Area 44,800	MR Area 44,800	S-P Rec 44,800	S-P Rec 44,800
5288 Mono Craters	MBNFSA 6,900	MBNFSA 6,900	MBNFSA 6,900	MBNFSA 6,900	MBNFSA 6,900	MBNFSA 6,900
5988 Mt. Olsen	S-P Rec 2,400	S-P Rec 2,400	S-P Rec 2,400	S-P Rec 2,400	S-P Rec 2,400	S-P Rec 2,400
5989 Excelsior (California)	Deer 7,500	S-P Rec 45,900	MR Area 45,900	MR Area 45,900	Deer 7,500	Deer 7,500
	S-P Rec 38,400				S-P Rec 38,400	S-P Rec 38,400

Appendix E

Major Silvicultural Systems and their Application

APPENDIX E. MAJOR SILVICULTURAL SYSTEMS AND THEIR APPLICATION

INTRODUCTION

The purpose of this paper is to describe the major silvicultural systems used in land management planning for National Forests, and the advantages and disadvantages of each, considering both biological and managerial perspectives. However, almost all of the information in this paper also 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 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 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.

-- Occurrence of shade-tolerant and intolerant plants. Even-aged and group selection systems favor plants that can be readily established and which 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; few grasses, forbs, and shrubs; many non-commercial hardwood tree species; and a few commercial conifer tree species, such as white fir and incense-cedar.

However, on low-quality forest lands where lack of 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, how diversity is evaluated, and on how the stands are managed under the different silvicultural systems.

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 which 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 species 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 can 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 the 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. By contrast, in the single-tree selection system, the vertical diversity within each stand should be much greater. 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 of 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 there if the single-tree selection system were used. These root diseases and dwarf mistletoes infect other trees more easily when this system is used.

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, if regeneration of a particular species were to fail repeatedly over broad areas, genetic diversity would be reduced.

-- Quality of genes. Where improperly applied, the single-tree selection system can lead to "high-grading", which in turn reduces genetic quality for 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 should 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. By contract, 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. See Table 1 for a biological comparison of system attibutes. 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 California:

- -- Clearcut areas are regarded as visually unattractive
- -- The risks of significant soil erosion and loss of soil productivity are thought to be much greater for the clearcutting system
- -- Regeneration of clearcut stands is thought to be unreliable
- -- The risks of significant genetic losses are thought to be much greater for the clearcutting system because new stands may be monocultures
- -- 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
- -- 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 naturally-appearing landscapes. Uneven-aged systems apply treatments on a small scale. The treatments are also more selective in nature, and are well distributed in the

Table 1. Ratings of the major silvicultural systems by principal biological attributes.

○ is Good, Excellent, or Many
◑ is Moderate or Few
● is Poor or None

BIOLOGICAL ATTRIBUTE	CLEAR CUTTING	SHELTERWOOD	SEED-TREE	GROUP SELECTION	SINGLE-TREE SELECTION
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"

Table 2. Ratings of the major silvicultural systems by key managerial attributes.

○ is Good, Excellent, or High
◑ is Moderate
● is Poor

MANAGERIAL ATTRIBUTE	CLEAR CUTTING	SHELTERWOOD	SEED-TREE	GROUP SELECTION	SINGLE-TREE SELECTION
Overall Public Acceptance	●	◑	◑	◑	○
Natural Appearance	●	◑	◑	◑	○
Soil Protection in Stands					
Soil stability where soils have high erosion potentials	●	◑	◑	●	○
Scientific Knowledge Base and Management Experience	○	◑	◑	◑	◑
Wood Production					
a. Cost efficiency of treatments:					
(1) General (based on treatment unit size)	○	○	○	●	●
(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[1]	○	○	○	◑	◑
f. Potential for genetic improvement of trees by planting	○	○	○	◑	◑

Table 2 (continued).

○ is Good or Excellent
◑ is Moderate
● is Poor

MANAGERIAL ATTRIBUTE	CLEAR CUTTING	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"

forest. However, long-term maintenance of naturally-appearing landscapes can 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 work, 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 quality 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 quality 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.

-- 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 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, so as to re-establish 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 due to 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 when large trees in adjacent groups were felled, or when logs were moved out of the stand, in later harvesting projects. 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 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 seedling and sapling potential 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 could 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-effective.

Regeneration by clearcutting is the most cost-efficient among the even-aged systems. Shelterwood and seed tree systems are less so, in that 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 threes than would be planted, or are desirable. Also, unreliable seed production by many commercial tree species often delays natural regeneration. This reduces wood 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 to be 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 to be 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 trees needed for 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 among silvicultural systems: (1) variability in sizes of harvested trees, (2) area to be harvested, (3) complexity of the harvesting treatment, (4) the probability of causing significant damage to trees to be left in the stand, and (5) the probability of causing long-term root disease problems. The first three influence harvesting efficiencies, and the other 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 capacity 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 which can serve as fuel breaks occur less frequently in forests or stands managed by this system.

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 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; which means that all of the trees in the stand are approximately 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 (shown in Figure 1) is the harvesting, in one operation, of all merchantable trees in a stand or a larger area to help establish 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 seed, or by planting seeds or seedlings. In California, clearcut stands are usually regenerated by planting seedlings.

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 seed-tree system (shown in Figure 2), 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. There has been a major shift to using the clearcutting or shelterwood systems over the last two decades. The primary reason is that the selection cuttings caused significant understocking in many stands, thereby reducing productivity. There are many examples of poor selection cuttings in California, under the guise of the single-tree selection system. High quality, large trees were cut, leaving inferior, small trees. Genetic principles were ignored, and many stands were left understocked, with

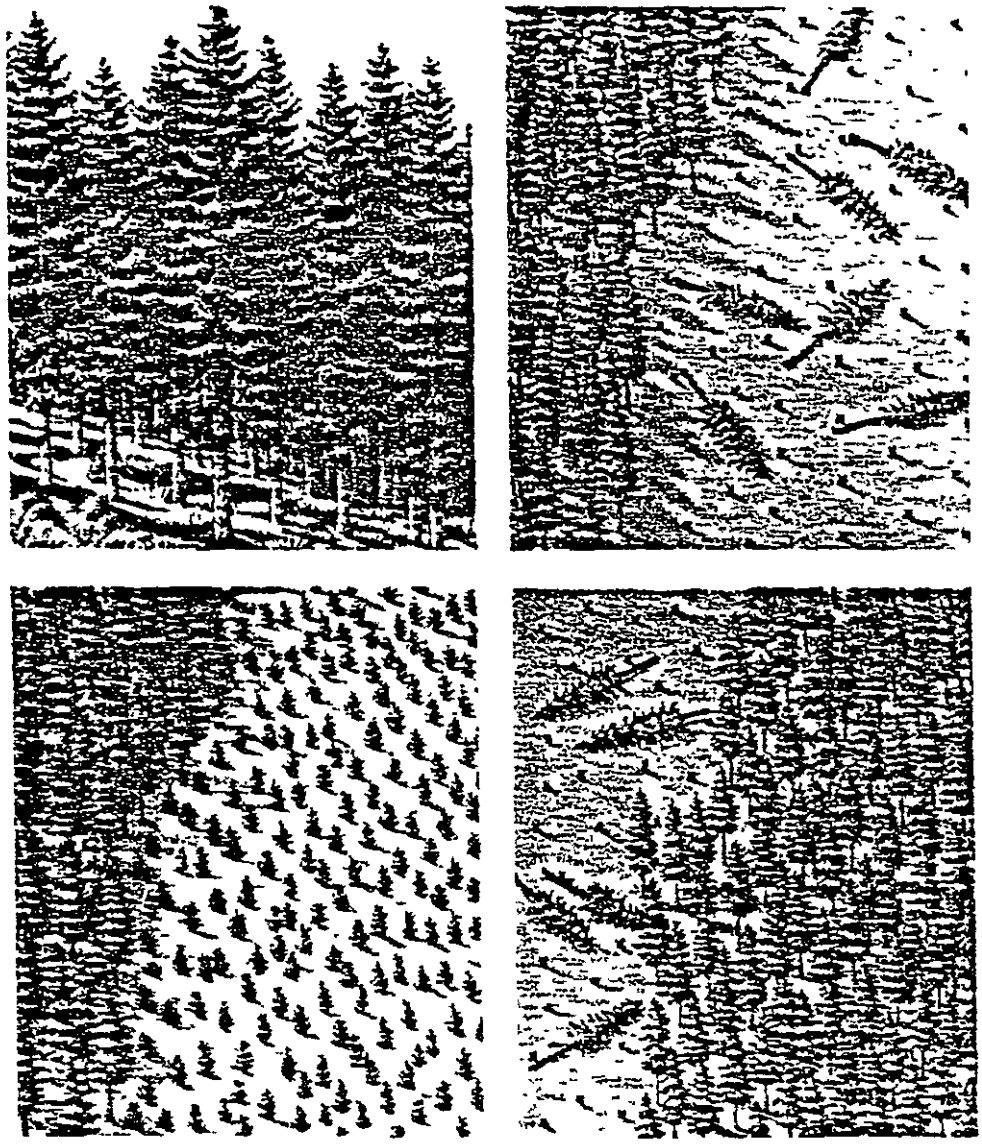

Figure 1. **Clearcutting.** *Part of a mature stand is cut, removing all trees. A new stand arises from seeds of surrounding trees or from sprouts sent up by roots or stumps. Seedlings may also be planted or seeds broadcast. When the new trees are well on their way in the unobstructed light of the clearing, 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* and the Society of American Foresters.)

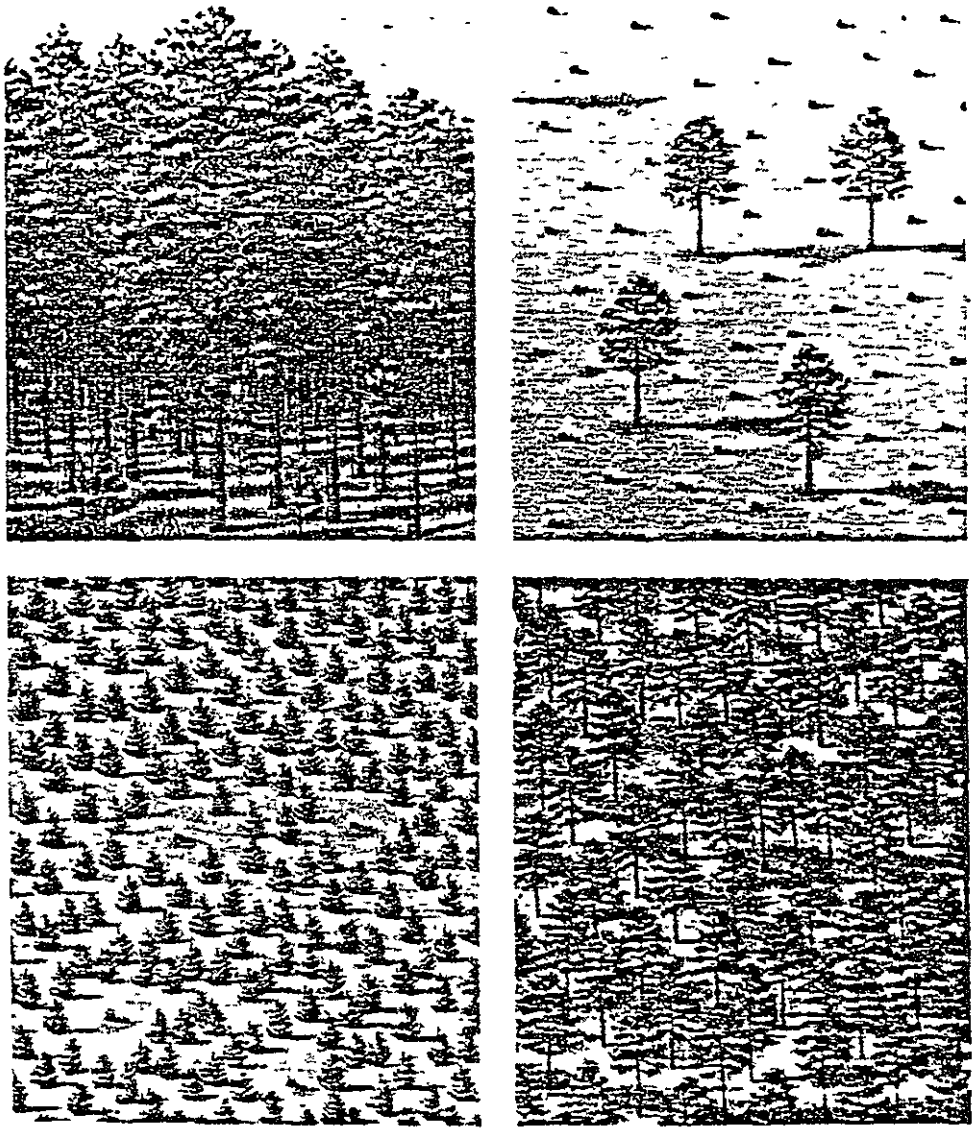

Figure 2. **Seed-tree System.** *The mature stand is logged, but enough trees are left to reseed the area. The seed trees usually are large and valuable, and may be harvested when they have fulfilled their purpose. Like clearcutting, the system favors light-demanding species. (The illustration is from* 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* and the Society of American Foresters.)

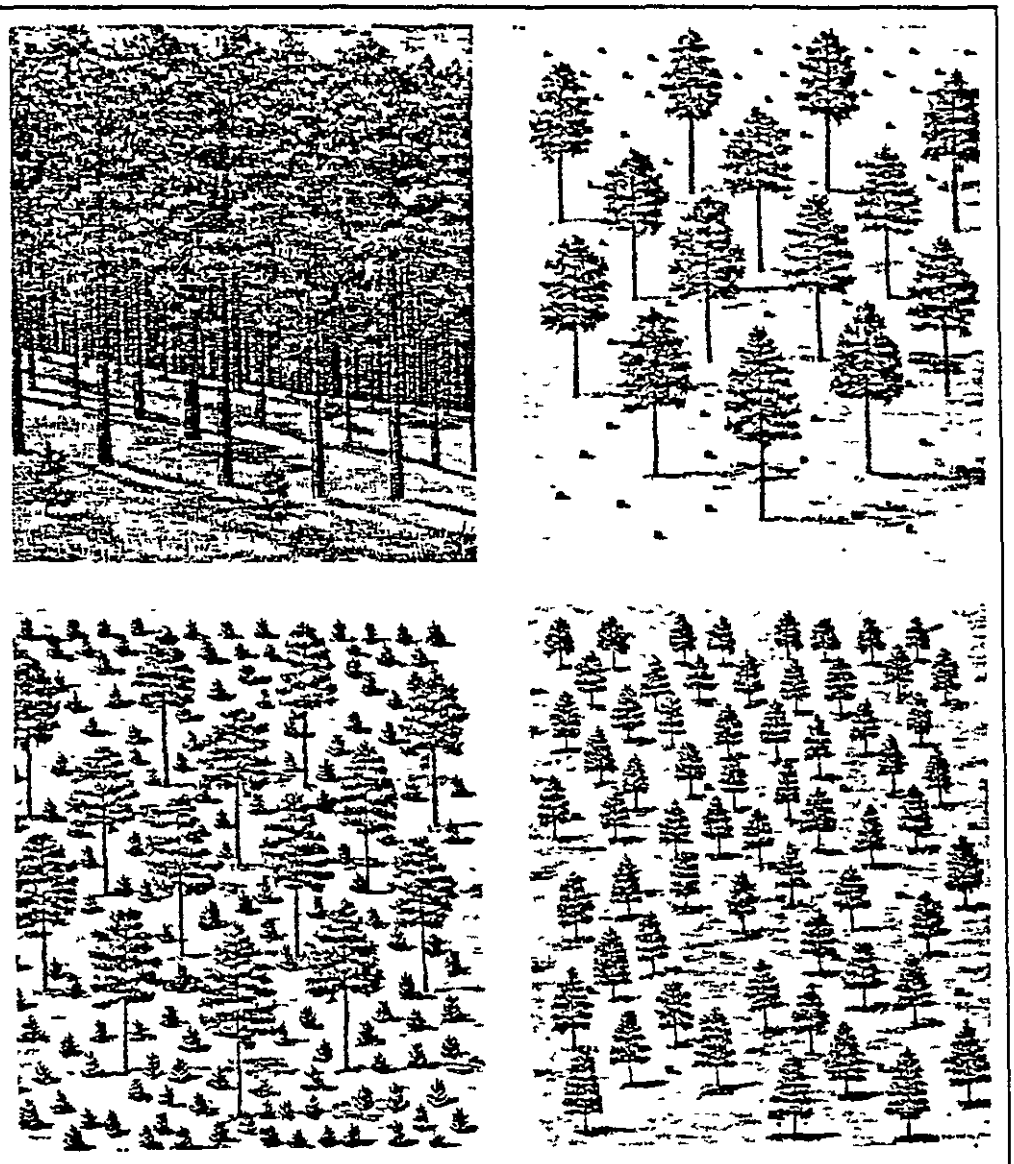

Figure 3. **Shelterwood System.** *A mature stand is partially cut, leaving some of the better trees of desired species to grow, cast seed, and provide shade and perhaps other shelter for the new stand. Usually more trees are left per acre than in the seed-tree system. These shelter trees will be harvested after seedlings have become established and no longer need protection.* (The figure and caption are used with the permission of the Society of American Foresters.)

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 shelterwood system (shown in 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 under shelterwoods by planting seedlings 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 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 CONTRACTS..."

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.

By Federal law, the allowable sale quantity generally cannot exceed the long-term, sustained 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. By 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 SIVLICULTURAL SYSTEMS

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. By 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. By 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.

Also, the multiple tree layers create "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 controlled 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 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 disease, 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 abut 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 harvest time 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.

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Appendix F

Economic Efficiency Analysis

APPENDIX F. ECONOMIC EFFICIENCY ANALYSIS

CONCEPTUAL BACKGROUND

Present Net Value (PNV) is the criterion used to maximize net benefits in planning benchmarks and alternatives for the Inyo 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. "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 streams; fur-bearing animals and other harvested miscellaneous products; the value of any increased water flow quantities; the in-the-ground value of minerals; and all Recreation Visitor Days including those for wildlife, fishing, and wilderness experiences.

The alternatives are designed to achieve specified "non-priced" outputs and to meet constraints at the least cost. 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 both priced and non-priced outputs while 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 as 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 or not they can be quantitatively valued. Thus, conceptually, Net Public Benefits are the sum of PNV plus the full value of non-priced outputs. The full value of non-priced benefits is used because their cost of production has been accounted for in PNV. The non-priced benefits include outputs such as threatened and endangered species maintenance or enhancement; natural and scientific areas; cultural site reservation such as Indian religious sites, and historical or anthropological sites; visual quality in excess of 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 second-level benefits or effects that are also the concern of national Forest policy and management. These include local income and job effects on the 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. 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 Environmental Impact Statement. 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	Reference
Discussion of how economic efficiency analysis was used in the process of developing alternatives.	Chapter II, Alternative Development Process.
Outputs, total cost, and PNV for each of the benchmarks.	Chapter II, 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.	Chapter II, Economics and Trade-off Analysis
Background information on economic conditions and the resource supply-demand situation for the Forest.	Chapter III, Affected Environment.
How and why the PNV of the alternatives differ.	Chapter IV, Environmental Consequences.
Technical details of the modeling and analysis process including a description of basic estimates and assumptions on benefits, costs, and interest rates.	Appendix B, The Resource Allocation Model and Analysis Process.

Appendix G

Budget
Appendix

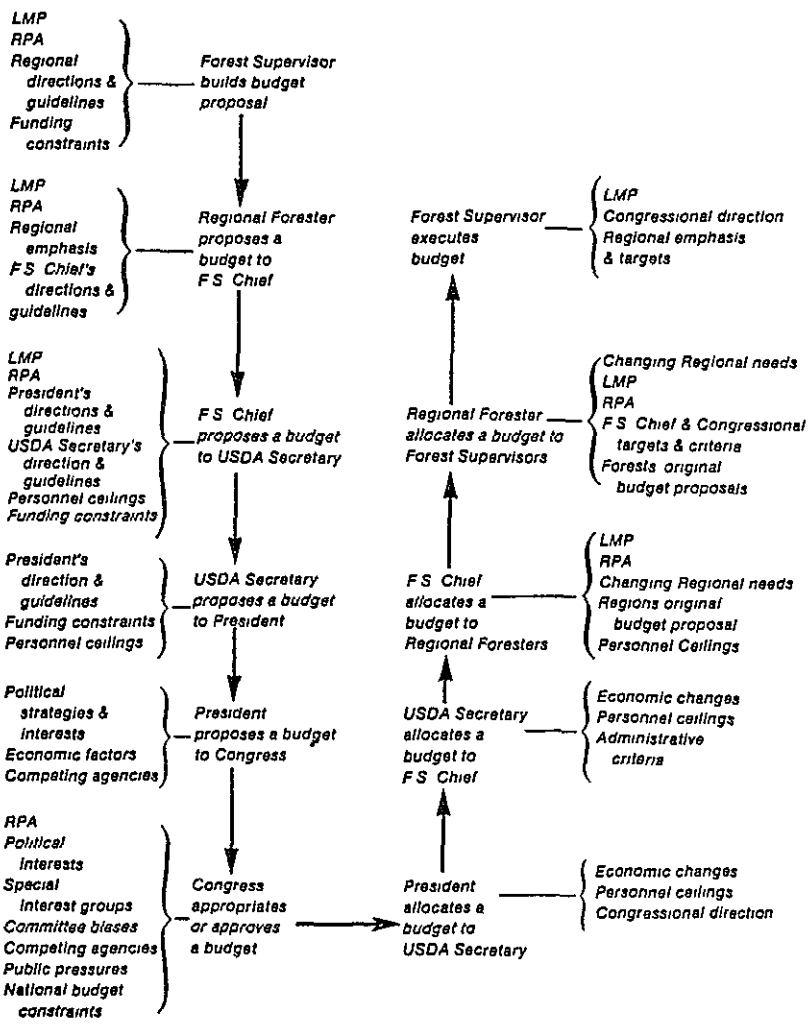
APPENDIX G.
BUDGETS AND THEIR RELATIONSHIP TO THE FOREST PLAN

The purpose of this appendix is to explain how the Forest gets its funding and what effect different funding levels will have on implementation of the Land and Resource Management Plan (Plan). The appendix explains: (1) the Federal budget process, (2) alternate sources of funding, (3) Forest 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. The following illustration highlights the chain of events a Forest budget undergoes on its way to and from Congress.

BUDGET PROCESS FLOW CHART



Note that the factors influencing the Forest's final budget are many and relatively uncontrollable from the Forest's perspective. For this reason alone the Forest Plan budget and its actual budget will never be one and the same. However, it is anticipated that the parties involved in the budget process will use the Forest Plan for guidance and long range direction in deciding budget priorities.

As an indication of the Inyo National Forest's budget trends and priorities as they have been reflected in recent budgets, the following table shows the Forest's funding by resource (function) for fiscal years 1985,1986,and 1987.

Table 1.
Inyo National Forest Budget History

Resource	1985	1986	1987	TOTAL
Fire	$1,121,000	$1,414,000	$1,055,000	$3,590,000
Timber	646,000	599,000	760,000	2,005,000
Roads	699,000	709,000	775,000	2,183,000
Recreation	2,366,000	2,190,000	2,530,000	7,092,000
Wildlife	225,000	264,000	224,000	713,000
Range	177,000	193,000	141,000	511,000
Other*	2,139,000	2,185,000	1,652,000	5,976,000
Total	**7,373,000**	**7,554,000**	**7,153,000**	

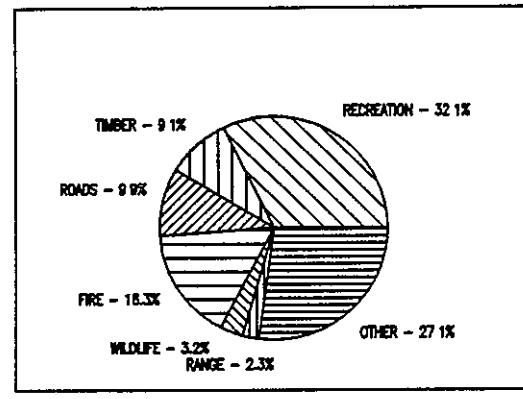
*Includes Soil, Watershed, Lands, Minerals and General Administration.

To compare the historic budgets and the Plan's budget, we have converted recent budgets and the costs for the Plan's Preferred Alternative into pie charts. The top chart displays average yearly budgets for Forest resources for the years from 1985 to 1987. The average yearly total budget for the Inyo National Forest during this time was $7,353,000. The lower chart displays the Plan's total budget of $12,062,000 by resource needs.

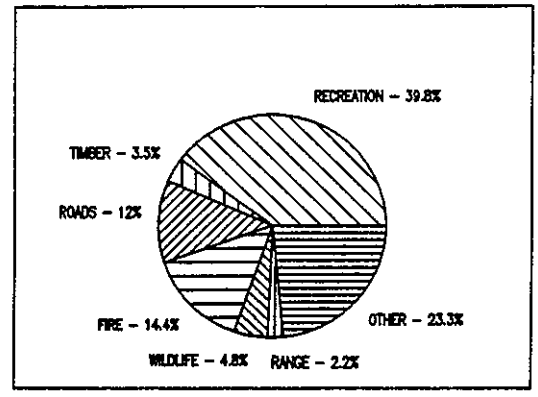
There are significant differences in resource emphasis between the two budget summaries. The largest difference is in the recreation resource, which increases from 32 percent of recent budgets to 40 percent of the Plan budget. Wildlife increases from 3 percent to 5 percent and Roads increases from 10 percent to 12 percent of the total. The largest decrease from current to Plan is in the timber resource, which is reduced from 9 percent to 3 1/2 percent of the total. Protection (fire) decreases from 16 percent to 14 percent and other resources decrease from 17 percent to 23 percent. There is a small decrease in the range percentage. It should be noted, however, that total dollars increase from current levels for all resources. The decreases are in program emphases within the multiple-resource mix of all programs on the Forest.

Historical and Planned Budgets
Percent of Total

1985 – 1987 AVERAGE BUDGET
Avg Yearly Budget $7,353,000



FOREST PLAN FIRST DECADE AVG
Avg Yearly Budget $12,062,000



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.

Cooperators and permittees often aid in accomplishing needed work. Many grazing permittees do range improvement work, such as fencing, as part of the management of their grazing allotments. The Inyo National Forest also receives $45,000 from the State of California through the "green sticker" program for the operation and maintenance of OHV (off-highway-vehicle) facilities. Many of these facilities have been planned and constructed with "green sticker" money.

The California State Department of Boating and Waterways has also funded the construction of boat ramps and associated restrooms and picnic areas on the Forest. The law enforcement program on the Forest is operated under coop agreements with local communities and the Forest is a cooperator in the Interagency Dispatch Center with the Bureau of Land Managment and the California Department of Forestry. Both programs provide for more efficient and cost-effective protection of Forest resources and visitors.

Twelve Inyo National Forest campgrounds are now operated by concessionaires. When run by concessionaires, operations are funded out of fees collected from campers. Volunteers are playing an increasingly large role on National Forests. Older American, job training, and youth programs provide volunteers to help with office work and field activities. The Forest has an adopt-a-trail program and also uses the services of 240 volunteers whose work is valued at $219,000.

Other programs on the Forest that play an important part in getting the work done include the Older American Program with 24 people and valued at $117,000 in 1987; the CCC and California Department of Corrections programs with 552 participants valued at $606,500; and the YCC program with 8 participants valued at $17,000.

The Forest is exploring ways to make additional use of user fees to fund operating programs. An example would be having proponents of projects pay for the production of the environmental documents required under the conditions of the National Environmental Policy Act.

Contributions are a source that has been used on a small scale in the past but offer much promise for the future, based on experiences in programs such as "penny pines", and the National Park Service's use of donations.

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 (MMRs), Minimum Implementation Requirements (MIRs) and Forest-wide Standard and Guidelines discussed in Chapter 2 of the EIS and Chapter 4 of the Plan. The Plan delineates which activities are appropriate for each area of the Forest. Areas managed as semi-primitive non-motorized 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 Preferred Alternative directs the maximum potential the Forest can achieve such as the amount of timber that 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 outputs that are actually produced and the number of activities and projects that will be implemented depend on available funding.

If Congress does not provide the budget levels required for Plan implementation, management intensity and production levels will be lower. Regardless of funding levels, the first priority for management activities on the Forest will be the implementation of the MMRs and MIRs contained in the Plan. These are necessary to maintain the health of the Forest. Implementation of Forest-wide Standards and Guidelines may be affected by budget levels. Generally speaking, Standards and Guidelines fall into two categories: (1) those associated with project mitigation, and (2) those that will maintain or 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 effects other resources. If the environmental analysis shows the project cannot be accomplished without violating the Forest's Standards and Guidelines 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. For example, the Forest has a goal to produce 100 acres of early seral stages of brush for wildlife by prescribed burning each year. Without appropriate funding, this may not be accomplished within the timeframe envisioned by the Plan.

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 found in Chapter 5 of the Plan. If the Forest deviates 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 an amendment. The allowed variability for each monitoring item is shown in the monitoring plan. If Forest activities fall outside of the allowed variability, an amendment or revision could be triggered.

Appendix H

Timber Supply Appendix

APPENDIX H
THE REGIONAL TIMBER SUPPLY-DEMAND SITUATION IN CALIFORNIA

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.

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 Forests 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 1).

As shown in Table 1, harvest levels fluctuate widely from year to year rather than following a smooth pattern. Year to year variations are influenced primarily by changes in housing markets and general business conditions. Only over the long term do timber inventory and growth levels limit harvests.

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 (lumber, wood, and paper) and the demand for timber harvest (stumpage), it is necessary to translate the demand for timber products into its timber harvest equivalent. Expressed in these terms, the demand for timber has been increasing, but at a slower rate than than the growth in population. While the population has been growing, per capita consumption of 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. The result of these technological innovations has been a drop in per capita consumption of timber from 390 board feet annually in 1950 to 360 board feet annually in 1983. However, 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 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.

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 are 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.

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 at current conversion efficiencies. For the U.S. economy as a whole, this would amount to a cost to home buyers of about $400 million annually.

Another effect on the urban population is through "indirect and induced" employment. While the employment effect 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 4-7 person years of employment per million board feet processed. Newer, more specialized and automated mills using readily accessible timber are at the bottom of this range, while more labor intensive operations are at the top of this range. This direct employment generates indirect employment in firms that supply goods and services to logging and milling firms and induced 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 from 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 10-20 person years per million board feet of timber harvested. These employment effect estimates were made with input-output models constructed by the Forest Service and the U.S. Department of Commerce. They reflect present technologies. As the trend toward increased timber utilization efficiency continues, employment generated per unit of timber processed is expected to decline.

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 can be maintained or increased over present levels over the 10-15 year life of the Forest Plans. Recent harvest levels and timber growth and inventory levels are shown in Table 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 and utilization standards. As timber utilization efficiencies increase, the effective supply will also be extended.

The picture changes somewhat when growth and inventory levels are divided among the major private ownership classes. Non-industrial private owners hold 38 percent of the sawtimber inventory. These ownerships 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 non-industrial private ownerships 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 non-industrial private ownerships may decline in the future.

Industrial owners hold 62 percent of the private sawtimber inventory. In contrast to non-industrial 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. However, timber growth and inventory are sufficient to maintain harvests during the 10-15 year life of the Forest Plans.

The Outlook for Timber Supplies - Imports

As discussed above, the Pacific Northwest is the primary source of imported timber products in California. 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 by Forest Service research units, timber supplies from 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. A

decline or falldown in supplies from the South is in prospect for the next century if there is no increase in investment and timber growth.

Studies conducted in Canada indicate that sawtimber growth and inventory is not expected to restrain exports to the U.S. until after the turn of the century. However, recent tariff and trade negotiations are expected to moderate Canadian exports to the U.S. over the near term.

A decline in timber harvests in the Pacific Northwest over the next 10-15 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 10-15 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.

The Outlook for Timber Supplies - National Forests

The Allowable Sale Quantities set in individual Draft 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. Non-chargeable timber (dead timber and fuelwood from either suitable or unsuitable timberlands) is in addition to the Allowable Sale Quantity. The addition of non-chargeable volume usually increases the total amount sold by a few percentage points.

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.

Total planned timber sales programmed in the individual Draft National Forest Plans in Region 5 is 1.85 billion board feet annually. This is slightly above the average annual volume sold and above the 1.6 billion board foot average annual volume harvested over the past decade. Excluding the period of severe economic recession that occurred in the early 1980s, timber output under the Plans is equal to the 1.85 billion board foot average annual harvest during the decade of the 1970s. Output under the Plans is slightly above the 1985 RPA "high bound" program sale offering goal of 1.8 billion board feet for the year 1990.

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 10-15 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% of the timber. In the Northern Interior and Sacramento areas, National Forests supply 50% of the timber. In the San Joaquin area they supply 70%.

Timber outputs under the Forest Plans are lower than average annual sale levels over the last eight years in the Northern Interior area and higher in all other areas. This means that adverse impacts on local economies resulting from the Plans will be centered in Northeastern California.

Timber from the Inyo National Forest has historically been trucked to mills in the Northern Interior and San Joaquin timber supply areas. A more detailed description of those areas follows.

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). Timber outputs under the Forest Plans are below average sale levels during the last eight 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. This is the equivalent of a 35-year supply (not counting growth) at recent harvest rates. Harvests on industrial lands may increase slightly because of recent ownership changes.

There are 22 sawmills with a combined 8-hour shift capacity of 2.5 million board feet in the Northern Interior area. This means that mill capacity is somewhat above the available sawtimber supply on an annual basis.

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. Timber outputs 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. This is 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 10-15 year life of the Forest Plans.

There are 14 sawmills with a combined 8-hour shift capacity of 1.8 million board feet in the San Joaquin area. This means that mill capacity is over 60 percent above the available sawtimber supply on an annual basis.

Timber from the Inyo National Forest makes -up less than 1 percent of the supply available to mills the the San Joaquin and Northern Interior market areas. However, because this timber is available for winter logging, it serves a unique role in the timber economy. Individual timber purchasers are able to keep logging crews employed during the winter months because of the Inyo's contribution to the timber supply. The relatively high prices received for timber sold from the Inyo is an indicator of the importance of its timber to individual purchasers and their employees.

Table 1.
California Timber Harvests by Ownership, 1952-86
(billion board feet)

Year	Private	Other Public	National Forest	Total
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			1.96	

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

Table 2.
Timber Harvest, Growth, and Inventory on Private Land in California

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
Non-industrial 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.

Table 3.
Average Annual National Forest Timber Sales Compared to Allowable Sale Quantities in Draft Forest Plans

Timber Supply Area	National Forest	1979-86 Average Volume Sold, MMBF	Forest Plan Allowable Sale Quantity 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	265.0
	Tahoe	141.7	178.7
	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	10.0
	San Bernardino	8.8	5.2
So.Calif.	Los Padres	1.3	3.8
	R5 Total	1,747	1,855

(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.

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Appendix J

Glossary

APPENDIX J. GLOSSARY

A

AMB: The Forest Plan Alternative which emphasizes wildlife habitat with a secondary emphasis on expansion of developed recreation.

AMC: This is a Forest Plan Alternative which has been eliminated. It recommends all Further Planning Areas for wilderness designation.

AMN: See Amenities Alternative.

AMP: See Allotment Management Plan.

AMS: See Analysis of the Management Situation.

AOP: See Annual Operating Plan.

APCD: Air Pollution Control District.

AQRVs: See Air Quality Related Values.

ASQ: See Allowable Sale Quantity.

AUM: See Animal Unit Month.

Acre-foot: The amount of water or sediment that would cover one acre to a depth of one foot (43,560 cubic feet; 326,000 gallons).

Administrative Cost: Costs of required general administration which are prorated over fixed, variable, and investment costs.

Administrative Facilities: Those facilities, such as ranger stations, work centers, and cabins, which are used by the Forest Service in managing the National Forest.

Age Class: One of the intervals, usually 10 to 20 years, into which the age range of vegetation is divided for classification or use.

Air Quality Related Values (AQRVs): A feature or property of an area that is affected in some way by air pollution. Identified values are visibility, odor, flora, fauna, soil, water, geologic feature, and cultural resources.

Allotment: See Range Allotment.

Allotment Management Plan (AMP): A cooperative plan between the Forest Service and the range permittee which sets forth the agreed upon management scheme for the allotment. Besides grazing activities, the plan can cover other resources, such as soil, wildlife, fisheries, and riparian areas.

Allowable Sale Quantity (ASQ): The maximum quantity of timber that may be sold from land capable, available, and suitable for timber production for a time period; usually expressed on an average annual basis.

Alluvial Fan: A geologic feature consisting of rock and soil deposited by running water at the base of a steep slope in the shape of an inverted cone.

Amenity (Amenity Value): A resource for which monetary market values have not been (or cannot be) established; also called a non-priced value.

Amenities Alternative (AMN): The Forest Plan Alternative which maximizes amenities with little regard for the effects on commodity outputs. Wilderness, wildlife, and primitive and semi-primitive dispersed recreation are emphasized.

Analysis of the Management Situation (AMS): A step in the Forest planning process in which the Forest's ability to supply goods and services in response to society's demand for those goods and services is determined.

Animal Unit Month (AUM): The amount of forage required to support a mature cow for one month. (Region 5 uses 1000 lbs./month or 26 lbs./day.)

Annual Operating Plan (AOP): The cooperative plan between the Forest Service and the grazing permittee which sets forth the agreed upon management of the allotment on a seasonal basis.

Arterial Roads: See Roads.

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 by consumers. In Forest planning the term assigned values 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.

B

BACTs: See Best Available Control Techniques.

BLM: Bureau of Land Management, U.S. Department of Interior.

BMPs: See Best Management Practices.

BSS: See Base Sale Schedule.

Background Level (Background, Natural Background): The ever-present environmental conditions or effects above which a phenomenon must manifest itself in order to be detected.

Base Sale Schedule (BSS): The timber sale schedule in which 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. This planned sale and harvest for any decade must not be not greater than the long-term sustained yield capacity of the land.

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: The total value of an output or other outcome.

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 the present time. (Also see Discounting.)

Best Available Control Techniques (BACTs): An emission limitation for air quality subject to the regulations of the Clean Air Act.

Best Management Practices (BMPs): Management actions that are designed to maintain water quality by preventive rather than corrective means.

Bitterbrush: A species of shrub considered palatable and nutritious for both mule deer and domestic livestock.

Board Foot: The amount of wood contained in an unfinished board one inch thick, twelve inches long, and twelve inches wide.

C

CAS: Capable, Available and Suitable land for timber production.

CDF: California Department of Forestry.

CDFG: California Department of Fish and Game.

CEE: See Cost-Efficiency Alternative.

CEQ: See Council on Environmental Quality.

CEQA: See California Environmental Quality Act.

CFR: Code of Federal Regulations. Detailed documentation of federal laws.

CMAI: See Culmination of Mean Annual Increment.

CNDDB: California Native Diversity Data Base.

CNPS: California Native Plant Society.

COWFISH: A computer model designed to analyze the condition of riparian areas in relation to past and current livestock grazing management and to estimate the compatibility of grazing with associated aquatic resources.

CRP: See Coordinated Resource Planning.

CUR: See Current Program.

Caldera: A bowl-shaped geologic feature representing the collapse of a volcanic mountain after an eruption.

California Environmental Quality Act (CEQA): Following the passage of NEPA, the California State Legislature passed an Act in 1970 to declare state policy which will ensure the long-term protection of the environment. The Act will encourage the development and maintenance of a high quality environment now and in the future; provide the people of California with clean air and water, enjoyment of aesthetic, natural, scenic, and historic environmental qualities, and freedom from pollution; and prevent the elimination of fish or wildlife species due to man's activities.

Canopy: The more or less continuous cover of leaves and branches collectively formed by the crowns of adjacent trees in a shrub stand or forest.

Capability: The potential of the land to produce resources and supply goods and services under a set of management practices and at a given level of management intensity. Capability depends upon site conditions such as climate, soils, and geology, as well as the application of management practices such as siviculture.

Capital Investment: Investment in facilities such as roads and structures with specially appropriated funds.

Class I Properties: Archaeological or historic sites that have been determined eligible for or nominated to the National Register of Historic Places.

Class II Properties: Archaeological or historic sites that have not been evaluated against the eligibility criteria (36 CFR 604) for inclusion on the National Register of Historic Places.

Class III Properties: Archaeological or historic sites that have been found to be not eligible for inclusion on the National Register of Historic Places.

Clearcutting: Harvesting of all trees in one area for the purpose of creating a new, even-aged stand. The area harvested may be a patch, stand, or strip.

Collector Roads: See Roads.

Commercial Species: Tree species suitable for industrial wood products.

Commodity (Commodity Value): A resource product for which a monetary value has been established; also called a priced benefit.

Compartment: A unit of forested land, usually between 3,000 and 15,000 acres in size, defined by natural and manmade features and used to facilitate timber planning.

Concentrated Recreation Area: A land area that currently recieves, or could (if developed) potentially receive high-density recreation use.

Condition Class: Description of the existing forest in terms of size, stock density, and age.

Confinement: Restricting fire within determined boundaries established either prior to the fire, during the fire, or in an escaped fire situation analysis. The normal tactic is surveillance only.

Constraint: A limitation; action which cannot be taken or which must be taken.

Consumptive Use: Use of a resource that reduces the supply.

Containment: Surrounding a fire, and any spot fires therefrom, with control line, as needed, which can reasonably be expected to check the fire's spread under prevailing and predicted conditions. The normal tactic is indirect attack and burn to human-made or natural barrier with little or no mop-up.

Contingency Level: A priority setting and decision-making method which takes into account fire situation factors that may significantly affect national, Regional, or Forest fire situations or individual fire response actions.

Control: To complete the control line around a fire, any spot fires therefrom, and any interior islands to be saved, burn 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. The normal tactic is direct attack on the fire, if possible, and mop-up.

Coordinated Resource Planning (CRP): A process that involves all agencies, special interests or individuals concerned with the management of a specific project, resource or issue.

Corridor: A linear strip of land in which existing or planned transportation and utility facilities are or will be located.

Cost: The price paid or what is given up in order to acquire, produce, accomplish, or maintain anything. (See Economic Cost.)

Cost-Effective: Achieving a specified level of outputs under given conditions for the least cost.

Cost-Efficiency Alternative: This Forest Plan Alternative maximizes cost efficiency with a mix of land allocations and management practices available on the Inyo National Forest.

Cost-Efficiency: A measure of how productive an input is in producing outputs. Measured by Present Net Value (PNV) in Forest planning. (See Economic Efficiency.)

Council on Environmental Quality (CEQ): An advisory council to the President established by the National Environmental Policy Act of 1969. The CEQ reviews federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters.

Cover: Vegetation used by wildlife for protection from predators and weather conditions, especially during reproduction.

Cubic Foot: The amount of timber equivalent to a piece of wood measuring one foot by one foot by one foot (6.5 board feet on the Inyo National Forest).

Cubic Foot per Second (cfs): Unit measure of streamflow or discharge, equivalent to 449 gallons per minute or about two acre-feet per day.

Culmination of Mean Annual Increment (CMAI): The point where the average annual growth of a stand of timber no longer increases.

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 to sites, structures, buildings, districts, and objects associated with or representative of people, cultures, and human activities and events.

Current Program (CUR): The No Action Alternative. This Forest Plan Alternative represents the condition expected to exist in the future if current managemment direction continued unchanged.

D

DBH: See Diameter Breast Height.

DEIS: Draft Environmental Impact Statement. (See Environmental Impact Statement.)

DWP: City of Los Angeles, Department of Water and Power.

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.

Dependent Species: A species for which a habitat element (snags, vegetative type) is deemed essential for the species to occur regularly or to reproduce.

Developed Recreation Site: A relatively small, distinctly defined area where facilities are provided for concentrated public use (campgrounds, picnic areas).

Development Scale: A predetermined scale for recreation site development which guides the degree of site modification and kind of facilities to be installed as shown below:

Recreation Opportunity Spectrum Class	Development Scale	Levels of Site Modification
Primitive	1	Minimum site modification. Rustic or rudimentary improvements designed for protection of the site rather than comfort of the users. Use of synthetic materials excluded. Minimum controls are subtle. No obvious regimentation. Spacing informal and extended to minimize contacts between users. Motorized access not provided or permitted.
Semi-Primitive Motorized and Non-Motorized	2	Little site modification. Rustic or rudimentary improvements designed primarily for protection of the site rather than the comfort of the users. Use of synthetic materials avoided. Minimum controls are subtle. Little obvious regimentation. Spacing informal and extended to minimize contacts between users. Motorized access provided or permitted. Primary access over primitive roads. Interpretive services informal, almost subliminal.
Roaded Natural and Roaded Modified	3	Site modification moderate. Facilities about equal for protection of site and comfort of users. Contemporary and rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about 3 family units per acre. Primary access may be over high standard roads. Interpretive services informal, but generally direct.
Rural	4	Site heavily modified. Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials. Extensive use of artificial surfacing of of roads and trails. Vehicular traffic control usually obvious. Primary access usually over paved roads. Development density 3-5 family units per acre. Plant materials usually native. Interpretive services often formal or structured.
Urban	5	High degree of site modification. Facilities mostly designed for comfort and convenience of users and usually include flush toilets; may include showers, bathhouses, laundry facilities, and electrical hookups. Synthetic materials commonly used. Formal

walks or surfaced trails. Regimentation of users is obvious. Access usually by high-speed highways. Development density 5 or more family units per acre. Plant materials may be foreign to the environment. Formal interpretive services usually available. Designs formalized and architecture may be contemporary. Mowed lawns and clipped shrubs not unusual. This category applies to private lands.

Diameter Breast Height (DBH): The diameter of a tree measured 4.5 feet from the ground.

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.)

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 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 between benefits and costs occurring at different points in time.

Dispersed Recreation: Outdoor recreation which occurs outside of constructed and maintained recreational facilities (scenic driving, hunting, backpacking, nordic skiing).

District Ranger: The official responsible for administering the National Forest System Lands on a Ranger District.

Diversity: The distribution and abundance of different plant and animal communities and species within an area.

Diversity Index: A mathematical expression of the relative degree of wildlife habitat diversity per unit of area: $DI = \frac{TP}{2 / \overline{A \times pi}}$

where TP is the total perimeter of an area, plus any browsable edge within the area in meters or feet, A is the area in square meters or square feet, and pi is 3.1416.

E

EA: See Environmental Assessment.

EIC: See Ending Inventory Constraint.

EIS: See Environmental Impact Statement.

EPA: Environmental Protection Agency.

EPP: See Erosion Prevention Plan.

EVC: See Existing Visual Condition.

Economic Cost: Total fixed and variable costs for inputs, including costs incurred by other public and private parties, opportunity costs, and cost savings.

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.

Endangered Species: Plant or animal species identified by the Secretary of the Interior and listed in the Federal Register as in danger of extinction throughout all or a significant portion of its range.

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.

Environmental Analysis: An analysis of alternative actions and their predictable short- and long-term environmental consequences.

Environmental Assessment (EA): A concise public document required by the regulations implementing the National Environmental Policy Act that briefly provides sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.

Environmental Consequences (Effects or Impacts): The physical, biological, social, and economic results of implementing a given alternative.

Environmental Impact Statement (EIS): A statement of the environmental effects which would be expected to result from proposed alternative management actions.

Erosion: The detachment and movement of soil from the land surface by wind, water, or gravity.

Erosion Prevention Plan (EPP): An integrated erosion plan which states the Best Management Practices necessary to protect the soil and water resources on ski areas. The techniques, the scheduling of work, and the priorities for treatment are all addressed in the plan.

Escarpment: A steep land form characterized by a face abruptly terminating high lands.

Even-Aged Management: Management of forest stands that results in trees of essentially the same age growing together. The following methods produce even-aged stands:

Clearcutting: The removal, in a single cut, of all trees in a stand larger than seedlings.

Shelterwood Cutting: The removal of all trees in a series of two or more cuts over a period of not more than 20 years.

Seed Tree Cutting: Similar to clearcutting, except that a few of the better trees of the desired species are left scattered over the area to provide seed for regeneration.

Even-Aged Stand: A forest stand composed of trees having no or relatively small differences in age.

Existing Visual Condition (EVC): A description of the degree to which the natural landscape has already been altered.

F

FEIS: Final Environmental Impact Statement (See Environmental Impact Statement.)

FERC: Federal Energy Regulatory Commission.

FIL: See Fire Intensity Level.

FLPMA: Federal Land Policy and Management Act.

FLW: The benchmark which maximizes Present Net Value (PNV) for non-market resources.

FPA: Further Planning Area. (See Further Planning.)

FSH: Forest Service Handbook.

FSM: Forest Service Manual.

FVC: See Future Visual Condition.

FY: Fiscal Year--October 1 through September 30.

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.

Fire Intensity Level (FIL): A number on a scale of one to six (one being the lowest), which reflects the rate of heat release (BTU/second) per unit of fire front (in feet).

Fixed Cost: A cost committed for the planning period. In Forest planning, the total cost of the minimum level benchmark.

Forage: All browse and herbaceous plants that are available to feed livestock or wildlife.

Forb: Any herbaceous plant other than grasses or grass-like plants.

Foreground, Middleground, Background:

Foreground - the portions of a view between the observer and up to 1/4 or 1/2 mile distance.

Middleground (middle distance) - the space between the foreground and the background; the area located from 1/4-1/2 to 3-5 miles from the viewer.

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.

Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA): An Act of Congress requiring the preparation of an assessment of the nation's renewable resources and a program for their management. Forest planning is a part of this national planning process.

Forest Highways: A designated forest road under the jurisdiction of, and maintained by, a public authority that is subject to the Highway Safety Act. Forest Highways are designated, as such, where the use and development of National Forest System lands affect the public road system necessitates Federal investments to ensure these roads are safe and adequate.

Forest Supervisor: The official responsible for administering the National Forest System lands in a Forest Service administrative unit (one or more National Forests).

FORPLAN: A linear programming model used for developing and analyzing Forest planning alternatives.

Fuels: Any material capable of sustaining or carrying a forest fire, usually natural material both live and dead.

Fuelwood: Wood cut into short lengths for burning.

Further Planning: A category into which certain roadless areas on the Forest were placed by the RARE II study and in which they were retained by the California Wilderness Act of 1984. Recommendations for the management (wilderness or nonwilderness) of Further Planning Areas will be made in the Forest plan.

Future Visual Condition (FVC): Describes the projected appearance of the landscape (from natural to altered) under each alternative by the fifth decade.

G

GAWS: See General Aquatic Wildlife System.

Game Species: See Harvest Species.

General Aquatic Wildlife System: A combined aquatic data base and information system. It is the quantitative method used to inventory, monitor, describe, and predict fisheries habitat condition and vulnerability from existing to potential land uses.

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 may not have a specific date for completion.

Goods and Services: The various outputs, including onsite uses, produced by forest and rangeland renewable resources.

Grazing: Consumption of forage by animals; typically used to describe domestic livestock use (under permit) of National Forest land.

Grazing Allotment: See Range Allotment.

Grazing Permittee: See Range Permittee.

Groundwater: Subsurface water in the part of the ground that is wholly saturated.

Group Selection: The cutting method in which trees are removed periodically in small groups resulting in openings that do not exceed an acre or two in size. The result is an uneven-aged stand.

H

H2O: The benchmark which maximizes water yields for five decades.

HVDC: High Voltage Direct Current.

Habitat: The sum of environmental conditions of a specific place that is occupied by an organism, a population, or a community.

Habitat Capability Model: A set of habitat factors determined necessary to support a given wildlife species or group of species.

Hacking: A method of gradually releasing birds of prey into the wild.

Harvest Species: Species of animals or fish that are hunted or fished for human consumption.

Herbicide: A substance used to inhibit or destroy plant growth.

Holding Area: See Staging Area.

I

ID Team: See Interdisciplinary Team.

IPM: See Integrated Pest management.

Inputs: Land, labor, and capital required to produce outputs. Inputs are generally represented by activity costs.

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 wherein pests, their impacts, and management are considered an integral part of resource management planning and decision-making.

Intensity Level: See Fire Intensity Level.

Interdisciplinary Team (ID Team): A group of individuals with different training who solve a problem or perform 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 Streams: Streams that do not contain water year-round.

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.

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.

K

K-V Funds: Funds collected from timber sales under the Knutson-Vandenberg Act of 1930 to be used for reforestation, timber stand improvement, and to protect and improve the future productivity of renewable resources on timber sale areas.

KGRA: Known Geothermal Resource Area: On the Inyo, this term refers to the Mono-Long Valley KGRA located on the northern part of the Forest, north and east of Mammoth Lakes and south of Mono Lake.

Key Fawning Area: An area important for mule deer during the fawning season (early summer). It typically includes good vegetative cover to hide fawns from predators and protect them from severe weather.

Key Winter Range: An area important for mule deer during the winter months. It typically includes palatable and nutritious shrub species on lands mostly free of snow during the winter.

L

LBU: This Forest Plan Alternative was eliminated. It estimates the expected outputs and services that could be provided in the future if the 1982 budget were cut by 25%.

LTSYC: See Long-term Sustained Yield Capacity.

Landline Location: To locate, survey, mark, and post the boundaries of National Forest System lands.

Landownership Adjustment: The transfer of the ownership of lands by land exchange, land purchase, donations or other methods.

Lease Blocks I and II: Land units that have been leased for geothermal exploration and development; located north of Mammoth and south of June Lake, both east and west of Highway 395. (See map in Chapter III of the EIS under Minerals: Leasable.)

Lek: Sage grouse strutting grounds used during the mating season for courtship displays.

Lifestyle: The characteristic way people live, indicated by consumption patterns, work, leisure, expressed values, and other behavior.

Local Roads: See Roads.

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 intensity of management consistent with multiple-use objectives.

Low Standard Service: A level of recreation management (including maintenance and services) prescribed when recreation costs are reduced in an alternative.

M (MM): As a prefix to a unit of measure, M indicates thousand; MM indicates million. Common examples are:

MAUM - thousand animal unit months

MBF (MMBF) - thousand (million) board feet

MCF (MMCF) - thousand (million) cubic feet

MRVD (MMRVD) - thousand (million) recreation visitor days

M(MM)$ - thousand (million) dollars

M acres - thousand acres.

MA: See Management Area.

MBNFSA: Mono Basin National Forest Scenic Area.

MCWD: Mammoth County Water District.

MIS: See Management Indicator Species.

MIR: See Minimum Implementation Requirements.

MKT: A Forest Plan Alternative which was eliminated. It emphasized high level outputs of market resources.

MKV: The benchmark which maximizes Present Net Value (PNV) for market value resources.

MLV: The benchmark which emphasizes Minimum Level Management.

MMR: See Minimum Management Requirement.

Mammoth/June: The geographic area bounded by U.S. 395 on the east; State Route 203 on the south; the John Muir and Ansel Adams Wildernesses on the west; and the ridgeline of the June Lake complex on the north.

Management Area (MA): A contiguous area of land used in planning, to which one or more prescriptions are applied. Management areas do not vary between alternatives; however, the prescriptions applied to them do vary.

Management Concern: A management problem requiring resolution.

Management Direction: A statement of multiple use and other goals and objectives, the management prescriptions, and the associated standards and guidelines for attaining them.

Management Emphasis: The primary focus of a multiple-use management prescription or of an alternative.

Management Indicator Species (MIS): A wildlife species whose population and trend in a certain habitat type indicates the population and trend of other species that are also dependent on that habitat type.

Management Intensity: The management practice or combination of management practices and their associated costs designed to obtain different levels of goods and services.

Management Prescription: Management practices selected and scheduled for application on a specific area to attain multiple-use benefits and other goals and objectives.

Market Outputs: Outputs normally exchanged in markets as evidenced by transactions. Timber, range, developed recreation, and minerals are market outputs produced on the Inyo.

Maximum Modification (VQO): See Visual Quality Objectives.

Mean Annual Increment: The average yearly growth of a tree, calculated by dividing the volume of the tree by its age.

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.

Mineral Production: Extraction of 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.

Minerals, Leasable: Minerals which are developed (explored, mined, extracted, etc.) by a permit or lease, in contrast with mineral 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, and deposits of sulfur in Louisiana and New Mexico. Locatable minerals on acquired land are leasable.

Minerals, Locatable: Minerals on public domain lands which are mined and processed to recover intrinsically valuable substances such as gold and copper and 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. Developed through a claims location and patent process. Locatable minerals on acquired land are leasable.

Minerals, Salable: Minerals that occur in high-volume, low-unit-value deposits and have no distinct or special economic value over similar materials. Disposal is authorized through a sales system, by the Materials Act of 1947. Examples are sand, gravel, stone, and common clay.

Minimum Implementation Requirements (MIR): The management requirements which are necessary to ensure a minimum level of public acceptance.

Minimum Management Requirements (MMR): Constraints or activities necessary to maintain viable wildlife populations and to prevent permanent impairment of the productivity of the land.

Mining Claims: That portion of the public estate held for mining purposes in which the right of exclusive possession of locatable mineral deposits is vested in the locator of a deposit.

Mitigate: Actions to avoid, minimize,, reduce, eliminate, or rectify the adverse impacts of a management practice.

Modification (VQO): See Visual Quality Objectives.

Monitoring and Evaluation: The periodic evaluation on a sample basis of management practices prescribed by the Forest plan, to determine how well objectives have been met, how closely management standards have been applied, and whether actual environmental consequences are similar to those predicted.

Multiple Use: The management of all 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.

N

NPB: See Net Public Benefit.

NEPA: See National Environmental Policy Act.

NFMA: See National Forest Management Act.

NFMAS: See National Fire Management Analysis System.

NFS: See National Forest System Land.

NON: The benchmark which maximizes Present Net Value (PNV) with a recommendation that no Further Planning Areas become wilderness.

NNL: National Natural Landmarks. (See National Registry of Natural Landmarks.)

NRT: See National Recreation Trail.

National Environmental Policy Act (NEPA): The 1969 Act of Congress that represents a basic national charter for protection of the environment.

National Fire Management Analysis System (NFMAS): A broad process to assist fire managers in fulfilling their planning and analysis roles. The system consists of: (1) Fire Management Analysis, and (2) Budget analysis.

National Forest Management Act (NFMA): A 1976 Act of Congress that amends the 1974 Forest and Rangeland Renewable Resources Planning Act (RPA). NFMA requires the preparation of Regional and Forest plans and guides their development.

National Forest System (NFS) Land: Lands administered by the U.S. Department of Agriculture, Forest Service.

National Recreation Trail (NRT): A trail designated by the Secretary of the Interior or the Secretary of Agriculture under the National Trails System Act. National recreation trails are designed to provide a variety of outdoor recreation uses in or reasonably accessible to urban areas.

National Register of Historic Places: A listing maintained by the U.S. Department of Interior, National Park Service of areas that have been designated as historically significant. The National Register includes places of local and state significance, as well as those of value to the nation in general.

National Registry of Natural Landmarks: A register of areas possessing such exceptional values or qualities for illustrating or interpreting the natural heritage of our nation that they are considered to be of national significance. Some examples are significant natural landforms, land or aquatic ecosystems, and geologic formations.

National Wild and Scenic River System: Rivers with outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values and 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 (1964) and subsequent wilderness designations irrespective of the department or agency having jurisdiction.

Net Public Benefit (NPB): The overall 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.

Nondeclining Yield: Timber scheduled for harvest so that any given decade's production does not fall below the previous decade's production.

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, water. Although not normally exchanged in markets, the Forest Service calculates and assigns monetary values to these outputs for analysis purposes.

O

OHV: See Off-Highway Vehicle.

OSV: See Over-Snow Vehicle.

Objective: A time-specific statement of measurable results that respond to pre-established goals.

Objective Function: A term used in linear programming referring to the item to be maximized (or minimized) in the problem's solution; such as maximize PNV, maximize timber.

Off-Highway Vehicle (OHV): Vehicles that can be operated off of constructed roads. Examples include 4-wheel drives, dune buggies, and some motorcycles.

Over-Snow Vehicle (OSV): Over-snow tracked or ski vehicle.

Older Seral Stages: Age classes of trees or shrubs that have passed the period of young, vigorous growth. Many wildlife species are dependent on the older seral stages of forested environments; these stages include large trees generally exceeding 50 feet in height with a total tree canopy of 40 percent or greater. Commercial timber stands are typically harvested before reaching older seral stages.

Opening: An area of land from which timber has been harvested (generally using even-aged management). The maximum size of openings is 5 to 40 acres for forest types on the Inyo. 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.

Outputs: Goods, services, or on-site uses produced from forest and rangeland resources.

Overstory: That portion of the trees in a forest which forms the upper or uppermost layer.

P

P: Primitive. (See Recreation Opportunity Spectrum.)

PAOT: See Persons-At-One-Time.

PILT: Payment in Lieu of Taxes.

PNV: See Present Net Value.

PRO: An Alternative which has been eliminated from the Forest Plan. This Alternative's objective was to determine the Forest's ability to meet timber targets from the Region's high-productivity Alternative.

PRF: See Preferred Alternative.

PSD: See Prevention of Significant Deterioration.

PSW: Pacific Southwest (Region 5 of the Forest Service)

Partial Retention (VQO): See Visual Quality Objectives.

Perennial Stream: A stream that flows throughout the year and from source to mouth.

Permittee: An individual or organization that conducts activities on National Forest land under the stipulations of a Forest Service permit. Examples of permitted activities are grazing, ski area operation, resort operation, and hydroelectric plant operation.

Persons-At-One-Time (PAOT): The unit of measure for recreation capacity defined as the number of people that can use a facility or area at one time.

Physiographic Province: A region having a particular pattern of relief features or land forms that differs significantly from that of adjacent regions. The Inyo National Forest lies in two physiographic provinces--the Sierra Nevada and the Great Basin.

Piagi: The larval or caterpillar stage of the Pandora moth during which time it defoliates Jeffrey pine trees by eating the needles. Piagi is one of the native foods of the Paiute/Shoshoni People.

Planning Period: One decade. The time interval within the planning horizon that is used to show incremental changes in yields, costs, effects, and benefits.

Planning Records: A system that documents data collections, analyses, interdisciplinary team decisions, and activities that result from the process of developing a Forest Plan, revision, or significant amendment.

Plantation: A stand of trees resulting from planting or artificially seeding an area.

Preferred Alternative (PRF): The Forest Plan Alternative which emphasizes a mixture of commodity and amenity resource outputs to optimize Net Public Benefit (NPB).

Prescribed Fire: Intentional use of fire under predetermined weather and fuel conditions to achieve specific objectives such as rejuvenating or type-converting vegetation.

Prescription (Rx): The set of management practices applied to a specific area to attain specific objectives. Region 5 distinguishes between FORPLAN prescriptions and management prescriptions. FORPLAN prescriptions are sets of "pure" management activities without spatial allocation or standards and guidelines. Management prescriptions are written as a result of allocating FORPLAN solutions to specific lands areas (Management Areas) and imposing standards and guidelines. (See also Management Areas.)

Present Net Value (PNV): The difference between the value of discounted benefits derived from all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area.

Preservation (VQO): See Visual Quality Objectives.

Prevention of Significant Deterioration (PSD): A planning and management process of the Clean Air Act for allocation and use of air resources.

Productive Reserved: A category of land that is capable of producing commercial timber products but has been removed from the managed timber base by congressional or administrative designation (such as Wilderness or Research Natural Areas).

Public Issue: A subject or question of widespread public interest identified through public participation relating to management of National Forest System lands.

R

R: Rural. (See Recreation Opportunity Spectrum.)

RARE II: See Roadless Area Review and Evaluation II.

REA: Rural Electric Association.

RGN: The benchmark which maximizes domestic livestock grazing for five decades.

RIM: See Recreation Information Management.

RM: Roaded Modified. (See Recreation Opportunity Spectrum.)

RN: Roaded Natural. (See Recreation Opportunity Spectrum.)

RNA: See Research Natural Area.

ROS: See Recreation Opportunity Spectrum.

RPA: The Forest and Rangeland Renewable Resources Planning Act of 1974. Also refers to the national assessment and recommended program developed every five years to fulfill the requirements of the Act.

RPA Program: The national direction (under RPA) for long-range management of renewable resources on National Forest System lands. This direction serves as the basis for the Regional targets assigned to each Forest.

RVD: See Recreation Visitor Day.

Rx: See Prescription.

Range:

Primary range - includes areas which are readily accessible, have available water and will be used before livestock significantly graze other areas.

Secondary range - areas less preferred by livestock which will ordinarily not be grazed significantly until the primary range has been used.

Suitable - land that is or can be made accessible to livestock, that produces forage or has inherent forage-producing capabilities, and that can be grazed on a sustained yield basis under given management goals.

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 (such as trees) not suitable for livestock consumption.

Unsuitable - area that should not be grazed by livestock because of unstable soils, steep topography, or inherent low potential for forage production.

Range Allotment: An area designated for grazing a prescribed number and kind of livestock.

Range Permittee: An individual who has been granted written permission (a grazing permit) to graze livestock for a specific period on a range allotment.

Ranger District: An administrative unit of a National Forest supervised by a District Ranger who reports to the Forest Supervisor.

Rare Species: One that, although not presently threatened with extinction, is in such small numbers throughout its range that it may be endangered if its environment worsens; the "rare" category is a State category, not a federal one.

Reach: A continuous unbroken stretch of a stream with homogeneous characteristics; an extremity of a stream; a specified portion of a stream.

Recovery: The achievement of viable populations of threatened or endangered plant or animal species.

Recreation Experience Level: A classification (using a scale of 1 for primitive to 5 for modern) of the level of development in camp and picnic sites pertaining to the types of recreation opportunities and modifications in the environment that can be expected.

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 three miles or more from conventional (two-wheel drive) roads, generally 5,000 acres or more in size, with an essentially unmodified natural environment. Users will probably experience a high degree of isolation, closeness to nature, tranquility, and self-reliance.

b. Semi-Primitive Non-Motorized (SPNM) - An area more than 0.5 mile but less than 3 miles from conventional roads, 2,500 to 5,000 acres in size, with only subtle modifications of an otherwise natural setting. Users will have experiences similar in kind (but to a lower degree) to those found in the Primitive ROS class.

c. Semi-Primitive Motorized (SPM) - Same as Semi-Primitive Non-Motorized but with motorized use of primitive roads and trails. Users would have experiences similar to those in the SPNM class, with the addition of motor vehicles.

d. Roaded Natural (RN) - An area accessible by conventional roads; resource modifications and structures are evident but harmonize with the natural environment. Users would experience isolation and interaction with other parties in roughly equal proportions.

e. Roaded Modified (RM) - Same as Roaded Natural, except that resource modifications and structures are more evident and the probability of interaction with other parties would be much higher.

f. Rural (R) - The setting is accessible by conventional road and substantially modified with structures or other cultural modifications. Users would experience much interaction with others; there would be little opportunity for isolation.

g. Urban (U) - The setting is strongly dominated by structures, highways and streets. Users would not consider this setting attractive for conventional forest recreation. This category applies to privately-owned land on the Forest.

Recreation Visitor Day (RVD): Twelve hours of recreation use in any combination of persons and hours such as one person for twelve hours or three persons for four hours.

Recruitment: Replenishment. In terms of wildlife biology, to achieve successful reproduction or to replenish a supply of habitat elements, such as snags or down logs.

Reforestation: Reestablishing a crop of trees on forest land by natural or artificial methods.

Regeneration: Same as reforestation.

Regeneration Cutting: Harvesting timber stands so that new crops can be planted. This method is usually applied to stands which cannot economically be managed for commercial production because of poor stocking, health, thrift, quality, or species composition.

Region 5: The Pacific Southwest Region of the Forest Service, including primarily the National Forests in California, with small additional acreage in Oregon and Nevada.

Regional Forester: The official responsible for administering a single Region of the Forest Service.

Regulation Classes:

Regulation Class I silvicultural prescriptions are even-aged management prescriptions for existing timber stands with full timber yields expected. These represent harvest regimes on lands not otherwise constrained that result in optimum timber production in volume and/or value. Practices in this class are:

a. Clearcutting without thinning (nonintensive harvest in FORPLAN)

b. Shelterwood without thinning (nonintensive harvest in FORPLAN)

c. Clearcutting with thinning(s) prior to harvest.

Regulation Class II silvicultural prescriptions address "special conditions" for existing timber stands. Reduced timber yields would be expected. These represent harvest regimes on lands designated to meet nontimber objectives that result in a mean rotation longer than optimum for timber production. Generally other values are accounted for by constraints on harvest rates, not by modifications to yield tables; the exceptions are group selection (item e) and specialized prescriptions (item f). Practices in this class are:

a. Clearcutting without thinning (nonintensive harvest in FORPLAN)

b. Shelterwood without thinning (nonintensive harvest in FORPLAN)

c. Clearcutting with thinning(s) prior to harvest

d. Shelterwood with thinning(s) prior to harvest

e. Group selection (harvest openings less than two acres in size) or single tree selection

f. Specialized prescriptions that contain unique yield tables and/or constraints on harvest rates such as deer winter range prescriptions with wider spacing and no release.

Regulation Class III prescriptions are for existing stands which are equivalent to the former "marginal timber yield" categorization. Timber outputs resulting from prescriptions in this class will be regulated as a separate, non-interchangeable component of the allowable sale quantity. Practices in this class are:

a. Removal of single trees or small groups of trees for sanitation, salvage, or hazard reduction (assume yields based on past 10-year experience)

b. Stand maintenance along zones to maintain the vigor of the stands; yields are often linked to other harvest in adjacent areas; generally this practice is used for streamside and highway zones if not otherwise managed by independent sales

c. Prescriptions for marginal productivity (lands producing less than 20 cubic feet per acre per year) and/or disputed regeneration

d. Group selection (clearcuts less than two acres in size or single tree selection.

Rejuvenation: The treatment of vegetation (by burning or chemical or mechanical means) so that vigorous, young growth is stimulated.

Relicted Land: The land that has been exposed by the declining level of Mono Lake and which lies between the elevation of 6,417 feet and Mono Lake as it varies from day to day.

Research Natural Area (RNA): An area established specifically to preserve a representative sample of an ecological community; primarily for scientific and educational purposes.

Resident Trout: Trout that live year-round and reproduce in a stream or lake (contrasted with trout raised in a fish hatchery, planted, and removed by anglers).

Retention (VQO): See Visual Quality Objectives.

Right-of-Way: 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.

Riparian Area: Geographically delineable areas with distinctive resource values and characteristics that are comprised of the aquatic and riparian ecosystems.

Riparian areas on the Inyo National Forest consist of: (1) as a minimum, areas that are a 100-foot horizontal distance from the edge of standing bodies of water, lakes, and perennial streams, and (2) all wetlands, including all ephemeral or intermittent streams which support riparian vegetation, wet meadows springs, seeps, and bogs. See Streamside Management Zones for ephemeral and intermittent streams not included in wetlands.

Riparian Area-Dependent Resources: Water-dependent vegetation, wildlife, fish (and other aquatic animals), soil, and water.

Roadless Area: As defined by the Roadless Area Review and Evaluation (RARE), 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.

Roadless Area Review and Evaluation (RARE) II: The assessment of roadless areas within the National Forests as potential wilderness areas as required by the National Wilderness Act. This refers to the second such assessment which was documented in the Final Environmental Impact Statement of the Roadless Area Review and Evaluation process, January 1979.

Roads: A general term denoting a route 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.

ROS Class: See Recreation Opportunity Spectrum.

Rotation Age: The length of time between the formation or regeneration of a tree stand and its final cutting.

S

SAOT: See Skiers-at-one-time.

SCE: Southern California Edison.

SHPO: State Historic Preservation Officer.

SIA: See Special Interest Area.

SMZ: See Stream Management Zone.

SPM: Semi-Primitive-Motorized. (See Recreation Opportunity Spectrum.)

SPNM: Semi-Primitive-Non-Motorized. (See Recreation Opportunity Spectrum.)

SRI: See Soil Resource Inventory.

SSR: See Stream Channel Stability Rating.

Salvage: Dead or deteriorating trees often cut before their timber becomes worthless.

Sanitation Harvest: The removal of dead, diseased, insect infested, damaged, or otherwise low vigor trees to minimize losses from pests.

Sediment: Solid material, both mineral and organic, that is suspended in or being transported by water.

Selection Cutting: See Group Selection and Single Tree Selection.

Sensitive Species: Species that have appeared in the Federal Register as proposed additions to the endangered or threatened species list, and those that are on an official state list or are recognized by the Regional Forester as needing special management in order to prevent them from becoming endangered or threatened.

Sensitivity Level: A particular degree or measure of viewer interest in the scenic qualities of the landscape.

Seral Stage: The developmental or successional stage of a biological community (related to age class).

Shelterwood Cutting: Cutting a timber stand in two or more stages. The first cutting leaves some mature trees which provide shade to help seedlings get established. The shelterwood system is a form of even-aged timber management.

Silviculture: Generally, the science and art of cultivating forest tree crops.

Silvicultural System: The entire process by which forest stands are tended, harvested, and replaced. A silvicultural system includes all cultural practices performed during the life of the stand such as regeneration cutting, fertilization, thinning, improvement cutting, and use of genetically improved sources of tree seeds and seedlings to obtain multiple-resource benefits. Silvicultural systems are classified as even- or uneven-aged.

Single Tree Selection: 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 Preparation: The preparation of an area for regeneration, involving the removal of slash and/or competing vegetation and usually the exposure of bare mineral soil.

Size Class: For purposes of Forest planning, size class refers to the three intervals of tree stem diameter used for classification of timber.

Seedling/Sapling: less than five-inch diameter.

Pole Timber: five to eight-inch diameter.

Sawtimber: greater than eight-inch diameter.

Skiers-At-One-Time (SAOT): A measure of ski area capacity represented by the number of skiers that can occupy the ski area at once.

Slash: The residue left on the ground after timber cutting or after other disruptions such as storms or fires. Slash includes unutilized logs, uprooted stumps, broken stems, branches, twigs, leaves, bark, and chips.

Small Game: Birds and small mammals normally hunted or trapped.

Snag: A standing dead tree from which the leaves and most of the branches have fallen.

Soil Productivity: The natural capacity of a soil to produce a specified plant species or sequence of species under a specified system of management.

Soil Resource Inventory (SRI)/Soil Survey: The systematic examination, description, classification and mapping of soils.

Soil Surveys: The systematic examination of soils in the field and laboratory, including description, classification, and mapping of soils, and the interpretation of soils according to their productivity and behavior under use and management.

Order I:	Very intensive investigations used for site-specific work, such as individual building sites, experimental plots, and irrigation and drainage studies.
Order II:	Intensive investigations used for project level work.
Order III:	Intermediate level investigations used for forest planning purposes on lands subject to heavy recreational use or timber management.
Order IV:	Broad reconnaissance investigations use for forest-wide planning.

Special Interest Area (SIA): Areas established and managed for their unique or outstanding natural values, such as botanical, geological, scenic, or historical features.

Special-Use Permit: A permit authorizing the occupancy and use of National Forest land in the manner specified.

Species: A fundamental category of plant or animal classification.

Staging Area/Holding Area: An area in which mule deer gather during migration, typically while waiting for weather to clear or snow to melt before moving to higher elevations.

Stand: A community of trees or other vegetation types that is sufficiently uniform in composition, constitution, age, spatial arrangement, or condition to be distinguishable from adjacent communities and to thus form a management entity.

Standard Service: Management of recreation facilities which provides for vegetation management, full maintenance of facilities, appropriate toilet cleaning and garbage pickup, and information and interpretive services for the recreation area.

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 fully utilize the growth potential of the land.

Stratum: A three-part timber category based on tree species, age class, and stocking level.

Stream Channel Stability Rating (SSR): A method for evaluating stream channel stability was developed to evaluate the resistance of mountain stream channels to the detachment of bed and bank materials and to provide information about the ability of streams to adjust to and recover from potential changes in flow and/or increases in sediment production. The system was developed to be used in conjunction with other hydrologic analyses to augment silvicultural prescriptions and improve watershed management. A brief description of the items rated and the modifications employed in this study area included below.

The stream channel stability evaluation procedure involves subjective field evaluation of fifteen items. The channel cross-section is divided into three components: upper banks, lower banks, and channel bottom. Upper banks are rated for slope, mass wasting, debris jam potential, and bank protection by vegetation. Lower banks are rated for channel capacity, bank rock content, obstructions, cutting, and deposition. Channel bottoms are rated for rock angularity, brightness, consolidation, scouring and deposition, and clinging aquatic vegetation.

Each item is given a rating value which is weighed in terms of its importance as an indication of streambank stability. For instance, scouring and deposition of the channel bottom, which is an important factor, is heavily weighted, ranging from 6 to 24. In contrast, channel capacity, rock angularity, brightness, and clinging aquatic vegetation are all less important, and have values ranging only from one to four.

After a stream reach has been rated, values for the items are totaled. A score of less than 38 is considered "excellent", indicating a stable, erosion-resistant stream. A score of 39 to 76 is considered "good"; a score of 77 to 114 is considered "fair", and a score of 115 to 142 is considered "poor". It is important to note that a low score indicates stable streambank conditions, while a high score indicates unstable, eroded streambanks.

Stream 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. May include floodplains and wetlands, riparian areas, inner gorges, perennial streams, and intermittent streams showing signs of recurrent annual scour or deposition.

Succession: The gradual changing of a biological community over time (including the replacement of one community by another) until that change comes to a halt and the climax community is reached.

Successional Stage: A phase in the gradual changing of a biological community (same as seral stage).

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 manage

Suitable Timber Land: See Tentatively Suitable Timber Land.

Suppression: Actions taken to extinguish or confine a fire.

Sustained Yield: See Long-term Sustained Yield Capacity.

T

TBR: The benchmark which maximizes timber production for one decade.

T&E: Threatened and endangered species. (See Threatened Species, Endangered Species.)

TSI: See Timber Stand Improvement.

Target: A statement used to express planned results to be reached within a stated time period.

Tentatively Suitable Timber Land: Lands tentatively considered suitable for commercial timber management must meet the following criteria:

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 five years after final harvest.

e. Where adequate information is available to project responses to timber management activities.

Term Permit: A grazing permit or a special-use permit issued for a specified period of time, but which has a termination date.

Thinning: Cutting timber to improve the quality and growth of the trees that remain. In commercial thinning, merchantable timber (timber of salable quality), is cut. In precommercial thinning, non-merchantable trees are cut.

Threatened Species: Any species which is likely to become an endangered species within the foreseeable future and which has been designated in the Federal Register as a threatened species.

Tiering: Refers to the practice of analyzing general alternatives and environmental consequences in broader Environmental Impact Statements and more detailed alternatives and consequences in site-specific environmental documents. The more specific environmental document is then tiered to the analysis found in the more general one.

Timber Production: The growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs and bolts for industrial or consumer use. Does not include fuelwood.

Timber Stand Improvements (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.

Trade-off: The impact on an output or cost caused by changing another output or cost.

Trailhead: The parking, signing, and other facilities available at the beginning of a trail.

Trampling and chiseling: A measure of the degree of livestock utilization and the extent of livestock damage along a stream reach. Trampling is defined as hoof marks, soil disturbance, soil compaction with evidence of hoof marks; bare soil with evidence of hoof marks, and trampled vegetation. Cattle trails bordering the stream or crossing it are included in this concept only when basal vegetation has been removed and bare ground has been exposed. Chiseling is identified by arc-shaped cuts in streambanks caused by cattle or sheep hooves.

Tuff: A type of light-colored volcanic rock commonly found on the Inyo National Forest north of Bishop.

Type Conversion: The conversion of one vegetation type or plant species to another, such as shrub to grass or sagebrush to bitterbrush.

U

U: Urban. (See Recreation Opportunity Spectrum.)

USFS: United States Forest Service, Department of Agriculture.

USFWS: United States Fish and Wildlife Service.

USGS: United States Geological Survey.

Understory: Low-growing vegetation such as grasses, shrubs, or small trees growing under a stand of trees. Also, that portion of trees in a forest stand below the overstory.

Uneven-aged Management: Management of forest stands which results in trees of several or many ages growing together. Cutting methods producing uneven-aged stands are single-tree selection and group selection.

Unplanned Ignition: A fire started at random by either natural or human causes or a deliberate arson-set fire.

Unsuitable Timber Lands: Refers to land which is not suited for timber production according to the criteria listed above under Tentatively Suitable Timber Land.

V

VAC: See Visual Absorption Capability.

VQI: See Visual Quality Index.

VQO: See Visual Quality Objectives.

Variety Class: A classification system with three visual landscape categories:

a. Distinctive (Variety Class A): Unusual and/or outstanding landscape variety that stands out from the common features in the landscape.

b. Common (Variety Class B): Prevalent, usual, or widespread landscape variety; also refers to ordinary or undistinguished visual variety.

c. Minimal (Variety Class C): Little or no visual variety in the landscape; monotonous or below average compared to the common features in the landscape.

Viable Populations: Reproducing populations of plants or animals of sufficient numbers and distribution to assure indefinite perpetuation of the species.

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: The state of visual alteration measured in degrees of deviation from the natural appearing landscape.

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 visual condition levels ranging from Type I (appears to be untouched by human activities) to Type VI (appears to be drastically disturbed).

Visual Quality Objectives (VQO): A set of measurable maximum levels of future alteration of a characteristic landscape. These levels are:

a. Preservation: Ecological change only.

b. Retention: Human activities are not evident to the casual Forest visitor.

c. Partial Retention: Human activity may be evident but must remain subordinate to the characteristic landscape.

d. Modification: 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.

e. Maximum Modification: Human activity may dominate the characteristic landscape but should appear as a natural occurrence when viewed as background.

Visual Resource: The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

W

WFHR: See Wildlife and Fish Habitat Relationships.

WFUD: See Wildlife and Fish User Day.

WHR: Wildlife Habitat Relationships. (See Wildlife and Fish Habitat Relationships.

WIN: See Watershed Improvement Needs.

WLI: A Forest Plan Alternative which has been eliminated. It recommends a substantial amount of quality acreage for wilderness while maintaining or increasing commodity outputs through intensified management of lands outside wilderness.

WLN: The benchmark which maximizes Present Net Value (PNV) with all Further Planning Areas as wilderness.

Watch List I: Those plant species which the California Native Plant Society lists as needing more information before their legal status can be determined.

Watch List II: Those plant species which the California Native Plant Society has listed in the past, but are currently delisted.

Water Rights: The legal right to use water.

Water Yield: The total amount of water coming from an area of land, commonly a watershed, over a given period of time.

Watershed: The entire area that contributes water to a drainage system or stream.

Watershed Improvement Needs (WIN): An inventory of meadow complexes on the forest which have a history of being used for grazing. This inventory determines their condition of being either healthy, damaged or threatened. Erosion (gullying or headcutting) has been documented for over 25,000 acres.

Wild and Scenic River: A river set aside under the 1968 Wild and Scenic Rivers Act to preserve its natural environment and water quality. The following are the subcategories of wild and scenic designation:

a. "Wild River Areas: Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America."

b. "Scenic River Areas: Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads."

c. "Recreational River Areas: Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past." (16 U.S.C. Sec. 1273 (b))

Wild Trout Stream: A stream designated by the State of California to managed exclusively for the propagation of wild trout (those hatched in the wild); such streams are not stocked with hatchery-stocked trout.

Wilderness: As defined by the Wilderness Act of 1964, wilderness:

a. is undeveloped Federal land without permanent improvements or human habitation; is protected and managed so as to preserve its natural conditions;

b. has outstanding opportunities for solitude or primitive recreation;

c. 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 ignition.

Wildlife and Fish Habitat Relationships (WFHR): A system for organizing information about wildlife and fish species, their habitats, and the relationships between them that is used in land and resource management planning.

Wildlife and Fish User Day (WFUD): Twelve hours of recreation use involving wildlife or fish (primarily hunting and fishing).

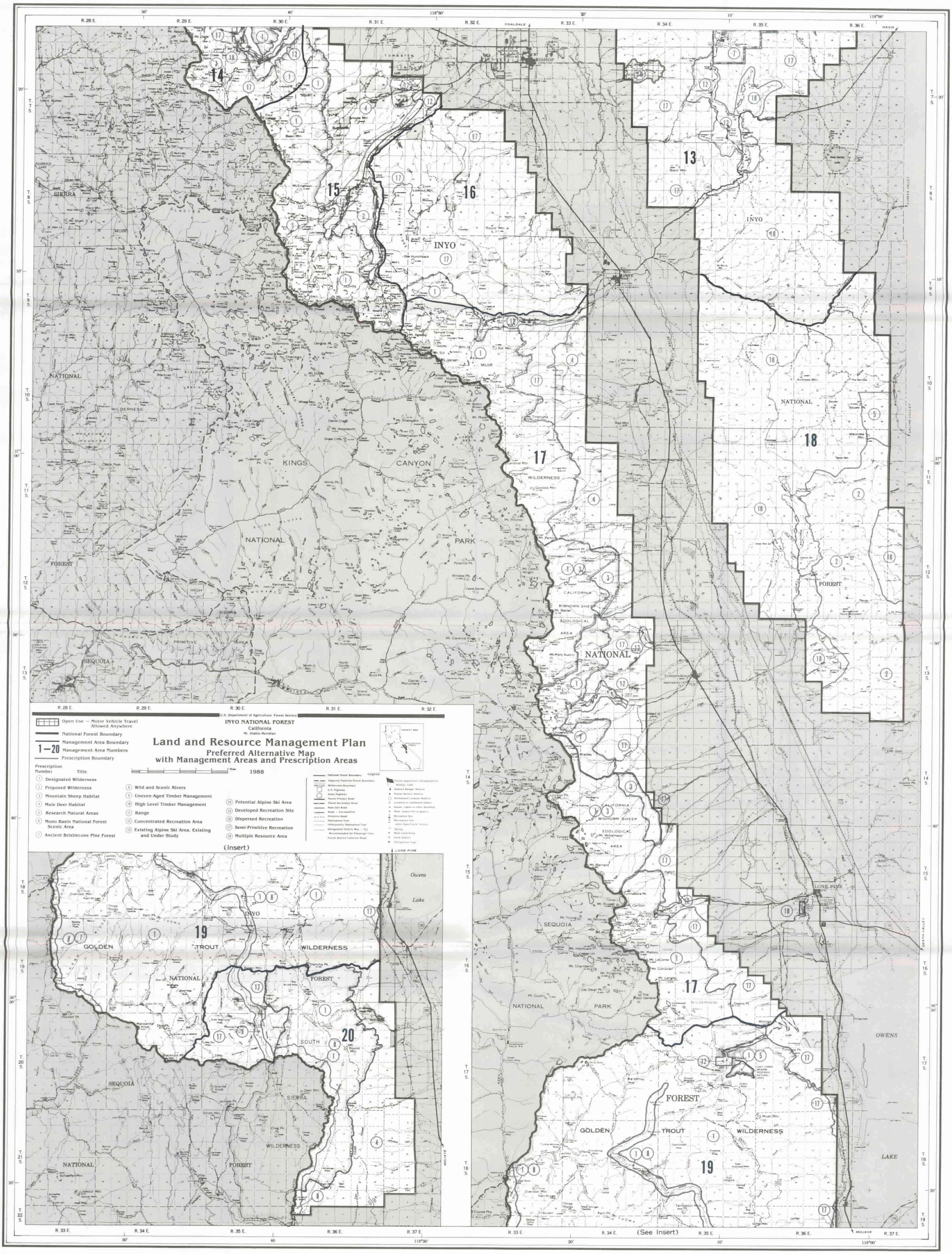
Withdrawal: Withholding an area of Federal land from settlement, sale, location, or entry allowed under the general land laws to reserve the area for a particular purpose or program.

Y

Yield Table: A tabular statement of resource outputs expected to be produced under a specified set of conditions.

Z

Zone of Influence: The geographic area surrounding and intermingled with National Forest lands wherein people live whose lives are most directly impacted by Forest management decisions and activities.



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U.S. Department of Agriculture Forest Service

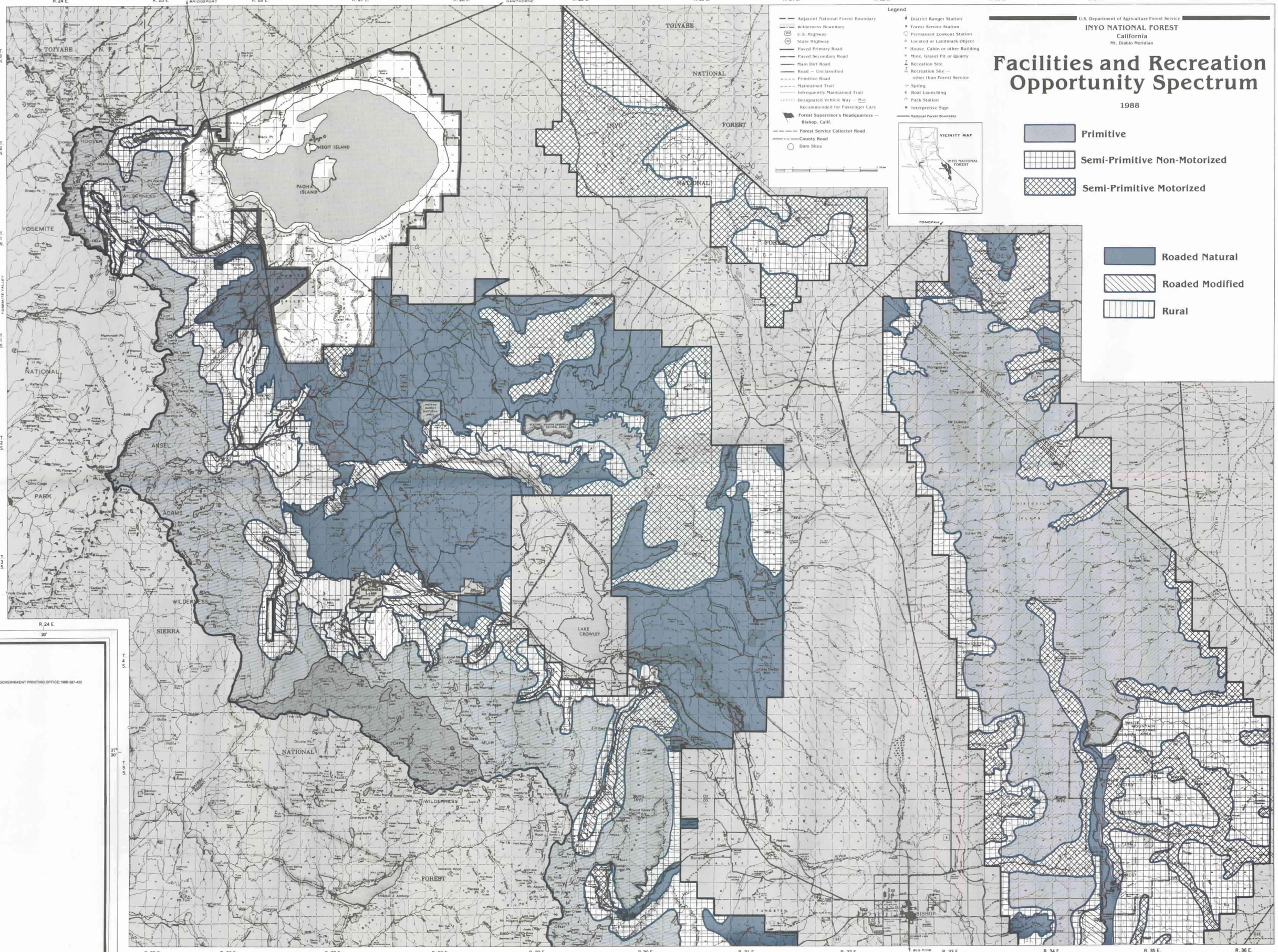
INYO NATIONAL FOREST

California

Mt. Diablo Meridian

Facilities and Recreation Opportunity Spectrum

1988



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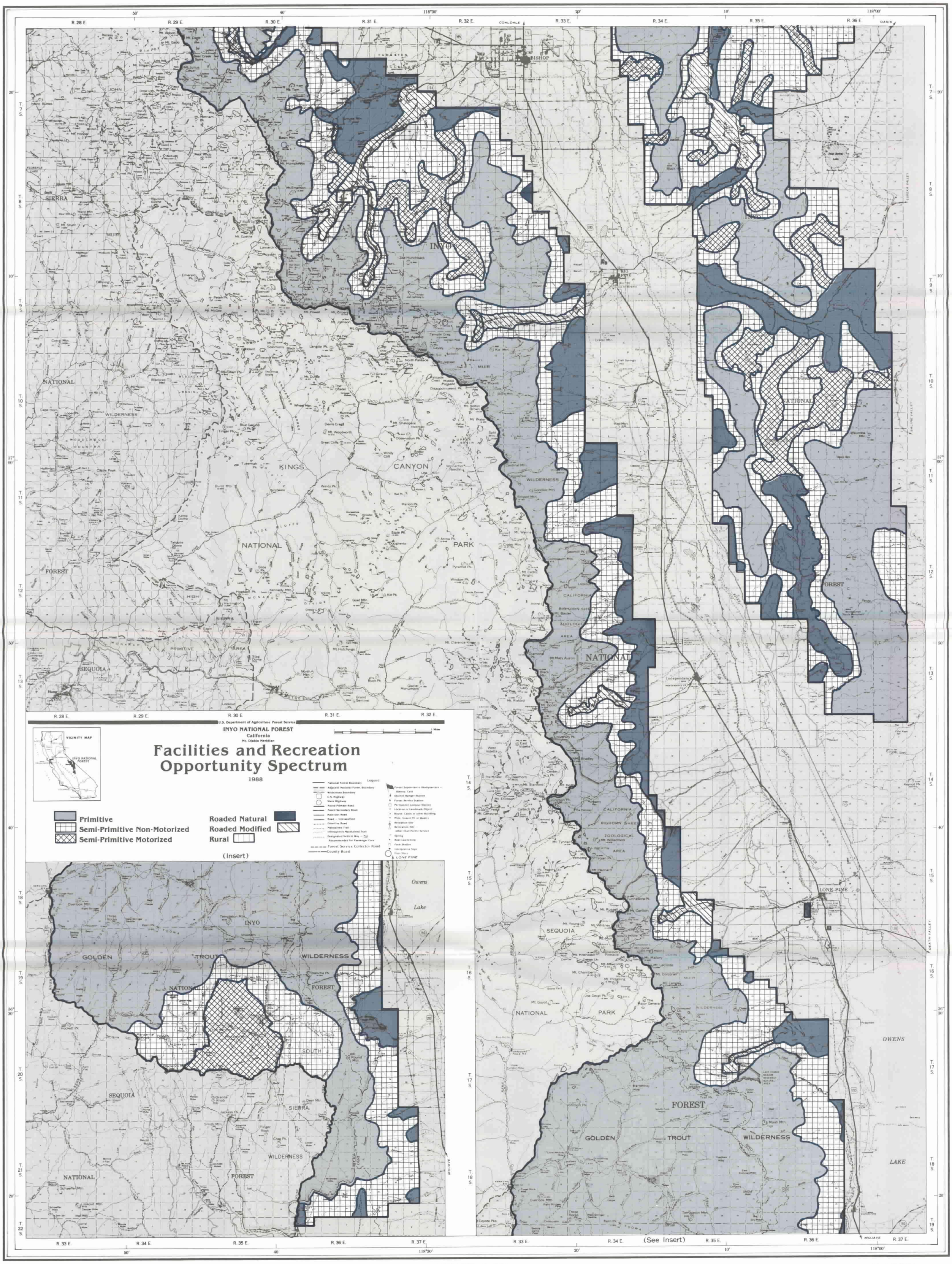

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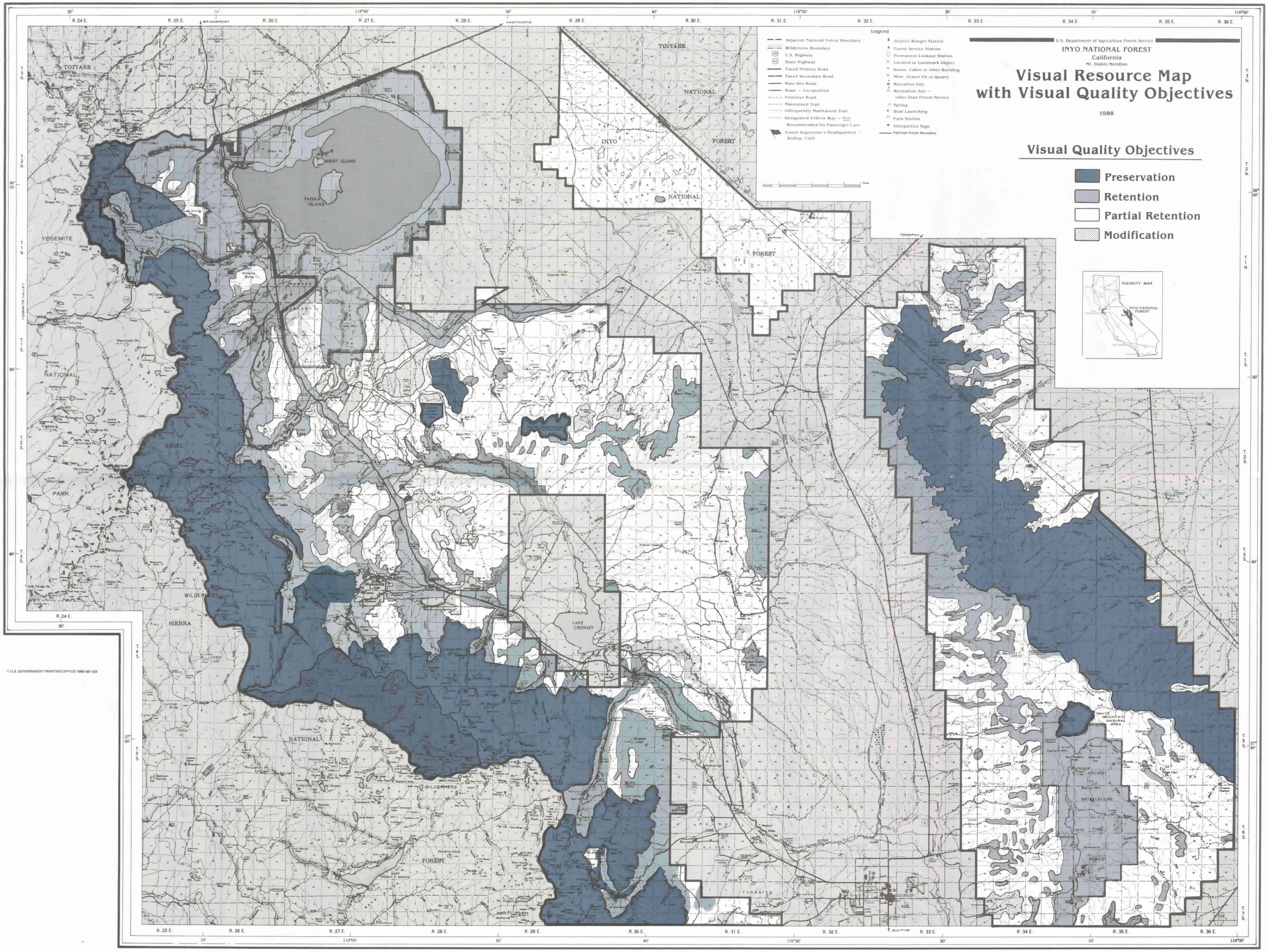

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U.S. Department of Agriculture Forest Service

INYO NATIONAL FOREST

California

Mt. Diablo Meridian

Visual Resource Map with Visual Quality Objectives

1988

Visual Quality Objectives

Preservation

Partial Retention

Retention

Modification

VICINITY MAP

INYO NATIONAL FOREST

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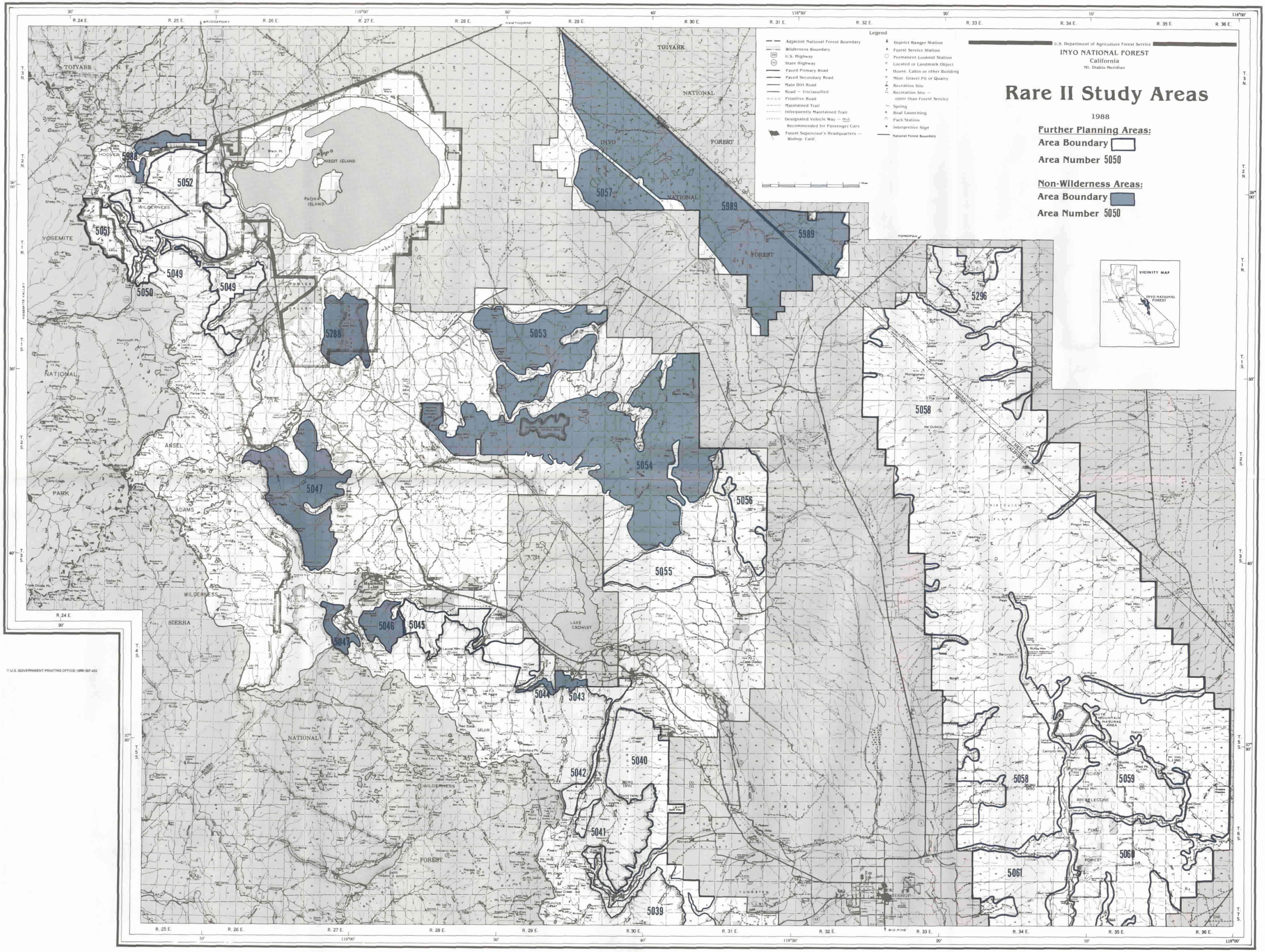

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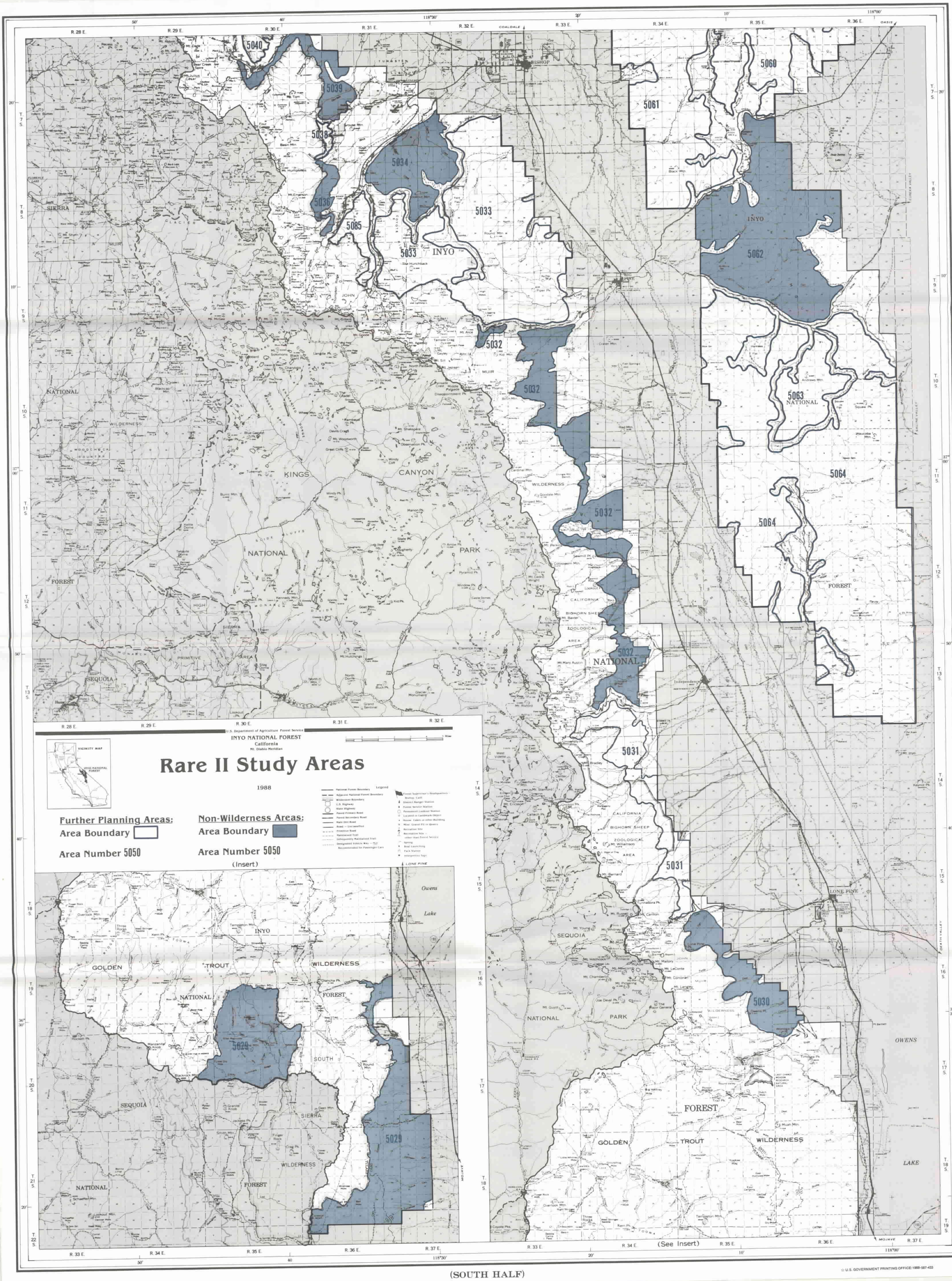
U.S. Department of Agriculture Forest Service
INYO NATIONAL FOREST
California
Mt. Diablo Meridian
Rare II Study Areas
1988
VICINITY MAP
INYO NATIONAL FOREST
Further Planning Areas:
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Area Number 5050
Non-Wilderness Areas:
Area Boundary
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5039
5038
5036
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5031
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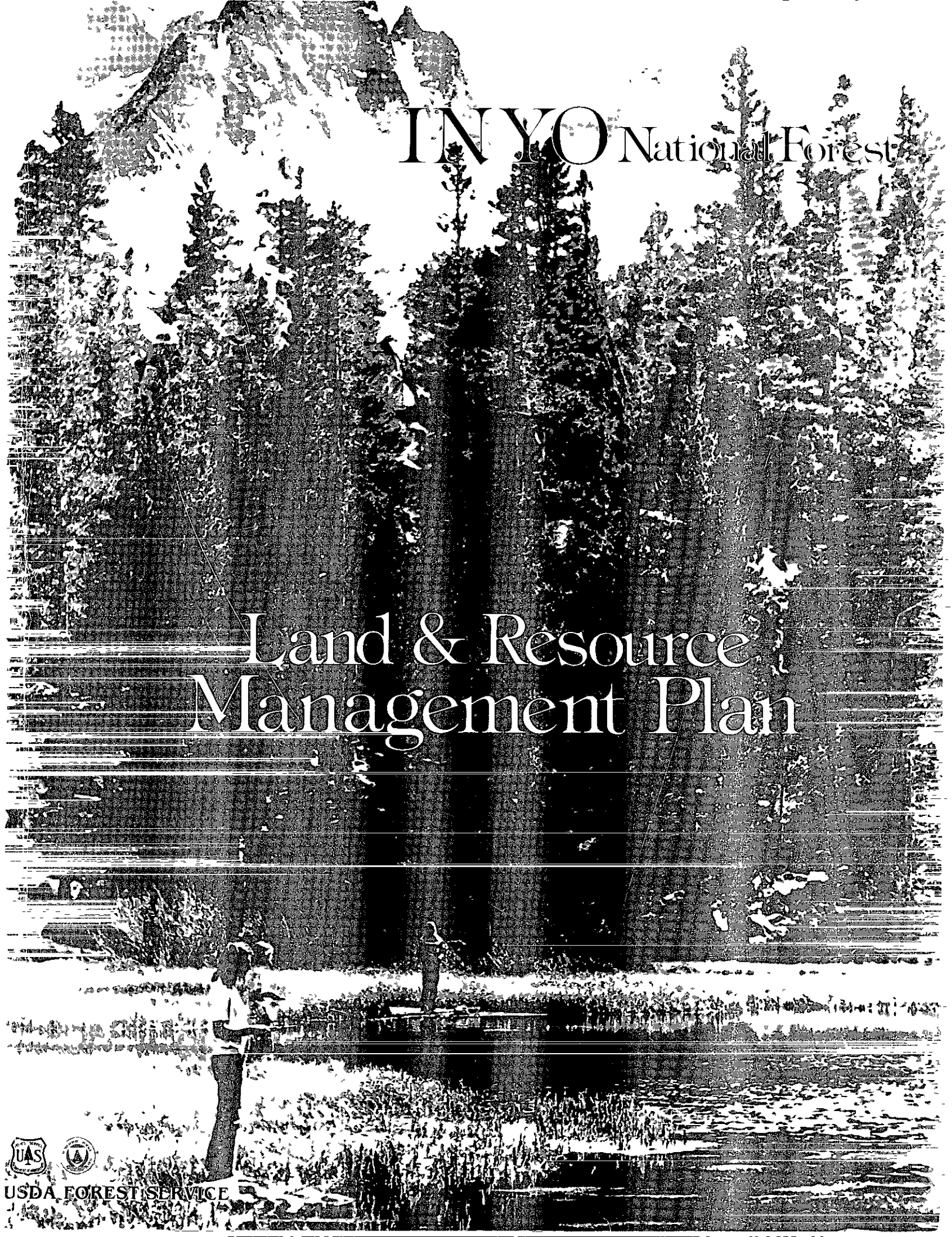
INYO National Forest

Land & Resource Management Plan



USDA FOREST SERVICE

Inyo National Forest

Pacific Southwest Region USDA Forest Service

Land and Resource Management Plan

1 9 8 8

DENNIS W. MARTIN
Forest Supervisor

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Regional Forester

This Forest Plan establishes the management direction and associated long-range goals and objectives for the Inyo National Forest for the next ten to fifteen years.

TABLE OF CONTENTS

Chapter		Page
I.	**Introduction**	1
	Purpose of the Forest Plan	1
	Relationships with Other Environmental Documents	1
	Plan Implementation	1
	Amendments, Revisions, and Appeals	2
	Plan Organization	3
II.	**Issues and Concerns**	4
	Introduction	4
	Forest Plan Response to Original Issues and Concerns	4
	Economic Assessment	5
	Social Assessment	5
	Air Quality	5
	Cultural Resources	6
	Diversity	6
	Energy	7
	Facilities	7
	Fish	9
	Further Planning Areas	9
	Geology	10
	Lands	11
	Minerals	11
	Pest Management	12
	Protection	12
	Range	13
	Recreation	13
	Research Natural Areas	15
	Riparian Areas	15
	Sensitive Plants	16
	Special Interest Areas	16
	Timber	17
	Visual Resources	18
	Watershed	18
	Wild and Scenic Rivers	19
	Wilderness	19
	Wildlife	20
III.	**Summary of the Analysis of the Management Situation**	22
	Introduction	22
	Social and Economic Environments	22
	Sphere of Economic Influence	22
	Population	23
	Employment	23
	Role of the Inyo National Forest	23

Future Trends 24
Economics in Forest Planning 24
Sphere of Social Influence 24
Social Groups 25
Resource Environment 27
Air Quality 27
Cultural Resources 28
Diversity 30
Energy: Geothermal 31
Energy· Hydroelectric 31
Energy: Wind Power 32
Facilities 32
Fish 34
Further Planning Areas 36
Geology 37
Lands 38
Minerals: Leasable (Geothermal Energy) 40
Minerals· Locatable 40
Minerals: Mineral Materials 41
Mono Basin National Forest Scenic Area 42
Pest Management 42
Protection (Fire Management) 43
Range 45
Recreation: General 46
Recreation: Developed 47
Recreation: Alpine Skiing 47
Recreation Dispersed 48
Research Natural Areas 49
Riparian Areas 50
Sensitive Plants 51
Special Interest Areas 52
Timber 53
Visual Resources 54
Watershed — Soils 55
Watershed — Water 56
Wild and Scenic Rivers 57
Wilderness 58
Wildlife 59

IV. Management Direction 65
Introduction 65
Forest Goals 66
Forest Objectives 70
Forest-wide Standards and Guidelines 74
Air Quality 75
Cultural Resources 75
Diversity 76
Energy 77
Facilities 77
Fish 78
Geology 80
Hardwoods 80
Lands 80

Minerals 82
Pest Management 83
Protection 84
Range 84
Recreation 86
Research Natural Areas 89
Riparian Areas 89
Sensitive Plants 91
Special Interest Areas 92
Timber 92
Visual Resources 93
Watershed 94
Wild and Scenic Rivers 97
Wilderness 97
Wildlife 98
Management Prescriptions 106
Designated Wilderness (#1) 107
Proposed Wilderness (#2) 113
Mountain Sheep Habitat (#3) 116
Mule Deer Habitat (#4) 117
Research Natural Areas (#5) 119
Mono Basin National Forest Scenic Area (#6) 122
Ancient Bristlecone Forest(#7) 123
Wild and Scenic Rivers (#8) 126
Uneven-aged Timber Management (#9) 130
High Level Timber Management (#10) 132
Range (#11) 134
Concentrated Recreation Area (#12) 136
Alpine Ski Area, Existing and Under Study (#13) 138
Potential Alpine Ski Area (#14) 140
Developed Recreation Site (#15) 143
Dispersed Recreation (#16) 145
Semi-Primitive Recreation (#17) 147
Multiple Resource Area (#18) 149
Management Area Direction 151
Mono Basin (#1) 152
Lee Vining (#2) 155
Walker-Parker (#3) 160
June Lake Loop (#4) 164
Glass Mountain (#5) 170
Pizona (#6) 175
Upper Owens River (#7) 179
Mammoth Escarpment (#8) 184
Mammoth (#9) 190
Reds Meadow-Fish Creek (#10) 196
Convict-McGee (#11) 200
Benton-Casa Diablo (#12) 204
White Mountains (#13) 208
Rock Creek-Pine Creek (#14) 213
Bishop Creek-Buttermilk (#15) 217
Coyote (#16) 221
Owens Valley Escarpment (#17) 225

Inyo Mountains (#18) 229
Golden Trout (#19) 233
South Sierra (#20) 238

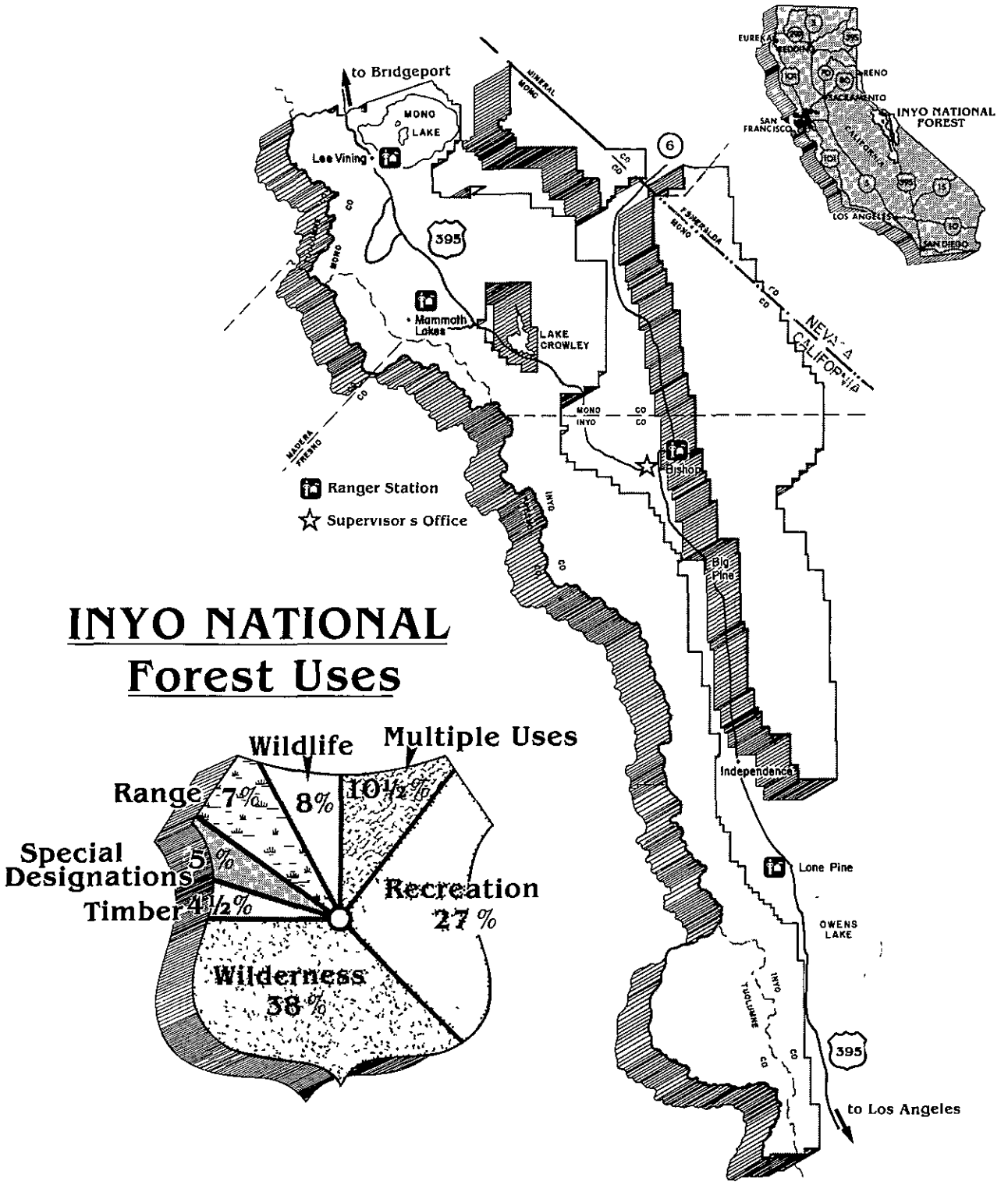
V. Monitoring and Evaluation Requirements 242
Monitoring Process 242
Evaluation Process 343
Monitoring Plan by Resource 245

VI. Glossary 258

VII. Index 293

Appendixes 298
Appendix A — Resource Plans 298
Appendix B — Research and Technical Data Needs 307
Appendix C — Tentative Ten-Year Timber Sale Action Plan 312

VICINITY MAP
Inyo National Forest



CHAPTER I

Introduction

CHAPTER I. Introduction

Purpose of the Forest Plan

The purpose of the Inyo National Forest Land and Resource Management Plan is to provide integrated, multiple resource management direction for all Forest resources for the next decade (1988-1997). The Plan has been developed through a planning and environmental analysis process that is documented in the accompanying Environmental Impact Statement (EIS). This Plan details the Preferred Alternative analyzed in the EIS.

The Plan prescribes management direction for the most suitable combination of management practices, sets ten- to fifteen-year objectives, provides for the mutiple use and sustained yield of goods and services, maximizes long-term net public benefits, proposes environmentally sound management, and responds to major public issues and management concerns.

In September 1984 Congress designated the Mono Basin National Forest Scenic Area which encompasses approximately 116,000 acres of land within the Inyo National Forest boundary. Resource and development planning for the Scenic Area is being conducted in a separate planning process. The new Comprehensive Management Plan for the Scenic Area will be incorporated into the Forest Plan.

Relationships with Other Environmental Documents

The Plan will supersede all existing plans for individual resources or land units. These existing plans will be treated in one of three ways: (1) incorporated into the Plan without revision, (2) incorporated with direction to be revised or updated, or (3) replaced by the Plan. See Appendix A for the list.

In addition to replacing and/or incorporating earlier plans, the Plan calls for the development of several resource implementation plans during the coming decade. Those new planning requirements are listed in Appendix A.

The Plan and its Environmental Impact Statement will serve as umbrella documents for all future planning on the Inyo. Most individual projects will still require an environmental analysis before implementation, but these will be tiered to the EIS. For those projects that require additional analysis, only that information needed for site-specific decisions will be addressed.

Plan Implementation

The Final Plan incorporates many of the comments received from the public in response to review of the Draft Plan. The Final Plan and Environmental Impact Statement will be approved with a Record of Decision signed by the Regional Forester. The approved Plan will become effective no less than

thirty days after publication in the Federal Register of a Notice of Availability of the Final EIS. When that process is complete, direction in the Plan will be implemented.

Implementation of the Plan will mean a change from current management direction, including the annual budget and objective programs, to reflect resource emphasis shifts. Current management is represented by the No Action Alternative (CUR) in the Environmental Impact Statement; the Plan program is represented by the Preferred Alternative (PRF). Chapter III, Summary of the Analysis of the Management Situation, compares both programs.

Plan management direction is described in Chapter IV. In some cases, new activities are proposed; in others, direction calls for a change from current management. In the former case, proposed actions can begin immediately. In the latter, a period of adjustment may be needed.

Changes in management direction will be implemented through the annual budgeting and work planning processes. These processes allow for adjustments to reflect current priorities. The degree to which this Plan will be implemented depends to a large extent on the appropriation of funds by Congress and allocation to the Forest through budget procedures.

When the Plan is implemented, subject to valid existing rights, all outstanding and future permits, contracts, cooperative agreements, and other instruments for Forest land use and occupancy will conform to the Plan. The Plan will be used by the Forest to direct management activities in conjunction with other documents that provide policy direction. These include Forest Service Manuals and Handbooks and the Pacific Southwest Regional Guide. Direction from these other sources is repeated in the Plan only where it is necessary for purposes of emphasis.

The National Forests are managed under a variety of federal laws which are documented in the Code of Federal Regulations (CFR). All Forest Service activities must adhere to these laws.

Amendments, Revisions, and Appeals

At intervals specified in Chapter V, Monitoring and Evaluation, Forest activities will be monitored to determine whether the goals and objectives of the Plan are being met. The Plan can be amended at any time if monitoring results indicate that it is needed. An amendment will require an environmental analysis to determine whether the amendment represents a significant change from the Plan. If the change is significant, preparation of an Environmental Impact Statement and formal public involvement are required. If not, the kind of public involvement and the documentation that is needed will be determined by the type and magnitude of the proposed change.

The Plan will ordinarily be revised every ten years or at most every fifteen years. Revision may also be proposed in the interim if conditions have changed enough to affect Forest-wide programs set forth in the Plan. A Plan revision always requires a change to this Environmental Impact Statement,

incorporating public involvement procedures as required by the National Environmental Policy Act (NEPA).

The Regional Forester's decision to approve the Plan and its Environmental Impact Statement is subject to the public's rights of administrative appeal. Preliminary process decisions are not subject to appeal [See 36 CFR 211.18(b)(11)].

Plan Organization

The Plan is organized into chapters as follows:

Chapter I. Introduction. This chapter describes the purpose of the Plan, its relationship with other plans and environmental documents, how it will be implemented, and procedures for amendment and revision.

Chapter II. Issues and Concerns. This chapter summarizes the issues and concerns that were identified in this planning process on the Inyo National Forest and discusses the ways in which the Plan responds to those issues and concerns.

Chapter III. Summary Analysis of the Management Situation. This chapter describes Forest resources in terms of current direction, the opportunities for change, supply and demand, and the Plan's management emphasis for each resource.

Chapter IV. Management Direction. This chapter describes in detail how the Forest will be managed during this planning period. This includes Goals, Objectives, Forest-wide Standards and Guidelines that will be applied when managing each resource, Management Prescriptions that give specific direction for emphasizing individual resources, and Management Area Direction. The Forest is divided into twenty management areas. Each area has a different set of management prescriptions that apply to it, and each has specific direction. Maps of each area with prescription boundaries are included in this chapter.

Chapter V. Monitoring and Evaluation. This chapter describes and schedules the activities that will be needed to monitor and evaluate the Plan's direction considering outputs, objectives, and environmental impacts.

Chapter VI. Glossary.

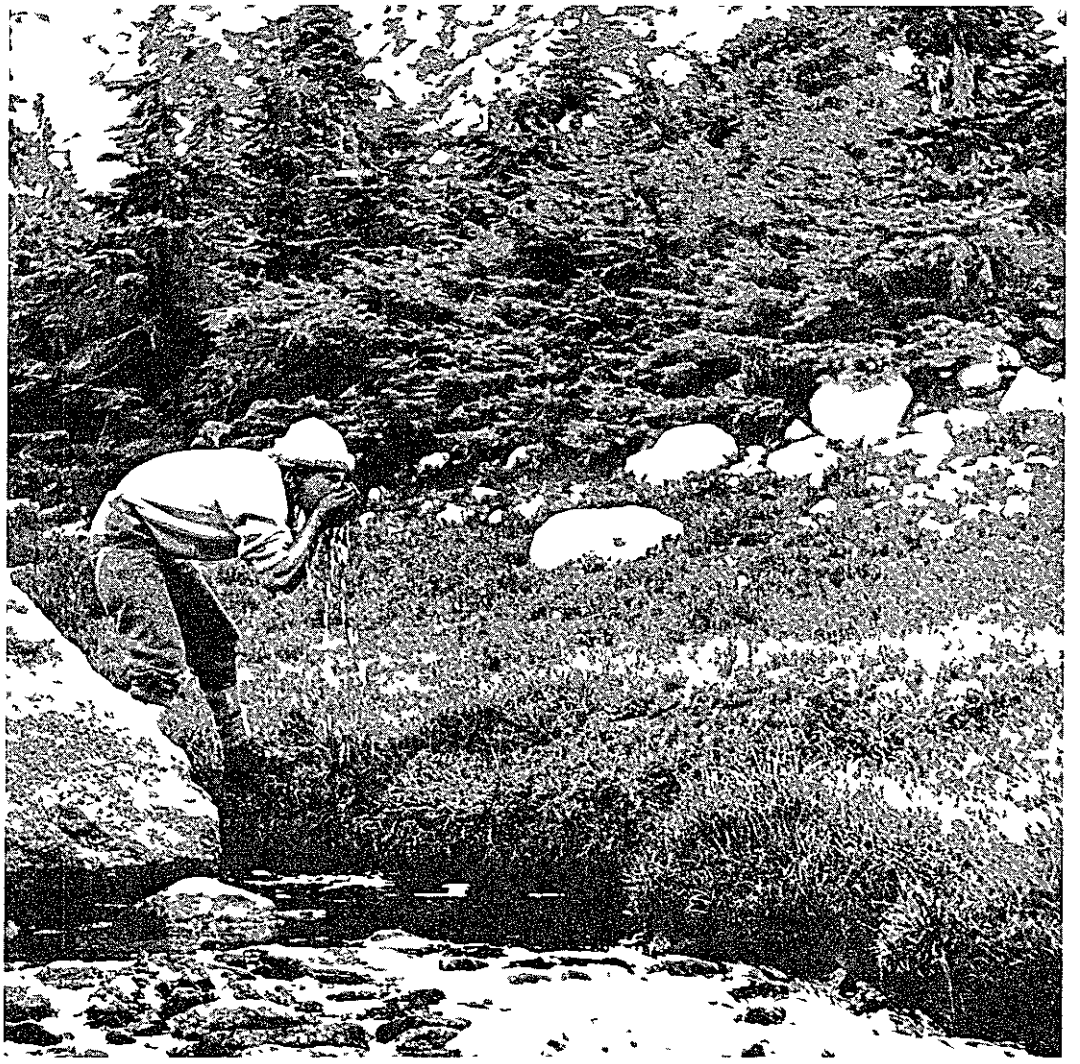
Chapter VII. Index.

Appendix A: Resource Plans

Appendix B: Research Needs and Technical Data Needs

Appendix C: Tentative Ten-Year Timber Sale Action Plan.

CHAPTER II



Gordon Wiltsie

Issues and Concerns

CHAPTER II. Issues and Concerns

Introduction

This chapter discusses the issues and concerns that were identified in the original public involvement process for this Plan. Public issues and management concerns are aspects of natural resource management that receive special emphasis in Forest planning. The issues and concerns collectively indicate the scope and nature of the analysis needed for the Environmental Impact Statement.

The Inyo National Forest identified public issues by interacting with individuals and organizations that expressed interest in this planning process. Management concerns of the Forest Service include those from national, regional, and Forest levels. The Final Plan was developed in response to comments received on the Draft Plan, submitted to the public for review in October 1986. Forest Service responses to these comments are displayed in the Public Response Appendix in the Environmental Impact Statement Appendix document.

Not all public issues and management concerns related to Inyo National Forest management are appropriate for inclusion in this planning process. Those that have been selected for consideration address concerns that can be resolved by the Forest Service at the Inyo National 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 subject. Issues and concerns have, therefore, been consolidated and identified as "issue/concerns".

This chapter only displays those issues and concerns that were identified prior to distribution of the Draft Forest Plan. Those comments that were received in response to the Draft Plan are incorporated in the Public Response Appendix and are answered in detail by the Forest Service in that document.

Forest Plan Response to Original Issues and Concerns

The following list represents those public issues and management concerns that were identified in the original public involvement scoping process. Public issue/concerns are indicated by (p); management by (m). The Forest Service responses are located in the documents as noted. Economic and social issue/concerns are addressed first, followed by natural resource issue/concerns.

Economic Assessment

Issue/Concern: How can the Forest produce goods and services to maximize economic efficiency?

- Thoroughly discuss discount rates and value of non-market goods and services showing the possibilities of different results under different assumptions (p)
  (Economic Analysis of the Management Situation)

- How can long-term and short-term economic benefits be balanced? (p)
  (EIS Chapters II, IV)

- Do Forest Service programs help maintain ecnomic stability and employment in local communities? (p)
  (EIS Chapters III, VI)

Response: The analysis of Forest Plan alternatives emphasizes long-term cost efficency and the maintenance of economic stability for recreation-based Eastern Sierra communities.

Social Assessment

Issue/Concern: How does the management of the Inyo National Forest influence the local social environment and lifestyle?

- Which segments of the population and which communities might be impacted by Forest management policy? (m)
  (EIS Chapters III, IV)

- Where does the Forest have an influence on the public and community? (m)
  (EIS Chapters III, IV)

Response: The relationship of Inyo National Forest activities to local groups is introduced in Chapter III of the EIS and the consequences of different alternatives on those groups is detailed in Chapter IV of the EIS. The Plan responds to the identified needs of key social groups.

Air Quality

Issue/Concern: What can the Forest do to influence air quality?

- Dust, smoke, and regional haze are the most serious air quality problems on and near the Forest. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

Response: The Forest-wide Standards and Guidelines direct compliance with state and federal procedural requirements, and coordination of Forest Service activities with the Air Pollution Control District. The Forest will work with permittees and contractors to meet air quality standards.

Cultural Resources

Issue/Concern: How should the Forest manage cultural resources and provide for the use of Forest lands by American Indians for traditional practices?

- Archaeological sites should be inventoried and protected, including restrictions on motorized access. (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Native American religious and ceremonial sites should remain inviolate. (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Cultural resource interpretive activities on the Forest are very well attended. (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Local American Indians wish to use Forest land for traditional cultural and religious practices. (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- There is a need to effectively integrate the management of cultural resources with the management of other resources. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

Response: The Forest-wide Standards and Guidelines include direction that respond to expressed concerns. The emphasis is on complying with state and federal law in an efficient and effective manner, providing for public enjoyment and understanding of cultural values, and cooperating with local American Indian groups.

Diversity

Issue/Concern: What is a desirable level of vegetative diversity for the Inyo National Forest, and what should the Forest do to maintain or achieve that level?

- Manage natural forces (such as insects, disease, and fire) to maintain diversity in the long term while minimizing the disruptive effects of those forces in the short term. (m)
  (Forest-wide Standards and Guidelines, Prescriptions, Plan Chapter IV)

- Respond to the demand for land uses (such as hydroelectric and geothermal developments, road and utility corridors, campgrounds, timber management, and mineral extraction) that threaten to reduce diversity. (m)
  (Forest Objectives, Forest-wide Standards and Guidelines, Prescriptions, Plan Chapter IV).

- Riparian areas and coniferous forests suitable for timber management have the greatest potential diversity and are the most threatened by management activities. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Full control of wildfires reduces diversity. (m)
  (Forest-wide Standards and Guidelines, Prescriptions, Plan Chapter IV)

Response: Management direction in the Forest-wide Standards and Guidelines and Prescriptions guides vegetative management so that seral stage diversity and special habitat elements are maintained or enhanced. Output tables in the Forest Objectives indicate the degree to which the Forest is responding to the demand for land uses that could affect diversity.

Energy

Issue/Concern: How does energy development fit in with the overall resource management program on the Forest? Geothermal energy is addressed under Minerals.

- Resolve conflicts between hydroelectric projects and water-dependent resources. (p & m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Resolve potential conflicts between wind farms and visual resources, soil stability, and other land uses. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Keep energy development consistent with other resources, allowing no irreparable damage. (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Encourage hydroelectric use outside wilderness and Further Planning Areas. (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Consider energy resources such as wind, solar, wood fuel. (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

Response: The Forest-wide Standards and Guidelines acknowledge the principle of treating energy production as a Forest resource, while establishing the limits to which such development can acceptably affect other resources and environmental values.

Facilities

Issue/Concern: What level of facility construction and maintenance is needed to support Forest management objectives?

- Eliminate the backlog of building and utility maintenance to meet health and safety codes. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Provide for the expansion of administrative facilities where needed. (m)
  (Forest Objectives, Forest-wide Standards and Guidelines, Plan Chapter IV)

- There is a need for a materials management and development plan. (m)
  (Appendix A, Plan)

- There is a need to coordinate with local fire districts when planning structural developments on the Forest. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Determine the feasible mass transit options on the Forest. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- There is a need for more roads for recreational access. (p)
  (Forest Objectives, Forest-wide Standards and Guidelines, Prescriptions, Management Area Direction, Plan Chapter IV)

- There is a need to reduce roads to prevent environmental damage. (p)
  (Forest-wide Standards and Guidelines, Management Area Direction, Plan Chapter IV)

- Construct roads only where environmental damage can be minimized. (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- There is a need to regularly examine agreements between the Forest Service and Inyo and Mono Counties regarding the maintenance of roads that come under both jurisdictions. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- There is a need for more trails and better maintenance of existing trails. (p & m)
  (Forest-wide Standards and Guidelines, Management Area Direction, Plan Chapter IV)

- The need for trails specifically includes nordic skiing, hiking, OHV, and handicapped-access trails. (p & m)
  (Forest-wide Standards and Guidelines, Prescriptions, Plan Chapter IV)

- There is a need to locate, design, and construct trails to provide the desired experience while minimizing resource damage. (p & m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- The need for new trails is greatest in concentrated recreation use areas and nordic ski areas. (m)
  (Prescriptions, Plan Chapter IV)

Response: Management direction throughout the Plan addresses facility development. The Forest Objectives indicate total miles of road and trail and number of administrative facilities projected for construction. The Forest-wide Standards and Guidelines address maintenance and construction priorities and measures needed to protect soil, water, vegetation, and other resources. Management Prescriptions describe the kinds of facilities needed and set limits on the kinds allowed under the specified management emphasis. Management Area Direction deals with site-specific considerations.

Fish

Issue/Concern: How should fish habitat on the Inyo National Forest be managed?

- Protect stream habitat from grazing, recreation development, and water diversions. (p)
  (Forest-wide Standards and Guidelines, Prescriptions, Plan Chapter IV)

- Improve stream habitat quality for resident trout. (m)
  (Forest-wide Standards and Guidelines, Prescriptions, Plan Chapter IV)

- Meet the increasing demand for fishing. (m)
  (EIS Chapters III, IV; Forest Objectives Plan, Chapter IV

- Assure population viability of all resident fish species. (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Protect lands surrounding streams and lakes with the potential for classification as wild trout waters. (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Address the impact of small hydro development on fisheries. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV, EIS Chapters III, IV)

- Manage habitat for the recovery of threatened Paiute and Lahontan cutthroat trout. (p & m)
  (Forest-wide Standards and Guidelines, Management Area Prescriptions, Plan Chapter IV)

Response: The Forest-wide Standards and Guidelines address the ways in which adverse effects on fish habitat can be minimized. They establish the need to manage for the recovery of threatened trout. Management Prescriptions and Management Area Direction address fish habitat restoration and/or enhancement opportunities. Chapter III of the EIS identifies projected demand for fishing; output tables in the Forest Objectives (Plan, Chapter IV) indicate the degree to which the Inyo will try to meet that demand. Chapters III and IV of the EIS analyze the effects of various alternatives on fish habitat.

Further Planning Areas

Issue/Concern: How should Further Planning Areas on the Forest be managed?

- There is a need for more wilderness. (p)
  (EIS Chapters II, IV, and Appendix C)

- There is no need for more or not much more wilderness. (p)
  (EIS Chapters II, IV, and Appendix C)

- Consider watershed values when recommending wilderness. (p)
  (EIS Appendix C)

- Resist the pressure from industry to immediately "road" those areas made available for non-wilderness uses by the California Wilderness Act (thus precluding possible future wilderness recommendations). (p)
  (Prescription #17, Plan Chapter IV)

- Resist the pressure from wilderness advocacy groups to manage non-wilderness areas as "de facto" wilderness. (p)
  (Prescription, Plan Chapter IV)

- Make well-considered recommendations for the wilderness or non-wilderness management of Further Planning Areas. Consider the suitability and manageability of each area for wilderness and the trade-offs between wilderness designation and other resources and activities. (m)
  (EIS Chapters II, IV, and Appendix C)

- There is a need to coordinate Inyo National Forest wilderness recommendations with BLM recommendations for adjoining lands. (m & p)
  (EIS Chapter II)

Response: A detailed analysis of individual Further Planning Areas in terms of wilderness and non-wilderness values is documented in Appendix C of the EIS. A range of wilderness recommendations, ranging from all wilderness to no new wilderness, is displayed in the Benchmarks and Alternatives described in Chapter II of the EIS. The overall effects of various alternatives on Further Planning Areas on the Forest are discussed in Chapter IV of the EIS. Effects on individual areas are discussed in Appendix C of the EIS. Prescription #17 emphasizes retaining the semi-primitive character of an area. Other prescriptions allow for the construction of roads for various purposes. There are no roads scheduled for construction during this planning period in Further Planning Areas.

Plan wilderness recommendations are preliminary administrative recommendations that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. Final decisions on wilderness designation are made by Congress.

Geology

Issue/Concern: What is the role of geologic resources and services in the overall Forest management program?

- There is a potential demand for groundwater as a domestic water source for Mammoth Lakes. (m)
  (EIS Chapters III, IV)

- There is a need to assess groundwater resources on a Forest-wide basis. (m)
  (Plan Appendix A)

- There is a need to recognize and make allowance for the risk to planned Forest projects posed by geologic processes such as landslides, earthquakes, and volcanic events. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- There is a need to protect outstanding geologic features that are vulnerable to damage or destruction. (p & m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

Response: The possible need for domestic groundwater in the Mammoth Lakes area is discussed in Chapters III and IV of the EIS. The need to assess groundwater supplies and to protect those geologic features that are candidates for Special Interest Areas are identified in the Forest-wide Standards and Guidelines. The need to consider risks from geologic processes is handled in the Forest-wide Standards and Guidelines.

Lands

Issue/Concern: What land use and landownership adjustment policies and procedures are needed to respond both to local community needs and to the demands of regional and national publics?

- Should National Forest lands adjacent to growing communities be available (through exchange) for private development programs? (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- As the Mammoth and June Lake communities expand, there is an increasing demand to locate community service facilities on public land under special use permit. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Electric energy conveyors have expressed their need for a future utility corridor paralleling the major north-south interstate Pacific DC Intertie transmission line. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

Response: Priorities for land acquisition, land disposal, special use permits, rights-of-way, and utility corridors are established in the Forest-wide Standards and Guidelines.

Minerals

Issue/Concern: How can the Forest best encourage mineral (including geothermal) exploration and development while protecting surface resource values and other land uses?

- To what extent should National Forest land be available for geothermal exploration and power plant development? (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- What effects would geothermal development have on the environment and on the recreational attractions that support the local economy? (p & m)
  (EIS Chapter IV)

- What are the long-term effects on surface resources and on groundwater of removing geothermal fluids? (p & m)
  (Plan Appendix B)

- Consider the impact of additional wilderness and/or additional mineral withdrawals on mineral activities. (p)
  (EIS Chapter IV)

- There is a need to address the impacts of mineral exploration and development on surface resources such as visual quality, soil stability, vegetation, and wilderness values. (m)
  (EIS Chapter IV)

Response: The Forest-wide Standards and Guidelines establish the degree to which mineral activities can acceptably affect other resources. The analysis of potential effects of mineral activity on other resources and the effects of planning alternatives (including wilderness recommendations) on mineral activities is documented in Chapter IV of the EIS. Management Prescriptions and Management Area Direction in Chapter IV of the Plan set specific standards and guidelines for mineral activity under different management emphases and on specific areas of land.

Pest Management

Issue/Concern: What is the appropriate pest management strategy for the Inyo?

- It is desirable to use cultural, biological, or mechanical controls instead of chemical pesticides. (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV, EIS Chapter III)

Response: The Forest-wide Standards and Guidelines set guidelines for the choice of pest management techniques.

Protection

Issue/Concern: What is the appropriate fire management strategy for the Inyo?

- Allow natural fires to burn in appropriate areas. (p)
  (Prescriptions, Plan Chapter IV)

- There is a need to determine the most cost-effective fire organization for the Inyo National Forest, depending largely on the combination of fire suppression strategies implemented. (m)
  (Prescriptions, Plan Chapter IV)

Response: The Management Prescriptions provide for the suppression strategies of confinement or containment to be applied where life, property and resource values would not be adversely affected; detailed guidelines for fire suppression will be developed as part of the Fire Management Action Plan.

Range

Issue/Concern: How should the Inyo balance the needs of the range program (domestic livestock and wild horses and burros) with the need to protect and/or produce other resources?

- Full fire control contributes to declining range forage outputs. (p)
  (Forest-wide Standards and Guidelines, Prescriptions, Plan Chapter IV)

- Cattle overgraze riparian areas and key wildlife wintering and fawning areas, resulting in increased erosion and loss of vegetation for forage and cover. (p)
  (Forest-wide Standards and Guidelines, Prescriptions, Management Area Direction Plan, Chapter IV)

- The grazing program should not be reduced or prevented from increasing as a result of the issues listed above. (p)
  (Forest Objectives Plan, Chapter IV)

- How many animals are appropriate for a wild horse or burro management territory. How is the range resource equitably apportioned to wild horses and burros, native wildlife, and domestic livestock? (p)
  (Chapter I, existing plans are incorporated, and Appendix A)

- There are many factors limiting the ability of the Forest to meet the President's target for red meat production (46 percent increase over specified base level). (m)
  (EIS Chapters III and IV)

Response: The Forest-wide Standards and Guidelines, Management Prescriptions, and Management Area Direction in Chapter IV of the Plan address the degree to which livestock grazing will be modified to protect other resources. Chapter III of the EIS discusses the limiting factors with regard to the range resource. The full range of fire suppression strategies is considered appropriate for lands with a range management emphasis.

Most wild horse and burro herds are managed under plans that have been developed with significant public involvement. There is one additional plan to be developed on the Forest.

Recreation

Issue/Concern: What is the best recreational opportunity program for the Inyo (considering supply, demand, other resource management and development opportunities, and environmental protection needs)?

- Recreation development is of concern to many people, and of vital concern to some, especially to local area residents. (p)
  (EIS Chapters II and IV, Forest Objectives, Plan Chapter IV)

- The public is collectively interested in the entire range of development options. (p)
  (EIS Chapter I, Forest-wide Standards and Guidelines, Prescriptions, Plan Chapter IV)

- The resource values that attract recreationists to this area are extremely important and should rarely be compromised. (p & m)
  (Forest-wide Standards and Guidelines, Prescriptions, Management Area Direction, Plan Chapter IV)

- The public is dissatisfied with the reduced use seasons and deteriorating facilities they have encountered in recent years. (p & m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- The supply of overnight facilities is falling behind demand. (m)
  (EIS Chapter III, Forest Objectives, Plan Chapter IV)

- Day use facilities, such as trails and interpretive sites, are insufficient to meet needs. (m)
  (Forest-wide Standards and Guidelines, Prescriptions, Plan Chapter IV)

- There are major potential conflicts between recreational developments and small hydroelectric development, geothermal development, and timber harvest in the red fir forest east of San Joaquin Ridge. (m)
  (EIS Chapter IV, Prescriptions, Plan Chapter IV)

- Should more land be made available immediately for added alpine ski area capacity? (p)
  (Prescriptions, Management Area Direction, Plan Chapter IV)

- Alpine ski area potential should not be compromised by other management activities on identified potential ski areas until the demand for skiing begins to level off. (m)
  (Prescriptions, Management Area Direction, Plan Chapter IV)

- Alpine ski areas have impacts on visual quality, soil stability, water quality and quantity, transportation patterns, safety, the local community, and landownership patterns. (m)
  (EIS Chapter IV, Forest-wide Standards and Guidelines, Prescriptions, Plan Chapter IV)

- Community growth in response to increased alpine skiing could negatively affect summer recreation sites on Forest lands near growing communities. (m) (EIS Chapter IV)

- There is a need for more opportunities for OHV use. (p)
  (Forest-wide Standards and Guidelines, Prescriptions, Management Area Direction, Plan Chapter IV)

- There is a need for more restriction on OHV use. (p)
  (Forest-wide Standards and Guidelines, Prescriptions, Management Area Direction, Plan Chapter IV)

- Remove OHV routes from sensitive areas. (p)
  (Forest-wide Standards and Guidelines, Management Area Direction, Plan Chapter IV)

Response: The demand for recreation on the Inyo and the concerns of local residents for the recreation program are discussed in Chapter III of the EIS. Chapter II of the EIS explores a wide range of recreational development options. Chapter IV of the EIS documents the analysis of impacts on recreation by other resources and activities. The Forest Objectives in Chapter IV of the Plan display projected recreation outputs by type over the planning period. Management direction in the Plan provides for the protection of recreation values and for a broad and diverse range of developed and dispersed summer and winter recreation opportunities.

Research Natural Areas

Issue/Concern: What contribution should the Inyo make to the national and regional systems of Research Natural Areas (RNAs)?

- Research Natural Areas should be identified and established. (m & p)
  (EIS Chapter III, Forest-wide Standards and Guidelines, Plan Chapter IV)

- The Inyo should confirm the fact that all botanical RNA targets assigned to the Forest have been met. (m)
  (EIS Chapter III)

Response: Chapter III of the EIS displays the regional Research Natural Area targets for the Inyo and shows how these targets have been met. The Forest-wide Standards and Guidelines call for the establishment of recommended Research Natural Areas.

Riparian Areas

Issue/Concern: What is the significance of riparian areas on the Forest, and how should riparian area-dependent resources be maintained, enhanced, and/or restored?

- Maintain and increase riparian vegetation. (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Livestock grazing, recreation, and water diversion have impacts on riparian areas. (p)
  (EIS Chapter IV, Forest-wide Standards and Guidelines, Plan Chapter IV)

- Energy developments, mineral activities, and timber harvest represent actual or potential conflicts with riparian area-dependent resources. (m)
  (EIS Chapter IV, Forest-wide Standards and Guidelines, Plan Chapter IV)

- Accelerated erosion in wet meadows (including active streambanks and channel degradation) is of special concern. These problems are most severe in the White Mountains and on the Kern Plateau. (m)
  (Forest-wide Standards and Guidelines, Management Area Direction, Plan Chapter IV)

- The current policy of full wildfire control prevents the use of unplanned ignitions to eliminate woody vegetation encroaching on wet meadows. (m)
  (Forest-wide Standards and Guidelines, Prescriptions, Management Area Direction, Plan Chapter IV)

Response: Chapter IV of the EIS documents the analysis of the environmental consequences of various activities on riparian areas. The Forest-wide Standards and Guidelines and Management Prescriptions in Chapter IV of the Plan provide specific measures for the protection of riparian areas. Management Area Direction highlights area-specific riparian area protection or restoration needs.

Sensitive Plants

Issue/Concern: How should the Forest manage habitat for sensitive plant species?

- Protect threatened and endangered species. (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Consider the effects of Forest management on all native plant species. (p)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- What is the best overall approach to managing the sensitive plant program? (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- How should potential conflicts between the needs of sensitive plants and other resources and activities be mitigated? (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

Response: The impacts of alternatives on sensitive plants are discussed in Chapter IV of the EIS; standards and guidelines for protecting sensitive plant habitat are found in the Forest-wide Standards and Guidelines.

Special Interest Areas

Issue/Concern: Should the Forest consider establishing any additional Special Interest Areas?

- Establish special areas to protect archaeological sites, threatened and endangered species, botanical, geological, and visual quality areas. (p)
  (EIS Chapter III)

- The Forest is directed to identify candidates for geologic Special Interest Areas. The Inyo has many outstanding geologic features. (m)
  (Plan Appendix A)

- The Forest needs to evaluate National Natural Landmark nominees proposed by the Department of Interior and to consider nominating other outstanding features on the Forest for National Natural Landmark listing. (m)
  (EIS Chapter III)

Response: The subject of evaluating candidates for National Natural Landmark listing is discussed in Chapter III of the EIS. Geologic Special Interest area candidates are also listed there. The need to evaluate and recommend selected Special Interest Area candidates and National Natural Landmark nominees is identified in the Forest-wide Standards and Guidelines.

Timber

Issue/Concern: What is the best balance between timber (including fuelwood) production, other resource management and development opportunities, and environmental protection needs?

- Establish a regulated forest to meet long-term sustained yield on all available, suitable timber land. (m)
  (Prescriptions, Plan Chapter IV)

- Integrate silvicultural practices with other resource values. (p & m)
  (Prescriptions, Plan Chapter IV)

- Determine the size of the managed timber base, resolving conflicts between timber and other resources. (m)
  (Prescriptions, Plan Chapter IV)

- Provide public-use fuelwood to meet demand. (p)
  (Forest Objectives, Plan Chapter IV)

- Maintain the opportunity for active management of pinyon-juniper. (p & m)
  (Prescriptions, Plan Chapter IV)

- Consider the conflict between public fuelwood gathering and other values such as wildlife habitat and unique or outstanding vegetation types. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

Response: The assignment of Management Prescriptions in the Plan resolves conflicts between timber and other resources, establishes the size of the managed timber base, and provides for a regulated forest on lands with a primary timber emphasis. The content of those prescriptions integrates silvicultural practices with other resource values.

Forest-wide Standards and Guidelines deal with potential conflicts between fuelwood cutting and other resource values. The output tables for Forest Objectives in Chapter IV of the Plan indicate projected fuelwood outputs over the planning period. None of the proposed Management Prescriptions would preclude future opportunities for active pinyon-juniper management.

Visual Resources

Issue/Concern: What role does visual quality play in the overall resource management program, and how can that quality be protected and enhanced?

- Maintain and manage for visual quality. (p)
  (Forest-wide Standards and Guidelines, Prescriptions, Plan Chapter IV)

- Resolve conflicts between visual quality and other resources. (m)
  (Prescriptions, Plan Chapter IV)

- Maintain or enhance current visual resources and scenic attractions. (m)
  (Prescriptions, Plan Chapter IV)

Response: The Forest-wide Standards and Guidelines set the stage for management of visual resources. Each management prescription includes an assigned Visual Quality Objective (VQO).

Watershed

Issue/Concern: How should the Forest respond to the needs for water quality, increased water yields, water rights for Forest resource management, and healthy watershed condition?

- Soil productivity is declining. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- There is a need to rehabilitate damaged or deteriorated watersheds. (m)
  (Forest-wide Standards and Guidelines, Management Area Direction, Plan Chapter IV)

- Adopt policies in timber management, grazing, and recreation that enhance watersheds. (m)
  (Prescriptions, Plan Chapter IV)

- There is a lack of legal mechanisms for obtaining water rights for nonconsumptive water uses (those dependent on water in place). (m)
  (EIS Chapter III)

- There is a public demand for more water yield and availability. (p & m)
  (EIS Chapters II and III)

- There is competition between consumptive and nonconsumptive water uses. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

Response: The Forest-wide Standards and Guidelines establish direction that address the long-term productivity of the soil, water quality, watershed rehabilitation needs, and the need for instream flow to support nonconsumptive uses. Management Prescriptions indicate the watershed management direction compatible with different management emphases. Management Area Direction highlights priority watershed improvement needs. Chapter III of the EIS discusses the question of water rights for

nonconsumptive uses. Chapter III also discusses opportunities to increase water yield. The maximum water yield benchmark presented in Chapter II displays the maximum potential to increase yield.

Wild and Scenic Rivers

Issue/Concern: What recommendations should the Forest make for the management of candidate wild and scenic rivers?

- Potential additions to the wild and scenic rivers system should not be threatened. (p)
  (Prescriptions, Plan Chapter IV)

- Preserve free-flowing rivers unspoiled in their natural state and consider for wild and scenic rivers system. (p)
  (Prescriptions, Plan Chapter IV)

- Assess candidate rivers for inclusion in the wild and scenic rivers system. (m)
  (EIS Chapter II)

Response: The Plan assesses the wild and scenic river candidate on the Forest and recommends it for designation. This is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, Secretary of Agriculture, and the President of the United States. Congress has the authority to designate rivers to the National Wild and Scenic Rivers System.

The Management Prescription for wild and scenic rivers applies to the recommended wild and scenic river, thus protecting it until final designation. EIS Chapter II discusses the reasons that the Forest applies this prescription to the same river segments in all alternatives.

Wilderness

Issue/Concern: Is there any need for change in the management of designated wilderness on the Forest?

- Examine existing wilderness management plans for consistency and responsiveness to current conditions. Provide for the needed changes in the Plan. (p & m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- There is a need to establish direction for wilderness designated by the California Wilderness Act of 1984. (p & m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

Response: The Forest-wide Standards and Guidelines calls for the examination and amendment of existing plans and the development of new plans as needed.

Wildlife

Issue/Concern: How, where, and to what degree should wildlife habitat be maintained and enhanced, and how should wildlife needs be coordinated with other resource management and development opportunities on the Forest?

- What is a desirable level of diversity, amount, and distribution of wildlife habitat? (p & m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- What relative emphasis should be given to habitat for the various wildlife species? (p & m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- How should wildlife needs be balanced with the needs of competing resources? (p & m)
  (Prescriptions, Plan Chapter IV)

- Full control of wildfires reduces habitat for wildlife dependent on early seral stages. (m)
  (Prescriptions, Plan Chapter IV)

- What contribution can management make to the growing demand for wildlife-related recreation (hunting and nature study)?
  (EIS Chapter III, Forest Objectives, Plan Chapter IV)

- Deer numbers have declined over the past twenty to thirty years. (p & m)
  (Forest-wide Standards and Guidelines, Prescriptions, Plan Chapter IV, Appendix B)

- The Forest must analyze the opportunities for meeting the 1980 RPA Program goal of increasing mule deer numbers 20 percent. (m)
  (EIS Chapter II)

- Sage grouse populations are declining. (p & m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Blue grouse habitat should be protected. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- There is a need to manage endangered species on the Forest (bald eagle and peregrine falcon) for species recovery. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- How many goshawk nest sites are needed to maintain population viability? How many of these sites should be maintained in stands of suitable timber? (m)
  (EIS Chapter II)

- Sierra Nevada mountain sheep should be reintroduced into historic range. (p & m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- The management of Nelson mountain sheep should be emphasized. (p)
  (Forest-wide Standards and Guidelines, Prescriptions, Plan Chapter IV)

- Protect habitat for sensitive and special interest species not addressed in specific issues or concerns. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Maintain enough snags, down logs, and overall habitat diversity to ensure population viability for snag-dependent species. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- The Forest would have difficulty meeting the 1980 RPA Program goal for cavity-nesting birds while meeting the RPA timber target. (m)
  (EIS Chapter IV

- Manage riparian habitat to ensure the viability of riparian-dependent wildlife. (p & m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

- Manage Great Basin shrub habitat types so that the viability of wildlife dependent on early seral stages is ensured. (m)
  (Forest-wide Standards and Guidelines, Plan Chapter IV)

Response: Wildlife habitat protection needs are addressed by species, or group of species, in the Forest-wide Standards and Guidelines. The interaction of wildlife needs with other resources is handled in various Management Prescriptions. Mountain sheep and mule deer habitat are the primary emphases of two Management Prescriptions. Needed inventories and implementation plans are listed in Appendix A; research needs are listed in Appendix B. The demand for hunting is presented in Chapter III of the EIS, and the potential of the Forest to provide hunting is analyzed in the Benchmarks and Alternatives in Chapter II. The output tables in Forest Objectives (Chapter IV of the Plan) indicate the hunting outputs projected for the planning period. Problems with meeting RPA goals are addressed under consequences of the RPA Alternative displayed in Chapter IV of the EIS. The full range of fire suppression strategies are considered appropriate on many Forest lands.

CHAPTER III

Gordon Wiltsie

Summary Analysis of the Management Situation

CHAPTER III. Summary of the Analysis of the Management Situation

Introduction

This chapter is a summary of the Analysis of Management Situation (AMS) document. The complete AMS has not been reproduced in these planning documents, but is in the process records at the Forest Supervisor's office in Bishop. The AMS is the preliminary to the Draft Forest Plan. It reviews current management and its long-range implications, supply and demand projections, public issues and management concerns, and opportunities to establish or change direction. The Plan reflects these factors.

The chapter is divided into two sections: (1) Social and Economic Environments and (2) Resource Environment.

Social and Economic Environments

This section provides a general overview of the social and economic factors that are relevant to Inyo National Forest management.

Sphere of Economic Influence

The Inyo National Forest contains 2,046,346 acres. 1,931,115 are in National Forest System ownership. These lands are located in seven counties. Five counties are in California, two in Nevada.

The primary zone of economic influence for the Inyo National Forest is in California's Inyo and Mono Counties. Nearly 85 percent of the Forest lies within those counties, and more than 95 percent of the Forest lies within the State of California. Ninety percent of Inyo County, the second largest county in the state, and more than 75 percent of Mono County are administered by the federal government. Currently, all timber harvesting conducted by the Inyo National Forest and more than 90 percent of recreational activity take place in these two counties. Recreational activities on the Forest are closely linked to the tourist economy of these counties.

In contrast, the Forest has a relatively limited economic impact on the California counties of Tulare, Madera, and Fresno and on the Nevada counties of Mineral and Esmeralda. This economic situation is not expected to change in the foreseeable future.

Residents of Southern California, primarily those from San Diego, Los Angeles, Orange, Ventura, Riverside, and San Bernardino Counties, make heavy use of the Forest's numerous recreational facilities and resources, such as alpine ski areas, campgrounds, and wilderness. The demand for recreational opportunities by Southern Californians has an economic impact on the Forest and on many of the communities near the Forest. The impact of the Inyo National Forest on Southern California is, however, negligible.

Population

Population growth in Inyo and Mono Counties during the past two decades has been substantial. Mono County grew by more than 113 percent between 1970 and 1980. This ranked the county second among the fastest growing counties in the state. This rapid growth rate can be attributed to the recreational importance of the Mammoth Lakes area.

During the same decade, the Inyo County population grew 15 percent, lower than the state average of 18 percent. Most of this growth took place in and around the community of Bishop, which serves as a service center for the two-county area. Major employers in the area are local, state, and federal governments.

Employment

The economy of the area reflects the importance of recreation, tourism, and the public sector. The three employment categories of services, retail sales, and government together accounted for nearly three quarters of the total wages and salary for workers in 1980. The employment base has grown by nearly 75 percent in the past decade. The services and retail sales categories have enjoyed healthy employment gains, while government employment levels have tapered off and recently recorded some declines.

The high unemployment rates commonly found in tourist-oriented economies are found in the Inyo-Mono area. Rapid population growth, a broadening of the work force, the lack of diversification in the rural economy, and the seasonal nature of the tourist industry have resulted in unemployment rates generally higher than the state average.

Role of the Inyo National Forest

The Forest makes a direct contribution to the area economy through expenditures in the private sector, the generation of jobs, recreational opportunities, and payments into county revenues. Forest expenditures for payroll and procurements in Fiscal Year 1982 were $8.55 million.

Payments into county revenues are from two sources: Payment in Lieu of Taxes and Receipts Act payments. Payment in Lieu of Taxes payments compensate counties for the loss of property tax revenues represented by nontaxable federal land within the county. In 1980, the total Payment in Lieu of Taxes payment to counties by the Inyo National Forest was $165,180.

Receipts Act payments are based on fees collected for use of Forest lands and resources. Twenty-five percent of dollars received by the federal treasury from activities such as timber sales, special use permits, and campground fees are distributed through the Forest Service to the counties to offset school and road costs. Total Inyo National Forest Receipts Act payments for Fiscal Year 1980 amounted to $385,003.

The Forest also provides indirect economic benefits to the public by supplying certain goods and services at prices below established or estimated

market values. Examples include outdoor recreation opportunities and Forest lands for the use of commercial enterprises such as livestock production, apiaries, mineral and energy exploration and development, and water production.

Future Trends

Economic growth in the area is expected to continue much as it did in the 1970s, increasing overall. As economic growth continues, the resident population and the pressure for more services will increase. Larger communities such as June Lake and Lone Pine will be stimulated to consider incorporation. Furthermore, it is expected that an increased local population could stabilize the fluctuating tourism economy of the 1970s. However, unless the communities actively seek economic diversity by attracting manufacturing industries to the area, little change is foreseen.

The economic foundation of the area will remain closely tied to increased recreation use and tourism. An increased demand for all Forest resources and services, especially those related to recreation, can be expected. The greatest impacts on Forest management are likely to be found in the areas of landownership adjustments and land uses, scenic quality, and the Forest's role in providing a variety of recreational opportunities. The demand for energy production and water yield are also likely to increase with increases in population, both locally and elsewhere in California.

Economics in Forest Planning

National Forest land is public land, and its value accrues to the public. The value of Forest land and resources is of two kinds: products with economic value and those that do not lend themselves to economic quantification, such as appreciation of the visual resource. The need to manage Forest lands and resources in a way that will provide the greatest net public benefit, taking both kinds of values into consideration, is both a public issue and a management concern.

Economic efficiency analysis determines the effects of different management strategies on the economic values of Forest resources, using the measure of Present Net Value (PNV). The benefit components of PNV are the commodity values of recreation (including wildlife and fish-related recreation), water, energy, timber, and grazing. The cost components of PNV include such factors as Forest management expenditures, resource losses, and the opportunity costs of producing non-priced benefits. Opportunity costs are those values that are lost by choosing one resource over another. PNV plus all non-priced benefits represent net public benefit.

Sphere of Social Influence

Inyo and Mono Counties comprise the primary zone of social influence for the Forest. The lifestyles, quality of life, and social values of the individuals in this area are to varying degrees dependent upon Forest resources and facilities.

Both Inyo and Mono Counties are rural and sparsely populated, ranking 57th and 55th respectively in population density among the 58 California counties. Population increases for these counties, in terms of total numbers, are insignificant when compared to state-wide totals. Nevertheless, Mono County ranked second in the state in percent population increase between 1970 and 1980. Over the past twenty years, population growth for the two counties averaged about 630 people per year with net in-migration making up more than 30 percent of the total population gains. This growth rate is expected to subside gradually and to level out by the year 2020.

The median age for the two-county area is about 34.5 years, well above the 30.8-year median age for the state. This fact is due, in part, to the area's recreational opportunities which attract retired senior citizens. Personal income averages about $14,300. The area is over 90 percent White (of which 5.6 percent is of Hispanic background), and 7.3 percent American Indian, with Black, Asian, and other races together making up less than 3 percent of the total population of the area.

Paramount to the quality of life is the sense of open space, rugged terrain, scenic qualities, clean air and water, and the abundant recreational opportunities which the Forest provides. The natural resource attributes of the area are coupled with the social attributes of low population density, slow growth, simple lifestyles, small communities, limited services, and a prevailing feeling of self-sufficiency and individualism.

As the primary zone of Forest influence, the Inyo-Mono area is expected to receive direct, identifiable, and measurable benefits and impacts from the Forest's management and policies. The two counties have important ties to the Forest through landownership patterns, land uses, energy production, grazing, fuelwood supplies, fire protection, timber production, and recreational opportunities.

Southern California is a secondary zone of social influence for the Forest. Southern California's demand for recreation affects the Forest and many of the communities in the primary zone of influence. The social impact of the Forest on Southern California however, while it may be important, is lost in that area's large size, huge metropolitan population, and broadly diverse social structure.

Social Groups

Management direction and resource outputs of the Inyo National Forest affect several local social groups, each of which places different demands and values on Forest resources. Six major social groups have been identified within the primary zone of influence. Those groups are: long-time residents, regional recreationists, seasonal employees, special use permittees, American Indians, and retirees.

Social groups are categories of people based on shared activities, interests, and concerns. They are not mutually exclusive, as an individual may belong to more than one group. However, the consequences of Forest management and policies are similar for individuals within a group and somewhat dissimilar between groups. Although not expected to describe all individuals within a

given group, the following group characteristics are expected to apply in general terms for the purpose of evaluating the social impacts of Forest decisions in the Forest planning process.

Long-time residents are a diverse group of people identified primarily as having lived in the area for ten years or longer. This large group is found working in every sector of the local economy including mining, retail sales, ranching, logging, recreation, and services.

The long-time resident tends to be strongly self-reliant, believes in the importance of hard work, holds to traditional values, and wants to live in a rural area. Because the Forest holds abundant opportunities for mining and prospecting, offers much grazing land, and provides over five million visitor days of recreation annually, Forest policies potentially affect many of the long-time residents in the primary zone of influence.

Regional recreationists are attracted to the area to enjoy a recreation-oriented lifestyle. This group includes second-home owners and those who enjoy the area for summer vacations and weekend winter skiing. The latter group is particularly important to the economy of the area.

Recreational visitors place great demands on the area and have high expectations for their recreational pursuits. These individuals fuel a major portion of the winter tourist economy and a substantial portion of the summer economy as well. While this social group is composed of many subgroups, its members have some common values. They want to enjoy themselves, and they value the broad range of recreational opportunities and the scenic attractions of the area.

Second-home owners doubled in number between 1970 and 1980. Increased speculation and real estate investments drove housing and rental costs up substantially during this time period. There has been a recent slowing in second-home investments; however, as interest rates decline, as additional skiing is developed, and as concern over potential volcanic activity subsides, expansion will probably resume.

Seasonal employees who reside in the area are typically young individuals with a primary goal of pursuing an outdoor lifestyle. Earning a living is often a secondary goal. If they are not able to obtain full-time employment, they are dependent upon the large seasonal employment market in the area.

There are currently 972 special use permits on the Inyo National Forest, governing land uses on 34,960 acres of Forest land. Special use permits are issued for a variety of purposes, including agricultural, industrial, recreational, research, transportation, and water uses. Special use permittees are especially important to communities such as Mammoth and June Lake, both of which have alpine ski areas on Forest land under special use permit. In 1980, the 546 recreation special use permits alone brought more than $1.29 million to the federal treasury, 25 percent of which was returned to local county governments. The Forest ranks first in the nation in revenues received from recreation special use permits.

Nearly 2,000 Paiute-Shoshone Indians live on reservations in the Big Pine, Lone Pine, and Bishop areas of Inyo county. The Indian way of life, beliefs,

and values are interwoven with nature, the environment, and the mountains of the area. Many Indian religious sites, spiritual areas, and traditional food-gathering areas are located on National Forest land. The Indian usually favors protection of the Forest; however, because of their long history of residence in the area, they sometimes feel that their rights derived from traditional use should exempt them from certain regulations. Increased pressure on Forest resources will continue to bring about management limitations and potential conflicts with traditional American Indian uses.

Senior citizens, a segment of the population whose numbers are increasing, are attracted to the area because of its recreational opportunities, relaxed pace of life, and rural environment. Many retirees come to the area from Southern California.

As retirees come to the area because of its rural and natural appeal and recreational opportunities, this group supports protection of many of the recreational and visual resources. Many retirees do, however, want vehicle access to the Forest and are only selectively supportive of issues such as wilderness recommendations. They are also often concerned about policies such as length-of-stay limitations in developed campgrounds.

Because their income is not closely tied to market outputs, retirees are unlikely to have a strong interest in timber or grazing production unless recreational or visual resources are directly affected. One exception, however, is the availability of fuelwood, which is used by the majority of people in the area to defray high energy costs for home heating during the winter.

Resource Environment

Each resource is discussed under the subheadings of current management and opportunities for change, supply and demand if appropriate, and Plan management emphasis. Current management and supply and demand are expressed in terms of 1982 as a base year unless otherwise indicated in the text.

Air Quality

Current Direction and Opportunities for Change

Air quality on the Inyo National Forest is currently managed so that activities on National Forest land meet state air basin objectives. Dust from unpaved roads and smoke from prescribed burning or wildfire are the Forest activities that receive the most emphasis in terms of air quality considerations. There is no evident need for change in management. However, Air Quality Related Values and their indicators need to be determined for areas designated as Class I for monitoring purposes to assess the possible need for change in management. In addition, smoke management plans need to be developed in conjunction with Fire Management Action Plans and Environmental Assessments for prescribed burning.

Supply and Demand

Air quality on Inyo National Forest lands meets or exceeds state air basin objectives more than 99 percent of the time. There are some days, however, on which air quality drops below objectives due to events on neighboring off-Forest lands. Windborne dust from dry lakes and agricultural lands and smoke from wood heating in local communities are the most common sources.

The demand for clean air as a recreational attraction on the Forest and throughout the Eastern Sierra is very high.

Plan Management Emphasis

Current management direction will continue. In addition, Air Quality Related Values and their indicators will be developed for Class I areas, and smoke management plans will be developed in conjunction with fire management planning.

Cultural Resources

Current Direction and Opportunities for Change

Most cultural resource inventory and evaluation on the Forest occurs in preparation for actions that have the potential to affect cultural values. Non-project inventory has occurred primarily through the efforts of outside researchers. In the past, 95 percent of the inventory took place in timber compartments. The timber base is now approximately 90 percent inventoried and mandatory historic preservation compliance work undertaken in support of timber activities involves re-entry into areas that have received extensive surveys. As a consequence, much less actual inventory is being accomplished than in the past--approximately 1,000 new acres per year.

Compliance requirements for project implementation rely primarily on surveys to locate cultural resources and subsequent avoidance of impacts to those resources (protection). The State Historic Preservation Officers in California and Nevada, the Advisory Council on Historic Preservation and the Keeper of the National Register are consulted in accordance with 36 CFR 800. Other consulting parties as defined in 36 CFR 800, especially Native American groups, are consulted as appropriate. Formal site evaluation, including test excavations, and mitigation of adverse impacts where necessary are used to meet compliance requirements. Copies of all site and survey documentation are supplied to the State Archaeological Inventories.

The Forest has taken steps to replace the traditional site-specific, project-specific approach to compliance requirements. Memoranda of Understanding (MOU) between the Forest and the California State Historic Preservation Officer regarding over-the-snow logging and "no effect" projects are now in effect. Formerly, compliance requirements entailed project by project consultation with the State Historic Preservation Officer and the Council. With these Memoranda of Understanding, compliance requirements on many projects are met with an annual report. Additionally, the Forest has concluded a programmatic agreement with the California State Historic Preservation Officer and the Council for the treatment of piagi procurement

sites. Again, mandatory consultation has been reduced from a project-by-project basis to a biennial report. This agreement also reduces the number of acres taken out of timber production for cultural resources protection.

Programmatic treatment plans are being developed on a Regional level for such site types as railroad logging sites, sparse lithic scatters, bedrock mortars, and historic dumps. The Forest is involved in the preparation of these treatment plans and will benefit from their implementation.

There is an opportunity to replace the current site-specific approach to compliance requirements (which is time-consuming and labor-intensive) with a more efficient type-of-site and type-of-undertaking compliance process involving programmatic Memoranda of Agreement with the appropriate state offices.

Cultural resource interpretation on the Forest is conducted at a rudimentary level under the interpretive services program. Protection and enhancement of historical and archaeological sites would benefit from increased public awareness of cultural resources and of the laws protecting them.

Supply and Demand

Current research indicates that eastern California and western Nevada have been occupied for at least the past 10,000 years. The most recent prehistoric inhabitants include the Northern Paiute, Shoshone, Miwok, Washo, Kawaiisu, Tubatulabal, Koso, and Monache. The Euro-Americans who arrived in the early 1900s used the Forest primarily for timber harvest, mining, and ranching.

The density of cultural sites on the Inyo National Forest averages 1 per 59 acres (contrasted with 1 per 105 acres on the Angeles National Forest and 1 per 245 acres on the Tahoe). It is estimated that the Forest contains 35,000 or more sites.

As of October 1, 1983, 97,000 acres had been inventoried, most of that in the Jeffrey pine forest on the northern third of the Forest. Approximately 1,500 prehistoric and 200 historic sites had been identified. Of the sites identified, 45 had been formally evaluated for the National Register of Historic Places. Fourteen were determined eligible and/or actually nominated. These sites are listed below by state trinomial or by name:

Mono County: Ca-Mno-11, -34, -446, -471 H, -529, -542, -823, -1644, -1645.
Inyo County: CA-Iny-1308, -2285, Lon Chaney's Cabin, Tuttle Creek Ashram.

The remaining sites need to be evaluated in order to meet legal requirements. Evaluation of prehistoric sites will be based on the research needs proposed in the 1978 Prehistoric Overview and on subsequent work done in the region. The Overview and most regional research is guided by the theoretical paradigm of human cultural ecology. There is a recognized need to refine regional chronologies, establish settlement/subsistence models, and to pursue long-range research on questions such as the trans-Sierran trade,

the development of irrigation and food production in the Owens Valley, and the rise of complex social organization. Evaluation of historic sites will be greatly facilitated by completion of an Historic Overview.

National Register properties need to be maintained so that their integrity is preserved. This can be done through a program of "arrested decay" to prevent further natural deterioration as well as the prevention of vandalism. National Register properties provide good opportunities for interpretation. Approximately 1.9 million acres on the Forest need more intensive inventory. Details are displayed in the Forest Cultural Resource Management Atlas.

Plan Management Emphasis

Programmatic treatment plans will continue to be developed at the Regional and Forest level. Compliance measures other than the traditional protection mode will be carried out in consultation with State Historic Preservation Officers and other appropriate entities as more land is needed for management activities. Cultural resources interpretation will be developed within the context of the total Forest recreation program. Enhancement opportunities will be pursued in association with both the interpretive program and the preservation of significant sites.

Diversity

Current Direction and Opportunities for Change

Vegetative diversity is currently affected by Forest Service management activities associated with timber and range production, wildlife habitat, watershed management, energy and mineral activities, recreation, and fire suppression.

The best opportunities on the Inyo to increase vegetative diversity without conflicting with other resources are in the shrub and pinyon-juniper vegetation types.

Supply and Demand

Diversity is much more than the juxtaposition and types of vegetation communities. It is a combination of physical and biological phenomena that comprise habitats and the species that occupy these habitats: plant species, seral stages, crown closure, vegetation structure, snags, down logs, physiographic features and a myriad of other parameters.

During the last 150 years, the location and species composition of ecosystems on the Forest have changed little, although the seral stages, relative extent and condition of those ecosystems have changed considerably. Diversity appears to be slowly decreasing Forest-wide.

Vegetative diversity on the Inyo National Forest has been changed from natural levels primarily through water diversion, affecting the extent of riparian areas; past overgrazing, affecting the condition of riparian areas and wet meadows; fire suppression, reducing the seral stage diversity of brush and allowing woody vegetation to encroach on meadows by preventing

natural fire-caused rejuvenation; and commercial timber management, reducing the extent of older seral stages of coniferous forests.

The demand for diversity on the Forest focuses primarily on riparian areas for their visual, recreational, wildlife, fish, and grazing values; on the coniferous forest for its wildlife habitat benefits; and on diversity of brush seral stages for livestock and wildlife forage.

Plan Management Emphasis

Vegetative diversity will be managed under specific direction in the Plan. Diversity of seral stages and the maintenance of key components, such as old growth, riparian areas, and snags will be managed to prescribed levels. The effects of fire suppression on seral stages of brush will be offset by a program of vegetation treatment for range and wildlife benefit. Prescribed fire and the suppression strategies of confinement and containment will be used where appropriate.

Energy: Geothermal (SEE MINERALS: LEASABLE)

Energy: Hydroelectric

Current Direction and Opportunities for Change

Small hydroelectric licenses are issued by the Federal Energy Regulatory Commission (FERC). Special use permits for small hydroelectric developments on National Forest land are issued by the Forest Service. Each special use permit application is handled individually. An environmental analysis is conducted to estimate environmental impacts, and mitigation of potential impacts is prescribed. It would be desirable to establish specific conditions that must be met when hydroelectric projects are developed. Direction of that sort would improve consistency of treatment and facilitate the evaluation of individual projects in light of the cumulative impacts represented by many projects.

Supply and Demand

The Inyo National Forest has a significant potential small hydroelectric resource, including the two major components necessary for hydro development: perennial water flow and rapid change in elevation. Six small hydroelectric projects are currently operating and fifteen additional applications have been submitted for fifteen streams on the Forest. Major hydroelectric projects affect four streams on the Forest.

The demand for energy has increased in recent years as a result of the national desire for energy self-sufficiency and the search for an inexpensive, nonpolluting energy source. There is, however, some question whether the demand for small hydroelectric projects as an energy source will prove cost-effective when all resources are considered.

Plan Management Emphasis

The Plan establishes specific direction for the protection of riparian vegetation, water quality, fish and wildlife habitat, visual quality, and recreational opportunities. That direction collectively provides the conditions necessary for evaluating small hydroelectric applications.

Energy: Wind Power

Current Direction and Opportunities for Change

Wind farms would also require both a license from the Federal Energy Regulatory Commission and a special use permit from the Forest Service. There is no specific direction governing wind farm evaluation, except the policy that energy production be considered a National Forest resource.

Supply and Demand

The suitability of Inyo National Forest land for wind power is not well known. A wind farm application has been received for a site in the Sherwin Grade area, and industry representatives estimate that the Forest could have the potential for two additional sites, probably at higher elevations in the White or Inyo Mountains. Preliminary studies indicate, however, that wind patterns on the Inyo may not be suitable for power generation.

The demand for energy is well established and expected to increase, but the demand for wind as an energy source is just beginning to emerge, and its cost-efficiency on the Forest is unknown. It is difficult to predict a future trend at this time.

Plan Management Emphasis

The Plan acknowledges energy as a National Forest resource. Individual projects will be evaluated in terms of established Visual Quality Objectives, soil stability, other affected resource values, and the management direction for the lands on which the proposed site is located.

Facilities

Current Direction and Opportunities for Change

Current direction for Forest administrative sites calls for eliminating maintenance backlogs, constructing additional facilities where needed, and considering the relocation of facilities where problems have been identified. Current direction is adequate and should be incorporated intact.

Airstrips on National Forest land are managed under special use permit. Although there are some problems with existing permits, current direction is adequate to handle them.

Dams on the Forest are either owned by the Forest Service or operated under special use permit. Dams are maintained regularly to ensure that they pose no safety threat. There is no need to establish or change direction.

Forest Highways are designated and maintained Forest roads under the jurisdiction of a public authority such as state or county. Current direction for their management is adequate.

Mass transit is considered an option where road capacity is limited or where concentrated vehicle use threatens to damage natural resources. Details are addressed on a case-by-case basis. There is no need for change in this direction.

Roads on the Forest are operated and maintained either by the Forest Service or by the state or county in agreement with the Forest Service. Although those agreements need to be reviewed regularly and adjusted in individual cases, the overall direction for doing so is adequate. Forest roads are maintained to assigned maintenance levels and reconstructed on a programmed basis.

The Forest trail system currently emphasizes wilderness trails, which are managed under direction in individual wilderness management plans. Trails are maintained to assigned levels and reconstructed on a programmed basis. There is, however, a need for more emphasis on non-wilderness day-use trails, including hiking, equestrian, angler access, bicycle, interpretive, and nordic ski trails.

The Pacific Crest Trail and two National Recreation Trails (Whitney Portal and Methuselah) cross the Forest. They are managed under individual management plans.

The subject of borrow sites is addressed under the heading of Minerals: Mineral Materials.

Supply and Demand

The Forest has eighty-six buildings at seven administrative locations. Of these, all but one are federally owned (the Forest Supervisor's office in Bishop is leased from a private party). Fifty of these buildings are in good condition, twenty-three are rated fair, and thirteen are rated poor. There is a minor need for additional capacity at existing sites and the need to build a Visitor Center for the recently established Mono Basin National Forest Scenic Area. Once those needs are satisfied, demand is expected to stabilize.

The existing airstrips in the area are adequate to meet current and projected demand.

There are eighteen dams on Forest land. Three are owned by the Forest Service; fifteen by utility companies. Although one of the proposed small hydroelectric projects could include a small dam, most would divert water rather than impounding it. No new sites for major dams have been identified on the Forest.

There are thirteen Forest roads that are designated Forest Highways. They are located throughout the Forest.

There is one major mass transit system on the Forest and several smaller ones. The demand for additional systems could increase with increasing recreation use of the Forest, as established routes approach capacity and resource damage is threatened in heavily used areas.

The Inyo National Forest has 32 miles of arterial roads, 201 miles of collector roads, 741 miles of local roads, and an estimated 300 miles of uninventoried roads. These roads are used primarily for public recreation access, administration, fire protection, and commercial timber transport. Recreation use on the Forest is expected to increase; however, the current arterial/collector road system should meet the recreational demand for the next ten to fifteen years because most of the projected recreational facilities will be built adjacent or close to these roads.

No new construction is anticipated in support of the Forest timber management program. Arterial/collector/local road construction that could be needed to support approved geothermal development will be constructed by the developer to Forest Service standards. An estimated twelve miles of road will be constructed if geothermal facilities develop in Lease Blocks I and II. There is no reasonable estimate of the location or mileage of mining roads that could be built. The existing program of bringing roads up to appropriate standards for the reduction of soil loss will be completed within the planning period.

The Forest has 1,236 miles of hiker and equestrian trails, of which approximately 705 miles are in wilderness. The demand for trails will increase with increasing recreation use, primarily in concentrated recreation areas and recommended wilderness. The demand for off-highway vehicle (OHV) and nordic ski trails will also increase. Increased demand for trails in designated wilderness is limited by the trailhead quota system.

Plan Management Emphasis

Current direction continues unchanged for most aspects of facility management. However, the non-wilderness trail system receives additional emphasis because of projected increases in use at existing concentrated recreation areas, expansion of winter recreation opportunties, wilderness recommendations, and increased interest in semi-primitive motorized recreation.

Fish

Current Direction and Opportunities for Change

Fish habitat management on the Forest currently emphasizes the protection of fish habitat quality through application of Best Management Practices for water quality protection, the restoration of golden trout habitat on the Kern Plateau, and the recovery of threatened Paiute and Lahontan cutthroat trout.

Potential conflicts between fish habitat needs and other activities arise wherever water quality or the amount of instream flow is reduced. Water quality on the Inyo is most susceptible to sedimentation from livestock grazing, concentrated recreation use, ski area development, and other facility development. The activities most likely to affect instream flow are hydroelectric development and consumptive water uses such as geothermal energy development and municipal use.

The Management Indicator Species (MIS) concept is currently being adopted on the Forest. Management indicator species represent other species with similar habitat needs. Virtually all resident trout on the Forest are considered management indicator species. The most sensitive reproducing species in a given reach of stream is considered the management indicator species for that reach.

Supply and Demand

Inyo National Forest fish habitat includes about 1,100 miles of stream and several hundred lakes. Habitat condition in most streams is rated medium to high. Streams rated medium or low either lack fish habitat due to physical characteristics such as steep gradients, or they have been damaged by past livestock grazing, heavy recreation use, and/or water diversion. Lake fish habitat quality is generally high. More than 90 percent of resident fish on the Forest are found in lakes. The remainder inhabit streams.

Waters on National Forest land contain rainbow trout, brook trout, brown trout, Colorado cutthroat trout, Lahontan cutthroat trout, Paiute cutthroat trout, golden trout, western sucker, and Owens sucker. The golden trout, western and Owens suckers and rainbow trout in the Kern River are the only native species known to reside on the Forest. Reproducing brown, brook, and rainbow trout are common. Golden trout and the suckers are limited in distribution, but common where found. A few other native species inhabit neighboring Bureau of Land Management land and private land within the Forest boundary.

The demand for trout fishing on the Forest is high. Fishing represented 340,000 Wildlife and Fish User Days in 1982. This demand is expected to increase. Resident trout habitat enhancement alone is not capable of increasing fish production to meet that demand. Much of the existing fishing load is borne by hatchery-stocked fisheries.

Plan Management Emphasis

The Plan carries forward the current fish habitat management emphasis. The Plan also directs that fisheries in concentrated recreation areas be maintained or enhanced to provide more fishing opportunities and that selected stream reaches be rewatered as part of negotiations associated with the hydroelectric relicensing process.

Further Planning Areas

Current Direction and Opportunities for Change

Further Planning Areas are unroaded lands with identified wilderness potential. Current direction is to evaluate these areas as part of the planning process and to make recommendations in the Plan for their future management as wilderness or non-wilderness.

The Forest needs to establish a management emphasis, either wilderness or non-wilderness, for all Further Planning Areas. No lands on the Forest are to remain in Further Planning status after the Plan is approved.

The Forest has the opportunity to recommend additional acreage for wilderness designation. These recommendations are preliminary administrative recommendations that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United states. Final decisions on wilderness designation are the purview of Congress.

Supply and Demand

The Inyo National Forest has 1,008,282 acres of land that were inventoried as roadless by the Roadless Area Review and Evaluation (RARE II) study. Of those acres, 46,146 acres were designated wilderness by the California Wilderness Act; 338,319 acres released by that Act for non-wilderness management; and 576,517 acres remained in the Further Planning category. In addition, there are 47,300 acres of inventoried roadless areas in Nevada.

Most Further Planning Areas on the Forest are substantially lower in user capacity and recreational attractions than existing wilderness. The supply of wilderness recreation opportunities on the areas is therefore low relative to the acreage available.

The demand for wilderness recreation on the Forest is very high. Existing wildernesses are managed under a trailhead quota system, so that use does not exceed established capacity and the quality of the wilderness experience is maintained. Quotas are essentially full during the summer peak use season. The demand for wilderness designation on the Inyo as a means of protecting unique and sensitive ecosystems is also present. That demand focuses on the desirability of wilderness in the White and Inyo Mountains.

There is also a demand for non-wilderness uses in Further Planning Areas. Some of the existing and potential uses that would conflict with wilderness designation are: dispersed vehicle-based recreation, road access for mineral exploration and development, and vegetative manipulation for livestock range or wildlife habitat improvement.

Plan Management Emphasis

The Plan recommends approximately 172,600 acres (28 percent) of Further Planning lands for wilderness designation and prescribes non-wilderness uses on the remaining 451,217 acres.

Geology

Current Direction and Opportunities for Change

Geology involves both resources (groundwater, mineral materials, outstanding geologic features) and risks associated with geologic processes. The Forest has no current direction guiding risk assessment, groundwater management, or geologic feature management. National and regional planning requirements call for the Forests to establish such direction. The subject of mineral materials is discussed under the heading of Minerals.

Supply and Demand

Geologic processes that are active on lands within the Forest include slope instability (such as landslides), seismic activity (earthquakes), and volcanic activity. Occupation of lands involved in or affected by these processes involve some risk to Forest personnel, facilities, and projects. In some cases risks are high enough to preclude occupation or use of these lands. Both the public and private landholders within the National Forest boundary occupy lands subject to the effects of these processes.

The existing Forest-wide geologic resource inventory classifies land in terms of high, medium or low risk of impacts from geologic processes. Approximately 453,600 acres on the Forest are classified at high risk from landslides; 37,600 acres at high risk during an earthquake from ground shaking; 48,000 acres at high risk during an earthquake from surface rupture; 373,000 acres at high risk during a volcanic eruption from lava flows; and 631,400 acres at high risk during a volcanic eruption from airborne material. Slope instability processes (including those triggered by earthquakes) are the most important geologic events on the Forest in terms of risk, primarily because of their relative frequency. Volcanic events are the least important due to their low frequency, despite the size of their potential impacts.

The extent and quality of groundwater on the Forest are not known. Small-scale wells have been developed to serve campgrounds, administrative sites, fire suppression units, and livestock and wildlife needs. Those uses currently total 43 acre-feet. Additional groundwater, amounting to 300 acre-feet, is used to supply Mammoth Mountain Ski Area. There is no current community use of groundwater from on-Forest sources.

The demand for groundwater to supply Forest Service facilities (including existing uses, the replacement of existing surface water sources, and the development of sources for new developed recreation sites) is estimated at 247 acre-feet over the next twenty years. The demand for water to supply ski areas (including existing use, new supplies to meet existing needs, and supplies for expanded ski areas) is estimated at 1,200 acre-feet over the next 25 years. The demand for groundwater to serve community needs in Mammoth Lakes is expected to reach approximately 6,000 acre-feet over a 25-year period. It is also likely that groundwater would be needed to supply geothermal power plants in Lease Blocks I and II. That development, if it occurs, is unlikely to occur before 1995. The amount of groundwater needed could be negligible, or it could be as great as 18,600 acre-feet, depending on the size and design of power plants.

The Forest has many outstanding geologic features deserving recognition and/or protection, some of which could qualify for Special Interest Area or Research Natural Area designation. The demand for protection of geologic features can be inferred from the fact that "textbook examples" of volcanic, metamorphic, and glacial geology attract large numbers of students and scientists to the area.

Plan Management Emphasis

The Plan calls for considering the risk to Forest projects posed by seismic, volcanic, and slope stability processes in planning for and locating facilities and management activities. The Plan also raises the need to inventory groundwater resources and to evaluate geologic Special Interest Area candidates within the next five to ten years. Geologic Research Natural Areas will be evaluated as a part of the Regional RNA program.

Lands

Current Direction and Opportunities for Change

The Forest lands program handles such activities as administrative boundary adjustments with the Bureau of Land Management; landline surveys and unauthorized occupancy; transportation and utility easements, corridors, and rights-of-way; withdrawals; landownership adjustments; and non-recreational special use permits.

The California Wilderness Act of 1984 transferred the administration of approximately 23,000 acres of land within the newly designated Mono Basin National Forest Scenic Area from the Bureau of Land Management to the Inyo National Forest. The Forest Service and the Bureau of Land Management are also currently engaged in an administrative interchange of federal lands. The Plan does not, however, address the implications of the land transfer or the interchange at this time.

Landline surveys and unauthorized occupancy are handled on a case-by-case basis where needed to resolve occupancies or to resolve conflicts with other landowners or land uses.

Rights-of-way for utility lines are consolidated wherever feasible with other linear land uses, such as roads, to limit the impacts of such lines on other resources.

Power and mineral withdrawals that limit options on withdrawn lands are available as a management tool. Withdrawals on the Forest are currently being reviewed as part of a national program to determine whether existing withdrawals should be extended, modified, or revoked.

The aspects of current policy receiving the most emphasis relate to landownership adjustment and special use permits. Present direction is to reduce the existing and potential impacts of private land uses on National Forest lands by working closely with local government entities to develop land exchange priorities. Land is made available under special use permit if the proposed use is compatible with the established multiple-use objectives

of the affected area and if no suitable private land is reasonably available for the use. Public uses have priority over semi-public uses, which are, in turn, considered before uses that benefit individuals. The Forest has the opportunity to establish priorities for landownership adjustment and to develop criteria for considering special use permit applications.

Supply and Demand

There are approximately 1,181 miles of property lines on the Forest, of which thirty-one have been surveyed and posted to standard. The current target is to survey and post six miles of landline per year.

The Forest currently resolves an average of five occupancy trespass cases per year. There are an estimated fifty unresolved occupancies Forest-wide. Many of these situations are long-standing and can be handled administratively by special use permit or resolved via the Small Tracts Act.

Approximately 1,911 miles of utility, transportation, and water transmission lines cross the Forest under special use permit. However, no utility corridors have been designated to date. The route paralleling the major interstate right-of-way for the Pacific DC Intertie transmission line has the highest potential for future designation as a utility corridor.

Withdrawals on the Inyo National Forest total 758,876 acres, representing actions initiated by the Forest Service, by Congress, or by other federal agencies. Approximately 565,100 of these acres are in wilderness. The Forest Service is currently reviewing the withdrawals it has initiated. If the needed objectives can be met by a less restrictive management option than withdrawal, some withdrawals may be modified or revoked.

The Inyo National Forest boundary includes 2,046,346 acres, of which 116,591 are in non-federal ownership. In Inyo and Mono Counties, which contain most of the Forest land, only seven percent of land within the Forest boundary is in other ownership (more than half of that belongs to the State of California or the City of Los Angeles and lies within the recently legislated Mono Basin National Forest Scenic Area).

The major source of demand for Inyo National Forest land is the rapid expansion of communities associated with alpine skiing, several of which are within or adjacent to the Forest boundary. These communities are interested both in land exchange so that more private land is available for development and in land uses under permit to accommodate community service facilities.

Since 1960 approximately 1,000 acres of Inyo National Forest land have entered the private sector and 16,360 acres of private land have entered the National Forest. There are currently 977 non-recreational special use permits covering 34,960 acres and 1,911 miles.

Plan Management Emphasis

The Plan emphasizes the need for cooperative planning with local government entities when developing a land exchange program, establishes broad priorities for landownership adjustment and criteria for special uses, and sets standards and guidelines for other lands activities. In most cases,

direction has not changed but has been restated for emphasis. Wilderness recommendations would represent the withdrawal of approximately 172,600 additional acres from new mining claims.

Minerals: Leasable (Geothermal Energy)

Current Direction and Opportunities for Change

Potential geothermal resources on the Inyo National Forest are currently being explored. A number of leases have been issued within the Mono-Long Valley Known Geothermal Resource Area (KGRA).

Pre-lease exploration activities are administered by the Forest Service. The Forest Service completes environmental documents in conjunction with the Bureau of Land Management which address the potential effects of geothermal leasing. The Bureau of Land Management issues the geothermal leases. All post-lease activities are authorized by the Bureau of Land Management with input and concurrence from the Forest Service. Environmental documents are completed by the Bureau of Land Management and the Forest Service which address the impacts of all post-lease activities. Mitigation measures are applied as appropriate to lessen the identified impacts.

Supply and Demand

Geothermal energy is a resource found on the Inyo National Forest. Approximately 260,000 acres of the 460,000 acre Mono-Long Valley Known Geothermal Resource Area are on National Forest land. Approximately 38,900 acres are currently under lease by six separate entities. Although shallow sub-surface testing has occurred and four to five deep exploratory wells have been drilled, additional work is needed to better define the extent and quality of the resource.

Plan Management Emphasis

The demand for geothermal energy is related to the national search for clean, non-polluting energy sources and national self-sufficiency. Changes in the cost of imported fuels will influence the amount of geothermal activity on the Forest. Management direction for the affected management areas would influence any proposed geothermal activity.

Minerals: Locatable

Current Direction and Opportunities for Change

The Forest Service manages surface resources associated with locatable mineral activity through the development and approval of plans of operation. New mining claims cannot be located in wilderness, but valid existing rights may be exercised. Existing direction is adequate to manage surface resources associated with locatable mineral activity.

Supply and Demand

The Inyo National Forest has a long, active history of mining. The Bureau of Mines lists twenty commodities in 513 mineral prospects on the Forest. More than 3,000 mining, mill site, and tunnel site claims are recorded for Forest lands. There are approximately eleven mines currently in production on the Forest. The most significant of these are the Umetco Pine Creek Mine in Pine Creek and the U.S. Pumice Mine in the Mono Craters. The latter produces more than 10,000 tons of block pumice each year.

The mineral potential of non-wilderness lands on the Forest has been estimated on the basis of geologic formations and past mining activity. The approximately 565,100 acres of designated wilderness has not been rated for mineral potential. A mineral potential rating of "high" has been applied to 133,860 non-wilderness acres on the Forest, and a rating of "medium" has been applied to 209,021 acres. The remaining 1,021,732 acres have been rated "low". The largest acreage in the high and medium categories is located in the Inyo Mountains and the lower elevations of the White Mountains.

Plan Management Emphasis

The Plan acknowledges the potential importance of locatable minerals on the Inyo. Wilderness recommendations were made considering the mineral potential of the land. The degree to which mineral impacts need to be mitigated is defined by the Forest-wide Standards and Guidelines and Management Direction for specific Management Prescriptions and Management Areas. Mineral withdrawals are addressed under the heading of Lands.

Minerals: Mineral Materials

Current Direction and Opportunities for Change

Mineral materials are used by counties, private parties, and the Forest Service for construction projects. Materials sources on National Forest land are managed either by the Forest Service or by other parties under special use permit. Off-Forest sources are available for Forest Service use under use agreements with the appropriate land manager. The major need is the development of a minerals management and development plan.

Supply and Demand

Of the fifty material sources inventoried in the area, twenty-eight are on National Forest lands. Current Forest Service demand, based on road construction and reconstruction, averages 40,000 tons per year. Estimated amounts of material in known reserves would be sufficient to provide for projected road construction and reconstruction for approximately thirty-four years.

The need for materials to support other types of construction (e.g., recreation sites, ski areas, geothermal developments, community development) would be added to the amount needed for roads. The projected demand for these other uses would reduce the supply by approximately eleven years.

Plan Management Emphasis

The Plan continues current direction for the management of mineral materials and calls for a mineral materials management and development plan.

Mono Basin National Forest Scenic Area

Current Direction and Opportunities for Change

The Mono Basin National Forest Scenic Area was established by Congress in September 1984. The enabling legislation for the Scenic Area called for development of a comprehensive management plan. The Forest has managed the area under an interim management plan pending completion of the comprehensive plan. This plan is being developed in a separate planning process.

Supply and Demand

The Mono Basin National Forest Scenic Area encompasses approximately 116,000 acres, of which 45,832 are National Forest land. The remaining acres include the lake surface itself and relicted lands (lakeshore created by the lowering of the lake level during forty years of water diversion) owned by the state, and additional City of Los Angeles and privately-owned lands.

Public interest in the area led to its establishment by Congress. The Scenic Area is valued by the public primarily for its scenic, ecological, and geologic features.

Plan Management Emphasis

When approved, the Scenic Area Comprehensive Management Plan will be tiered to the Forest Plan.

Pest Management

Current Direction and Opportunities for Change

The Forest Service uses the Integrated Pest Management (IPM) approach to pest management. The Integrated Pest Management approach calls for the integration of pest management activities (prevention, surveillance, detection, evaluation, suppression, and monitoring) into resource planning and decision making. Pest information will be considered, for example, in the development and implementation of silvicultural prescriptions.

The goal of Integrated Pest Management is to prevent and/or reduce pest-related damage considered unacceptable due to its impact on human activities or resource management objectives. In the selection of appropriate pest management methods, all techniques, including biological, mechanical, manual, and cultural are considered on a case-by-case, project-level basis. The preferred methods are selected on the basis of site-specific analyses of biological effectiveness, costs, and effects on human health and the environment.

Specific pest management activities commonly utilized on this Forest include monitoring pest-related damage, treating fresh stumps with borax to prevent annosus root disease, and removing hazard trees in recreation areas. In addition, timber management prevents or reduces pest-related damage on managed lands by creating stands of healthy, vigorous trees that are resistant to insects and disease.

The Pacific Southwest Region is currently preparing an Environmental Impact Statement (EIS) on the subject of vegetation management in reforestation. The Preferred Alternative of that EIS calls for continued use of site-specific analyses to make decisions about methods of vegetation control, and the consideration of all available methods when making those decisions.

Herbicides will be selected on the Inyo only if their use is essential to meeting management objectives. Herbicide use has historically been minor on this Forest, as the arid climate limits the abundant and rapid growth of vegetation that would compete with tree seedlings in plantations. No herbicides have been used on the Forest in the past five years. Before that, less than three hundred acres per year were treated. Aerial application of herbicides is unlikely to occur on the Inyo.

Supply and Demand

The most important pest organisms on the Forest are:

Diseases:	Annosus root disease, dwarf mistletoes, and wood decays.
Insects:	Jeffrey pine beetle, mountain pine beetle, California flatheaded borer, pine engraver beetle, pandora moth, and tent caterpillar.
Vertebrates:	Ground squirrel, pocket gopher, porcupine, and deer.
Vegetation:	Grasses and shrubs in tree plantations.

Pest proliferation on the Forest is not a serious concern. Pest problems are typically localized and fall within acceptable levels.

Plan Management Emphasis

The Plan continues to utilize the Integrated Pest Management approach to pest management, including the guidance provided by the Regional Environmental Impact Statement on Vegetation Management in Reforestation. The projected high levels of recreation use and new recreation site development and proposed timber harvest volumes will provide increased opportunities to implement Integrated Pest Management on the Forest.

Protection (Fire Management)

Current Direction and Opportunities for Change

Fire management on the Forest includes the elements of planning, prevention, detection, suppression, fuels management, and coordination with the management of other resources, including the use of prescribed fire.

There is a need to establish a cost-effective fire suppression organization consistent with overall resource management objectives.

The Forest also has a need to determine the appropriate fire suppression strategy for application on specific forest acres. The Interim Inyo Fire Management Plan provides for the use of containment or confinement where these strategies are more appropriate than control. Many additional lands on the Inyo are well suited to confinement or containment strategies. Confinement limits fire spread by the use of natural barriers; containment utilizes limited fire lines; control employs an extensive firefighting effort.

The Forest Service fire mission is wildland fire protection. The Forest will respond to a structure fire only in an emergency situation upon the request of local fire agencies. When local firefighters have arrived in sufficient force, Forest Service units will withdraw from the structure fire and focus on protection of adjacent wildlands.

As a member of the Owens Valley Interagency Command Center, Inyo National Forest firefighters respond to wildland fires off National Forest lands. They respond first if they are the appropriate firefighting unit closest to the fire; they support other agency units when needed.

Supply and Demand

From 1972 to 1982, the Inyo National Forest had 491 man-caused fires, (burning a total of 5,616 acres) and 715 lightning-caused fires (burning 2,496 acres). The Inyo is typical of many Forests in California, having many small fires and an occasional large, damaging fire.

The risk of wildland fire ignition on the Inyo is rising due to increasing development of intermingled and neighboring private lands. This growth is especially significant around June Lake, Mammoth Lakes, and Crowley Lake. If energy (especially geothermal) sources are developed, the risk of operational fires will increase in proportion to the size of facilities and amount of activity.

The demand for emergency responses to structure fires and the value of property at risk from fires originating on National Forest land are increasing with community expansion. In addition, the importance of protecting timber plantations from wildfire will increase as more acres are cut and regenerated.

Prescribed fire has been used on the Inyo National Forest for the past several years, primarily for timber site preparation. There are additional opportunities for prescribed burning to benefit wildlife habitat and domestic livestock range. Prescribed fire has not been used to reduce fuels for fire management purposes on the Inyo. However, it could be utilized in identified high hazard areas.

Plan Management Emphasis

The Plan identifies the fire suppression strategies that would be appropriate under each management prescription. Specific guidelines for the application

of those strategies will be developed as part of the Fire Management Action Plan.

Range

Current Direction and Opportunities for Change

The domestic livestock grazing program is presently managed at a moderate level of intensity. Most range allotments have improvements, but they are not sufficient to maximize forage utilization by livestock. Range management needs are documented in Allotment Management Plans and Annual Operating Plans. The range permittee is usually responsible for the annual maintenance of structural improvements, while the Forest provides materials for new construction. Most vegetation treatment is handled by the Forest Service.

Range management includes the management of wild horses and burros. Approved territory management plans for the White Mountain Wild Horse Territory and the Saline Valley and Lee Flat Burro Territory are adequate for the planning period. There is a need to develop a management plan for the Montgomery Pass Wild Horse Territory.

Supply and Demand

The current grazing program supplies 41,400 Animal Unit Months (AUMs) per year of forage for domestic livestock and wild horses and burros, and an unknown amount for wildlife. It is estimated that, managed under single resource emphasis with unlimited capital investment, a maximum of 75,900 Animal Unit Months could be produced on the Forest by the end of five decades.

Increases in forage would come primarily from type conversion and rejuvenation of range species, and secondarily from structural improvements such as as water developments and fencing. The costs of increasing forage production and the need for multiple-resource management limit the degree to which production will actually be maximized. The degree to which range outputs can be increased is ultimately limited by precipitation, the length of the growing season, water availability for livestock, and, in some cases, wilderness designation. There are about 150 miles of fence, 39 miles of waterline, 145 water sources, and 50 miscellaneous structures (cattle guards, gates, and corrals) on the Forest.

The demand for grazing on the Inyo is expected to continue at or above present levels, since National Forest summer range is essential for local ranch operations. The Forest assumes that if additional AUMs were made available, they would be utilized by present permittees.

The White Mountain Wild Horse Territory (70 horses) and the Saline Valley and Lee Flat Burro Territory (112 burros) populations are within established management levels. The Montgomery Pass Wild Horse Territory has more animals than the range can support in the long term. The public demand for wild horse and burro protection is considerable.

Plan Management Emphasis

The Plan maintains the current level of forage production. Grazing on suitable timber land will continue at current levels for the next ten years, but will slowly decline as timber stocking densities eventually crowd out forage. Grazing on key deer winter range will continue at current levels. Any increase in forage will be allocated to wildlife. Range management practices that prevent cattle from affecting specific fawning areas will be encouraged. Grazing in riparian areas may be deferred or redirected where necessary to prevent or repair damage to riparian resources. Existing wild horse and burro plans will be incorporated intact, and a management plan for the Montgomery Pass Wild Horse Territory will be developed.

Recreation: General

Current Direction and Opportunities for Change

Recreation is the most significant resource on the Inyo National Forest, and is expected to continue in that role for the foreseeable future. The economic stability of all Eastern Sierra communities rests heavily on recreation-based income. Most of the major attractions that bring recreationists to the area are located on Inyo National Forest land. On lands with potential for both recreation and other resources, current practice usually emphasizes the recreational values.

Although there is no need to change direction, there is an opportunity to decide which areas will be managed for varying recreational opportunities, how those opportunities will be enhanced, and what types of resource management are consistent with a recreation emphasis.

Supply and Demand

The demand for recreation on the Inyo National Forest is tied primarily to the population of Southern California. Demand is already high enough to exceed the existing capacity of many on-Forest recreational facilities, and is expected to increase during the planning period.

It is expected that the current emphasis on destination-oriented camping on the Forest will continue. Recreation use of lands in all Recreation Opportunity Spectrum (ROS) classes is expected to increase as a result of increasing demand. That use will be facilitated by the construction of new trails of various types, especially on lands in the Roaded Natural and Semi-Primitive Motorized classes.

There are currently 870,600 acres in the Primitive ROS class; 392,600 in the Semi-Primitive Non-Motorized class; 189,200 acres in the Semi-Primitive Motorized class; 383,600 acres in the Roaded Natural class; 35,100 acres in the Roaded Modified class; 11,600 acres in the Rural class; and 2,000 acres in the Urban class in private ownership.

Plan Management Emphasis

The Plan identifies both summer and winter existing and potential developed and dispersed recreational opportunities. It prescribes the enhancement of opportunities in some areas and the protection of potential sites for future development.

Recreation: Developed

Current Direction and Opportunities for Change

Developed recreation sites are currently managed with low-standard maintenance and rehabilitation of degraded sites. No new sites have been constructed in the past ten years. There is an opportunity to emphasize the need for standard maintenance and to consider the development of additional facilities to enhance recreational opportunities on the Forest. On the Inyo National Forest, dispersed recreation depends heavily on developed facilities. As the Forest is a day's drive away from the nearest cities, visitors need to spend the night on or near the Forest. Any increase in recreational use, therefore, depends on an increase in overnight capacity. With the limited amount of private land in the Eastern Sierra, most of that additional capacity will need to be developed on public land.

Supply and Demand

The Inyo National Forest supplied 1,848,500 Recreation Visitor Days (RVDs) of developed recreation use in 1982. The current capacity of non-alpine developed sites is 25,479 Persons At One Time (PAOT). About 98 percent of recreational developments lie in concentrated recreation areas. These areas cover 47,529 acres (two percent of the Forest land base). Potential developed site capacity is estimated at 44,034 PAOT and 3,292,200 RVDs.

The demand for summer recreation, assuming that facilities are available, is projected to increase at a rate of two percent per year through the next ten years, and to continue at the same rate for the following forty years.

Plan Management Emphasis

The Plan emphasizes an increase in developed recreation use. New facilities will include campgrounds, trails, and interpretive sites, primarily in existing concentrated recreation areas. Both privately and publicly operated sites will be considered.

Recreation: Alpine Skiing

Current Direction and Opportunities for Change

Alpine ski area development is currently managed in close coordination with local community planning. Ski area capacity projections for National Forest land are developed in conjunction with community projections of capacity to support the associated population of skiers and support services. The Mammoth and June Mountain Ski Area plans are to develop to capacity. There

is additional potential for ski area development in the Sherwin Bowl, Minaret Summit, Mammoth Knolls, San Joaquin Ridge, and White Wing areas.

Several of these potential ski areas are suitable for both timber harvesting and developed recreation opportunities. There is a need to establish a management emphasis for those lands.

In response to the Mono County/Town of Mammoth preferences stated in the Town of Mammoth Lakes General Plan, the Forest Service agreed to evaluate Sherwin Bowl first when considering the development of additional ski areas. It is currently being studied in a separate environmental analysis that is not a part of this planning process.

Supply and Demand

The Inyo National Forest has two alpine ski areas with a combined capacity of 22,000 Skiers At One Time (SAOT). They provided 1.6 million skier visits during the 1981-82 season. Current planning will increase their capacity to approximately 29,000 to 31,000 SAOT. Other identified potential ski areas are: Sherwin Bowl, Mammoth Knolls, Minaret Summit, San Joaquin, and White Wing. The limiting factors on ski area development may be infrastructure factors such as water, sanitation, and snow removal capability rather than the availability of land suitable for skiing.

The demand of Southern Californians for alpine skiing appears to increase in direct proportion to lift capacity. Skier use on the Inyo has increased about twelve percent per year for the past ten years. Demand is expected to continue increasing until the Forest has been developed to capacity.

Plan Management Emphasis

The Plan acknowledges the importance of the Inyo National Forest as a source of alpine skiing for Southern Californians. Provisions are made for the management of potential ski areas so that their ski development potential is retained.

Recreation Dispersed

Current Direction and Opportunities for Change

The majority of dispersed recreation on the Inyo National Forest represents day use in concentrated recreation areas by people who are staying overnight in Forest Service campgrounds. The emphasis on dispersed recreation is therefore related to the emphasis on developed sites. There is an opportunity to acknowledge that relationship and to identify those developments which would best enhance dispersed recreation opportunities on the Forest.

About twenty percent of dispersed recreation use is generated by overnight developments on private land and by local communities. This percentage could increase, especially in the Mammoth Lakes area.

Supply and Demand

Dispersed recreation in 1982 amounted to a total of 1,935,000 Recreation Visitor Days (RVDs). Of this total, 540,000 RVDs represented wilderness use; 340,000 represented fishing, 25,200 represented deer hunting; and 25,800 represented other wildlife-related recreation. The remaining 1,004,000 RVDs represented such activities as driving for pleasure, hiking, riding, dispersed camping, and boating.

The demand for dispersed summer and winter recreation is expected to increase in relative proportion to the demand for developed summer and winter recreation.

Plan Management Emphasis

The Plan recognizes the relationship of developed and dispersed recreation on the Inyo. Dispersed recreation opportunities will be enhanced by expanding campground capacity, constructing day-use trails in concentrated recreation areas, and developing (or encouraging private parties to develop) facilities that support nordic skiing. In addition, certain lands will be managed with an emphasis on off-highway vehicle (OHV) recreation. OHVs are those vehicles capable of traveling off two-wheel drive roads, including four-wheel drive and all terrain vehicles (ATVs) and motorbikes. There is specific direction for snowmobile use (over-snow vehicle or OSV).

Research Natural Areas

Current Direction and Opportunities for Change

The Forest currently manages established Research Natural Areas (RNAs) under Forest Service Manual direction. Candidate RNAs are managed so that their natural ecosystems are protected until the establishment process is completed. The Forest has the opportunity to recommend the establishment of candidate RNAs in the Plan.

The Forest is responsible for meeting RNA targets for eight vegetation types in two physiographic provinces. Once the two candidate RNAs are established, Forest RNA targets will have been met.

The current direction regarding potential geologic and aquatic RNAs is to defer consideration until Regional direction is finalized.

Supply and Demand

The Inyo National Forest has five established and two candidate RNAs. Existing RNAs meet established targets for Jeffrey pine (Indiana Summit), lodgepole pine (Sentinel Meadow), foxtail pine (Last Chance Meadow), bristlecone pine (White Mountain), and unique ecosystems (Harvey Monroe Hall). Candidate RNAs meet the target for pinyon pine (Whippoorwill Flat) and alpine fellfields (McAfee Meadow). The target for limber pine is met by stands in the Sentinel and Whippoorwill areas.

There is public demand for RNAs, especially from the scientific community.

Plan Management Emphasis

The Plan recommends establishment of the Whippoorwill Flat and McAfee Meadow RNAs.

Riparian Areas

Current Direction and Opportunities for Change

Riparian areas are currently managed by implementing plans for watershed improvement and golden trout habitat restoration on the Kern Plateau and by applying Best Management Practices (BMPs) for water quality protection to all Forest activities.

There is an opportunity in the Plan to address the management of all riparian areas on the Forest and to coordinate riparian values with the management of other resources. Such direction is especially important because riparian areas on the Inyo are limited in extent and vulnerable to impacts from many kinds of activities. Heavy recreational use, grazing, accelerated erosion, water diversion, and the encroachment of woody vegetation on wet meadows all threaten the amount and condition of riparian areas. Both the maintenance of riparian condition and the restoration of damaged areas need to be addressed.

Although wet meadows on the Forest have been adequately inventoried, and the amount of streamside riparian vegetation on the Forest is generally known, a thorough Forest-wide inventory of the streamside riparian resource is needed. A complete and accurate picture of riparian habitat types, their extent and condition would contribute significantly to managing riparian values in concert with other potentially conflicting needs and demands.

Supply and Demand

Riparian areas on the Inyo National Forest are in short supply and great demand.

There are approximately 37,000 acres of riparian vegetation (including wet meadows) on the Forest. That figure represents less than two percent of the total land base. The species composition of a given riparian area is determined by elevation, geomorphic characteristics, and the amount of water available. Approximately 80 percent of the Forest's riparian acreage is in wilderness.

The limited supply of dense and productive riparian vegetation and its contrast with arid surroundings make it especially important to wildlife for food and cover. Riparian vegetation is also an important component of fish habitat quality as overhanging vegetation keeps the water cool and roots hold soil in place preventing sedimentation. Cattle typically graze more heavily in riparian areas than on the surrounding dry range. Recreationists seek these areas for shade and water as a relief from the hot, dry surroundings. Finally, riparian vegetation provides scenic variety, as its lush green color contrasts with the surrounding grays and browns.

The demand for riparian area-dependent resources is expected to increase dramatically, especially as riparian values serve as a recreational attraction and are subject to the increasing demand for recreation.

Plan Management Emphasis

The Plan establishes direction for riparian area management. Both the maintenance of existing values and the restoration of areas in poor condition are addressed. Resources dependent on riparian areas receive priority over other resources where they are in conflict. The need for an inventory of streamside riparian areas is identified.

Sensitive Plants

Current Direction and Opportunities for Change

Sensitive plants are presently protected by surveying project sites and granting a clearance before vegetation is disturbed. In most cases, project locations are moved as needed to avoid known populations. In a few cases, populations have been protected by fencing.

While existing direction is not in need of change, a program management plan is needed to set management priorities and to expand the scope of sensitive plant management beyond field survey and site avoidance on a case-by-case basis.

Supply and Demand

There are twenty-two sensitive plant species on the Forest. Eight of these species are endemic to Inyo National Forest lands. None of these are federally listed as threatened or endangered; however, two plants are in Category 1 under the Federal Register which means the U.S. Fish and Wildlife Service has enough information to support a listing as threatened or endangered. Four sensitive plants on the Inyo are state-listed as rare. Although the condition of sensitive plant habitat varies by species and population, it is generally fair to excellent Forest-wide.

The demand for sensitive plant protection arises from public interest in maintaining viable populations of each species. The local chapter of the California Native Plant Society is especially concerned about the protection of all native plants on the Inyo.

Plan Management Emphasis

The Plan emphasizes current policy and calls for the development and implementation of a Forest sensitive plant program management plan.

Special Interest Areas and National Natural Landmarks

Current Direction and Opportunities for Change

The only established Special Interest Area on the Forest is the Ancient Bristlecone Pine Forest Botanical Area. There are also eight candidate geologic Special Interest Areas. There is no need for change in management of the Botanical Area. The candidate areas need to be evaluated during implementation of the Plan and recommendations made to the Regional Forester.

The Park Service has developed a preliminary list of twenty-two possible National Natural Landmarks on the Forest. See Chapter III of the EIS for the list. National Natural Landmark designation does not affect management of the area, or who the responsible agency is. If any are designated, the Forest Service will continue to manage them according to existing management plans or the Prescriptions and Management Area Direction specified in this Plan.

Supply and Demand

The Ancient Bristlecone Pine Forest encompasses 28,887 acres in the White Mountains. The primary attraction of the area is a stand of exceptionally old bristlecone pine trees, including the world's oldest known living tree. The Botanical Area is internationally known, and has been the site of significant dendrochronological (tree-ring dating) research.

The following candidate geological interest areas were selected from a list of sixty interesting geologic features on or near the Forest: the Papoose Flat granitic intrusion; granitic domes in the Buttermilk area and Egypt Creek; Hot Creek; Starkweather Lake glacial polish; Tioga Tarns; the Inyo Craters area (including Inyo Craters, Deadman glass flow, Obsidian Dome, and Devils Punchbowl); Earthquake Fault; and Convict Lake/lower Convict Creek, including the moraines.

There is a demand for Special Interest Areas on the Forest. The scientific community in particular has identified a number of geological phenomena that they consider deserving of special management. In most cases, the demand is for protection of those phenomena, rather than for interpreting them to the public. It is, therefore, important to choose carefully among the special management designations available.

Plan Management Emphasis

Current management direction will continue in the Bristlecone Pine Forest. Geologic candidates will be evaluated and selected areas recommended to the Regional Forester. Until the evaluation process is complete, candidates will be protected from any activities that would damage or destroy their potential as Special Interest Areas.

Timber

Current Direction and Opportunities for Change

Current timber management emphasizes the regeneration of Jeffrey pine,applying the silvicultural system of even-aged management. There is, however, an opportunity to experiment with uneven-aged management. Most Jeffrey pine stands on the Forest are understocked, as past practices relied heavily on intermediate harvest and natural regeneration. Most red fir stands on the Forest have not yet been entered for timber harvest. Red fir has not been in high demand on the wood products market, and there has been some question about the possibility of regenerating that species. As both the market and regeneration success have improved, red fir harvest has become more desirable.

The commercial timber base in the current timber management plan for the north half of the Forest is 91,500 acres; the annual yield on those acres is projected at 11.5 million board feet (MMBF). The estimated commercial timber base on the south end of the Forest is 10,500 acres with an estimated yield of 1.5 MMBF.

There is an opportunity in the Plan to determine which lands will be managed with a primary emphasis on timber outputs. Lands with existing grazing use, high recreational values, wildlife habitat values, and scenic values need to be considered in terms of their availability for intensive timber management. When the size of the timber base is established, appropriate silvicultural methods can be applied and the long-term sustained yield level of the Forest can be realistically assessed.

Current timber management in concentrated recreation areas consists primarily of removing hazard trees. There is an opportunity to prescribe silvicultural methods for those areas that would enhance the health and vigor of the forest without detracting from aesthetic and recreational values.

Pinyon-juniper woodlands on the Forest are currently used for grazing, dispersed recreation, and public wood gathering. It is desirable to learn more about management possibilities on those lands and to consider additional management options, if appropriate, in the future.

Supply and Demand

The current timber harvest on the Forest is approximately 10.5 MMBF (million board feet) per year. The demand for sawtimber for the Forest cannot be predicted from historical sales trends. Since all the timber offered for sale on the Forest during the past decade has been sold, it can be assumed that supply has not exceeded demand. In addition, there is relatively little uncut volume under contract (less than two years sell volume), and no sales have been turned back. Recently, bid prices for timber have been three to four times greater than advertised rates. All these indicators lead to the conclusion that sawtimber from the Inyo is in high demand relative to other National Forests in California. Sawmills in Gardnerville, Nevada and Loyalton, California depend upon logs from the Inyo National Forest. The sawmill at Inyokern, California, on the south end of the Forest recently

closed. There are no local sawmills or communities that rely on Forest timber outputs for economic stability.

Local communities are almost entirely dependent on the Forest as a source of commercial and personal-use fuelwood. The Inyo currently sells approximately 4,000 cords of fuelwood per year to commercial operators and 6,000 cords per year to the public. The demand for fuelwood correlates directly with the local population. That demand is therefore projected to grow with community expansion. The supply of wood from logging slash is expected to remain at current levels over the planning period.

Plan Management Emphasis

The Plan emphasizes using uneven-aged management techniques for all species west of U.S. 395 and even-aged management techniques east of U.S. 395. Pure stands of red fir west of U.S. 395 will not be entered during this planning period and the Monache area is excluded from harvest. The size of the commercial timber base has been defined through coordinated planning for all Forest resources. Lands on which other resource values are higher than timber values have been removed from the suitable base, or timber management has been modified. Slopes of greater than 30 percent will be harvested only if it is economically feasible to do so. The suitable timber base includes 75,233 acres out of a tentatively suitable timber base of 110,700 acres.

The public-use fuelwood program is unchanged. Wood gathering above the 8,000-foot elevation in the White and Inyo Mountains continues to be prohibited.

Visual Resources

Current Direction and Opportunities for Change

Visual resources on the Forest are presently managed to meet inventoried Visual Quality Objectives (VQOs). Management activities are planned and mitigation measures are prescribed so that VQOs for affected lands will be met. The Mammoth and June Lake communities and associated winter sports development represent the most significant visual impacts within the Forest boundary. The Forest Service has no control over development and activities within communities.

Additional winter sports development and new hydroelectric and/or geothermal developments could cause major visual resource disruptions during the planning period. There is a need to establish direction for applying VQOs to such developments.

Supply and Demand

The Inyo National Forest has an extraordinary visual resource. That resource can be described in terms of variety class, sensitivity level, visual quality objectives, visual condition, and visual absorption capability.

Variety Class A lands are distinctive. Forty-four percent of lands on the Forest fall into this category. Variety Class B lands are common and

comprise 48 percent of the Forest. Variety Class C lands, representing minimal variety, comprise 8 percent of the Forest.

The sensitivity level of the landscape is a measure both of use (how many people see it) and visual quality (what is seen and how close it is). Sensitivity Level 1 (most sensitive) applies to 76 percent of the Forest, Level 2 applies to 9 percent, and Level 3 applies to 15 percent.

Visual Quality Objectives (VQOs) describe the degree to which the natural landscape can acceptably be modified, based on a combination of variety class and sensitivity level. The VQO of Preservation (no modification) applies to all Wildernesses and Research Natural Areas, or 31 percent of the Forest. The Retention VQO (modifications must not be visually evident) applies to 17 percent. Partial Retention (modifications must be visually subordinate to the natural landscape) applies to 34 percent. Modification (may be visually dominant, but must conform to natural character) applies to 14 percent. Maximum Modification (visually dominant but not the primary focal point) would be acceptable on only 3 percent of the Forest.

Existing Visual Condition (EVC) describes the degree to which the natural landscape has already been altered. EVC Type I (untouched) describes 76 percent of the Forest; Type II (changes unnoticed), 9 percent; Type III (minor disturbances), 10 percent; Type IV (disturbances), 4 percent; Type V (major disturbances), 1 percent, and Type VI (drastic disturbances), none.

Visual Absorption Capacity is the ability of vegetation and topography to screen disturbances from view. A high level of absorption capacity has been estimated for 16 percent of the Forest; moderate capacity on 39 percent, and low capacity on 15 percent. Wildernesses have not been inventoried for this quality.

Supply can be identified numerically by using the above figures to calculate a Visual Quality Index (VQI). The VQI for the current visual situation on the Inyo is 142.07, which is extremely high.

There is a high level of demand for scenic beauty on the Forest due both to the high levels of recreation and to the fact the U.S. 395 is a major national travel route. It is therefore important to maintain visual resource values on the Inyo.

Plan Management Emphasis

The Plan emphasizes a continued high level of visual quality for its economic and social benefits to local communities and to millions of annual recreation visitors. This emphasis is expressed by assigning VQOs to specific acres of land that are consistent with the overall management direction for that land.

Watershed — Soils

Current Direction and Opportunities for Change

Soil resources are presently managed by mitigating activities to minimize impacts. Where soil impacts are severe, watershed restoration projects may

also be undertaken. There is an opportunity to establish soil management direction in the Plan that goes beyond current management by tailoring direction to specific management areas.

Supply and Demand

Soils on the Forest are variable in terms of parent material, physiographic position, susceptibility to erosion, and capacity to support vegetative growth. Most soils on the Forest are coarse-textured. The most common parent material is granitic; the second-most common is pumiceous. The remaining soils are derived from limestone, metasedimentary rock, and basalt. Physiographic position ranges from flat tableland to gently sloping alluvial fans to extremely steep mountainsides.

Most of the soils on the Forest are in optimal or near-optimal condition. These soils typically suffer little or no accelerated erosion, are stable, and each soil type is producing vegetation at its optimal level. However, wet meadows grazed by livestock and alpine ski areas are especially susceptible to soil erosion, due to both soil characteristics and to the management activities that occur there.

The demand for optimal soil condition is related primarily to the demands for vegetative growth (for timber, range, wildlife habitat, and scenic values) and for water quality. Stable and productive soils are needed to meet the demand for most of the other resources produced on the Forest.

Plan Management Emphasis

Practices that conserve soil productivity and reduce erosion are emphasized in Forest-wide Standards and Guidelines. Key watershed improvement needs are identified for specific management areas.

Watershed — Water

Current Direction and Opportunities for Change

Water quality is presently managed by applying Best Management Practices (BMPs) to all management activities and implementing improvement projects on damaged watersheds. The two alpine ski areas have developed and implemented Erosion Prevention Plans. There is no need to change direction, but it would be desirable to emphasize existing direction and to provide for watershed monitoring in the Plan.

Water rights for consumptive water use are administered by the state. There is a need to encourage the development of legal mechanisms for obtaining water rights for nonconsumptive (instream) uses such as fish habitat and visual quality. The consumptive rights of other parties to water on National Forest land could easily conflict with the management of Forest resources dependent on instream flow.

Water yield is presently managed by allowing storage and regulation reservoirs to be operated on the Forest. There is little, if any,

opportunity for additional reservoir capacity or for increasing water outputs by vegetation management.

Supply and Demand

Water quality on the Inyo is good overall. Established water basin objectives are met by more than 97 percent of the water coming off the Forest. As bacterial, nutrient, and chemical problems are small and localized, the main threat to clean water is sedimentation.

The major existing sources of sediment are eroded wet meadows (damaged by poor range management in the past) and alpine ski areas. The greatest potential for additional sediment production comes from mining, geothermal development, ski area development, and roads and trails. Timber management is not a major threat to water quality on the Inyo as long as it occurs on slopes and soil types similar to those currently under management.

The demand for water quality is reflected in the fact that most of the water flowing from the Forest serves domestic or municipal water needs, either locally or in urban areas. Clean water is also a recreational attraction.

The Forest holds adequate water rights to meet its current and foreseeable consumptive needs. Those needs are expected to grow no more than five percent over the next fifty years.

Water flowing off the Forest amounts to an average of 1,093,000 acre-feet per year. The demand for water from the Forest is expected to increase with increasing populations, both in local communities and in urban areas that use water from the Forest. The demand for water in Mammoth Lakes, in particular, is likely to grow quickly with additional ski area capacity, and possibly with geothermal development as well.

Plan Management Emphasis

The Plan stresses the importance of compliance with Best Management Practices and ski area Erosion Prevention Plans, and continuing implementation of Watershed Improvement Plans to protect and improve water quality.

The water rights situation remains unchanged; the Forest has adequate water rights to furnish water for projected consumptive needs. Changes would have to occur legislatively at the state level in order to provide water rights for instream values.

The possibilities of increasing water yield or availability for municipal use will be studied on a case-by-case basis as demand increases. No Forest-wide opportunities to increase water yield have been identified.

Wild and Scenic Rivers

Current Direction and Opportunities for Change

The Forest is presently managing the Middle Fork of the San Joaquin River as a candidate Wild and Scenic River, protecting its wild and scenic qualities.

The San Joaquin flows between the Sierra and the Inyo National Forests. The Sierra has the lead responsibility for making a recommendation to Congress for wild and scenic designation for this river.

Supply and Demand

The South Fork of the Kern and the North Fork of the Kern have recently been designated as Wild and Scenic Rivers by Congress. Advocates of Wild and Scenic Rivers have been outspoken at the national level in their demand that some free-flowing waters be protected. The Congressional action that established the Wild and Scenic River program recognizes that demand.

Plan Management Emphasis

The Plan prescribes management direction for all three rivers, based on their status.

Wilderness

Current Direction and Opportunities for Change

The John Muir, Ansel Adams (formerly Minarets), Hoover, and Golden Trout Wildernesses are currently managed under individual wilderness management plans. Although overall wilderness direction is adequate for planning purposes, certain aspects of wilderness management plans need to be corrected to improve consistency from one plan to another. The Plan can facilitate this process. Wilderness management plans are reviewed periodically, and area-specific changes are made as the need arises.

The South Sierra Wilderness, which was designated in September 1984, does not yet have a management plan. Two additions to the Ansel Adams wilderness need to be incorporated into the Minarets Wilderness Management Plan, and that plan needs to be renamed. These planning needs should be addressed in the Plan.

Supply and Demand

The Inyo National Forest has approximately 565,100 acres of designated wilderness; approximately 30 percent of the Forest land base. The Plan recommends that approximately 172,600 additional acres be added to the wilderness system which would bring the total wilderness component of the Forest to 38 percent. Wilderness recreation on the Forest amounted to 540,000 RVDs in 1982. There are 584.6 miles of wilderness trail currently maintained to Class I standards and 29 trailheads with a capacity of 2,212 PAOTs.

The demand for wilderness recreation exceeds the supply during the summer in the Ansel Adams and John Muir Wildernesses. Most of the wilderness trailheads on the Forest are managed under quotas that allow wilderness to be managed within established capacity limits. Most quotas are filled during the summer months. Only the less desirable trails and some mid-week and early- and late-season days are left unfilled.

The demand for wilderness use is dependent on the recreational appeal of a given area. Scenic attractions, ease of access, lakes, campsites, destination points, and sources of drinkable water are all important. The amount of non-wilderness roadless land on the Inyo with those characteristics is limited. It is unlikely, therefore, that wilderness supply could ever meet demand on this Forest unless demand were to decline.

Plan Management Emphasis

The Plan incorporates existing wilderness management plans and recognizes the need for continuing examination and updating of those plans with changing conditions. The need to develop management direction for new wilderness is also addressed.

Wildlife

Current Direction and Opportunities for Change

The Forest currently manages wildlife with an emphasis on threatened, endangered, sensitive, special interest, and harvest (game) species. Threatened and endangered species habitat is managed with the objective of restoring species viability. Habitat for sensitive species is managed with the intent of preventing the species from becoming threatened or endangered as a result of management activites. Special interest species have values for scientific study or recreational appreciation; their habitat is managed with a goal of maintaining or increasing populations on the Forest. Harvest species are managed primarily to provide recreational hunting opportunities.

Habitat management plans have been developed on the Forest for some of these species. Others have to be developed.

Wildlife species that do not fall into one of the above mentioned categories have not benefited from specific habitat management activities. The Forest has the opportunity to apply the concept of Management Indicator Species (MIS) in the Plan. Management Indicator Species include threatened and endangered species, key sensitive species, key harvest species, and additional species that represent specific habitat types subject to the effects of Forest management. Management Indicator Species representing specific habitat types are intended to represent other wildlife species with similar requirements. As such, they are used to determine the population capabilities of different habitats and to evaluate management opportunities to enhance habitat. Management Indicator Species representing habitat types can include species from another category.

Supply and Demand

Management Indicator Species on the Forest, by category, are:

Harvest	Mule deer, Blue grouse, Sage grouse.
Endangered	Bald eagle, Peregrine falcon.
Sensitive	Fisher, Sierra Nevada red fox, Goshawk, Pine marten, Spotted owl, Great gray

	owl, Wolverine, Sierra Nevada mountain sheep.
Special interest	Golden eagle, Tule elk, Prairie falcon, Nelson mountain sheep.
Dependent on riparian area	Yellow warbler.
Dependent on snags	Hairy woodpecker, Williamson sapsucker.
Dependent on early-middle seral stages of brush	Sage grouse.
Dependent on older seral stage of coniferous forest	Goshawk.

Bald eagle: The Inyo has a small amount of bald eagle wintering habitat. Approximately 20 to 30 birds winter on or near National Forest land. Current information does not indicate whether the number is increasing or decreasing.

Tule elk: There are approximately 600 elk in the Owens Valley. Numbers are increasing, and animals are removed for transplant.

Mule deer: The current population of mule deer that relies on the Forest for summer range, winter range, and/or migratory access is estimated at 20,200 animals. Those deer that summer and/or winter on Forest lands are estimated at 12,000 with a maximum potential population estimated at 16,000. Although the deer population has remained fairly constant over the past ten years, declines are perceptible over the past twenty to thirty years. The reasons for declining numbers are not known, but are being studied by the Department of Fish and Game in cooperation with other agencies, including the Forest Service.

The California Department of Fish and Game has prepared deer herd management plans for each of the eight herds that use Inyo National Forest lands. Those plans and the goals they envision are as follows:

Buttermilk Herd: Maintain the population near current levels (3,000 deer) to maximize recreational hunting opportunities by maintaining the current quality and quantity of habitat and preventing deleterious impacts from future land uses.

Casa Diablo Herd: The current population is estimated at 1,500 deer. The goal is to increase that population to 2,245 deer by applying flexible harvest levels and by improving habitat and reducing competition and disturbance on key summer, intermediate, and winter range habitats.

East Walker Herd: The 1984 pre-season population was approximately 3,040 deer. The goal for this herd would be approximately 5,050 deer. Most increases would be achieved through range enhancement and reduced competition for forage on lands outside the Forest.

Goodale Herd: The current population is estimated at 2,600 deer. Goals are expressed as buck, doe and fawn ratios for the northern and southern subunits. The northern subunit will be maintained to maximize recreational hunting opportunities. The southern subunit will be managed with emphasis on older age-class bucks for viewing and late-season quota hunting. Habitat goals are to maintain the current quality and quantity of habitat and to prevent deleterious impacts of future land uses.

Inyo-White Mountains Herd: Maintain current landownership status, improve habitat conditions where possible, and prevent deleterious impacts from future land uses (there is insufficient census information for population goals).

Monache Herd: The primary management goal is to develop and maintain a spring population of 8,000 to 9,000 animals (an increase of approximately 2,000 deer over current levels). This population could be achieved through habitat improvement and land use priorities that favor deer.

Mono Lake Herd: The current fall population is estimated at 3,000 deer. The goal is to increase that number to 4,000 animals by improving key habitats, reducing competition with livestock and wild horses for forage, and improving sex and age ratios through flexible harvest levels.

Sherwin Grade Herd: Maintain the current population (2,300 to 2,400 deer) by restoring the quality of winter range, acquiring key winter range now in private ownership, and improving the sex and age ratios.

Deer rely most heavily on Forest lands for winter range. Most spend the summer at higher elevations and many of the northern herds summer west of the Forest boundary. The Inyo has 112,119 acres of key deer winter range, most of it between 4,500 and 6,000 feet elevation on the east slope of the Sierra Nevada.

The demand for deer hunting in the Eastern Sierra is high and has been relatively stable from year to year. In 1982 deer hunting amounted to 25,200 Wildlife and Fish User Days. This demand appears to be limited by supply, in terms of hunter success rates. If there were more deer, hunters would be more successful, and the demand for hunting would be expected to increase.

Peregrine falcon: Although peregrine falcons existed on the Forest in earlier times, the nearest active nesting pairs are now found in Yosemite Valley and Hetch Hetchy Canyon. Eight fledglings were reintroduced on the Forest in 1983 and 1984. There is potential nesting habitat for four nesting pairs.

Fisher: Two recent records and a few unsubstantiated reports exist for this species on the Forest. Dense forested habitat comprised of large trees are considered optimum habitat. West-side forests probably contain more suitable habitats than east-side counterparts.

Sierra Nevada red fox: A few substantiated sightings have been reported in the June Lake area. This species is found in open forest, alpine shrub and riparian habitats at higher elevations. Rock crevices and logs are required for denning.

Goshawk: Goshawk surveys have located approximately twenty-five active nest sites on the Forest, fifteen of these in suitable timber. Most surveys have been conducted in areas managed for timber. It is estimated that an additional twenty-five pairs have nest sites in wilderness or non-commercial timber areas. There is insufficient data to determine whether the goshawk population on the Forest is changing.

Blue grouse: Blue grouse is a harvest species typically found in forest and shrub habitats associated with riparian areas at high elevations in the Sierra

Nevada and White Mountains. There are no apparent conflicts between the needs of this species and the management of other resources. The demand for blue grouse as a game species on the Forest is light.

Sage grouse: The population of sage grouse on the Forest is declining. The reason for this decline is not known. It is suspected that certain livestock grazing practices and wildfire suppression have contributed to the increasing density of sagebrush and a declining amount of herbaceous understory which are, in turn, reducing sage grouse habitat capability. Studies are underway to analyze these factors and to make habitat improvement recommendations. Sage grouse are no longer found in several areas on the Forest that they formerly occupied.

The current population of birds is estimated at 500 individuals, located primarily in the Lake Crowley basin and the northern White Mountains. The maximum habitat capacity of the Forest for sage grouse is estimated at 1,500 birds.

Sage grouse is considered an important upland game bird in California. The demand for hunting the species is high and is expected to remain so. However, due to declining numbers of birds, the California Department of Fish and Game closed the hunting season for sage grouse in 1983, 1984, 1985, and 1986.

Pine marten: Martens are a relatively common carnivore in dense stands of red fir and lodgepole pine at higher elevations.

Spotted owl and Great gray owl: There is little data on the occurrence of these species on the Forest. Although two spotted owl sightings have been documented on the Forest, there have been no documentations of nest territories. The demand for spotted owl habitat is high, as it is decreasing throughout the timbered areas of California and the Pacific Northwest. Spotted owls require large tracts of old-growth timber. This seral stage is also a prime potential source of wood products. There is considerable concern that without special management spotted owls could become threatened within the next fifty years. On the Inyo National Forest, red fir stands have the highest potential for spotted owl nesting habitat. There are no timber harvests scheduled in these stands during this planning period.

Great gray owl sightings on the Forest have not been verified. There are few potential conflicts between the habitat needs of that species and other resource management because most of the suitable habitat is in wilderness.

Nelson (desert) mountain sheep: Nelson mountain sheep are found in both the White and Inyo Mountains. It is estimated that there are approximately one hundred sheep in the White Mountains, and the population appears to be increasing. Little is known about the Inyo herd, but the population has been estimated at thirty.

There is a significant demand for Nelson mountain sheep for scientific research, recreational appeal, and (potentially) for hunting. Auctions in other states for permits to shoot a ram have raised bid prices exceeding $60,000. This interest is expected to continue.

Sierra Nevada mountain sheep: Virtually all of the Sierra Nevada mountain sheep in California are found on the Inyo National Forest. There are five populations on the Forest. Two populations represent natural distributions; the remaining three have been reintroduced into historic range. There is additional potential for reintroduction, as the Baxter herd is healthy and growing, and there is still suitable unoccupied habitat on the Forest. The total existing population includes approximately three hundred animals. If all identified suitable habitat on the Forest were occupied, it could support as many as one thousand animals.

The Sierra mountain sheep is in demand primarily for recreational observation and scientific study. Two wild sheep societies and the California Department of Fish and Game are especially interested in the management of mountain sheep.

Riparian area-dependent species: Riparian vegetation covers approximately two percent of the Inyo National Forest; the remaining lands are, for the most part, arid and sparsely vegetated. The population and trend of riparian-area dependent wildlife species has not been studied. The amount and condition of riparian habitat is vulnerable to the impacts of ground disturbance, vegetation manipulation, and/or streamflow reduction. Many types of resource management have the potential to affect riparian areas.

Approximately 20 percent of historic stream habitat in the Mono and Owens Basins has been eliminated by water removal, irrigation, and recreational activities. Eighty-eight percent of all existing streams have been diverted to some extent.

Maintaining the quality of aquatic and riparian habitat is a critical concern. Since nearly all species are dependent on these areas at some time in their life cycles, activities that adversely affect these habitats have more potential for affecting the overall wildlife resource on the Forest than any other kind of Forest activity. For these reasons, the demand for riparian habitat on the Inyo is high.

Snag-dependent species: Snag densities on the Inyo are low, due both to the slow rate of natural snag recruitment and the amount of illegal public snag cutting for fuelwood. The population and trend of snag-dependent species is thought to be declining in areas accessible to the public and open to fuelwood gathering. Habitat for snag-dependent species declines wherever new roads are constructed and lands become accessible to woodcutters. The demand for snags on the Forest is high.

Snag-dependent species are dependent on both standing dead trees (snags) and down and dead logs. Dead and down wood is legally available to woodcutters and declines rapidly wherever it is accessible by vehicle.

Species dependent on early-middle seral stages of brush: See sage grouse.

Species dependent on older seral stages of coniferous forest: See goshawk.

Plan Management Emphasis

Habitat management Standards and Guidelines for Management Indicator Species and other emphasis species, needed management plans, and research and inventory needs are addressed in the Plan.

CHAPTER IV

Phil Collins

Management Direction

CHAPTER IV. Management Direction

Introduction

This chapter documents how the Inyo National Forest will be managed during this planning period. It provides direction to Forest land managers and explains to the public the reasons why specific areas are managed for specific reasons and how that will be accomplished.

The chapter is divided into five sections:

1. **Forest Goals** lists the resources of the Forest with their respective management goals.

2. **Forest Objectives** lists outputs for each resource that will result from implementing the Plan.

3. **Forest-wide Standards and Guidelines** are the bases for all management activities on the Forest. Each resource has a set of standards and guides to ensure that the resource is protected, maintained or developed in an environmentally sound and economically cost-effective way. These standards and guides apply to all areas of the Forest.

4. **Management Prescriptions** prescribe how areas on the Forest will be managed with a specific resource emphasis. For example, any Wilderness on the Forest no matter where it is located will be managed under Prescription #1 - Designated Wilderness. Each prescription describes the objective of management and the area's resource emphasis.

5. **Management Area Direction** delineates boundaries of the twenty management areas on the Forest. Each of these has a different mix of prescriptions, but all are managed under the Forest-wide Standards and Guidelines.

National Forests are managed under a variety of federal laws ranging from the U.S. Mining Laws of 1872 to the National Forest Management Act of 1976. Forest Service Manuals and Handbooks and the Pacific Southwest Regional Guide provide additional policy direction. The Plan supplements but does not replace the direction from those sources.

Variance from Forest-wide Standards and Guidelines, Prescriptions, or Management Area Direction may occasionally be needed due to unforeseen site conditions, uncontrollable circumstances or unexpected natural phenomena. Where variance is unavoidable, it will be documented in an appropriate project environmental analysis. If necessary, the Plan can be amended or revised.

Forest Goals

The multiple-use management goals that follow describe the desired future condition of the Inyo National Forest. These goals are derived from laws, regulations, policies, Resources Planning Act (RPA) Program goals, the Pacific Southwest Regional Guide, and identified Inyo National Forest issues and concerns.

ECONOMIC/SOCIAL

The Forest is managed in an economically efficient and cost-effective manner while responding to the economic and social needs of the public and local communities.

AIR QUALITY

National Forest System lands are managed to maintain air quality that complies with all applicable regulations. The conduct of Forest management activities is carried out in a manner consistent and compatible with the attainment of state and federal air quality objectives.

CULTURAL RESOURCES

Identification, evaluation, protection, and interpretation of cultural and historic resources are continuous and an integral part of management of the Forest.

DIVERSITY

The Forest has achieved diversity of plant and animal communities by providing a threshold level of vegetation types and seral stages.

ENERGY

Maximum public benefits are obtained from the energy resources of National Forest System lands, while adverse environmental effects on other Forest resources from exploration, development and extraction are minimized. Management operations on the Forest are energy-efficient.

FACILITIES

An efficient Forest transportation system, administrative sites, and other facilities are in place and maintained at least to the minimum standards appropriate for planned uses and the protection of resources.

FISH

Fish habitat is managed to provide species diversity, to ensure that viable populations of native vertebrates are maintained and the habitats of management emphasis species are maintained or improved.

GEOLOGY

Geologic resources, including groundwater, are assessed. The risks to persons and projects from potential geologic processes such as landslides, earthquakes, and volcanic events are recognized and provisions are made for them.

LANDS

The Forest has a land and resource management structure and program with compatible relationships between National Forest System lands and adjacent non-federal lands. Specific activities to accomplish this goal are: special use administration, electronic site management, utility corridor management, rights-of-way management, withdrawal, landownership adjustment, and property boundary resurvey and monumentation.

MINERALS

Maximum public benefits are obtained from the mineral (including geothermal) resources of National Forest System lands, while adverse environmental effects on other Forest resources from exploration, development and extraction are minimized.

PEST MANAGEMENT

Pest-related damage is maintained at levels that do not unacceptably impact land and resource management goals and objectives.

PROTECTION

The Forest has a cost-effective fire management program that minimizes resource losses and serious or long-lasting adverse effects from wildfire. The Forest Service mission in fire management is to use fire as a resource management tool.

RANGE

A sustained yield of forage is provided, range condition is improved, and grazing capacity is increased on suitable range, while other resource values are maintained or improved through cost-effective development and improved management.

RECREATION

A broad range of developed and dispersed recreation opportunities in balance with identified existing and future demand is provided.

RESEARCH NATURAL AREAS

All botanical Research Natural Areas are established and targets are met. All qualified aquatic and geologic candidates are identified and recommended for establishment.

RIPARIAN AREAS

Riparian areas are managed to protect or improve riparian area-dependent resources while allowing for management of other compatible uses.

SPECIAL INTEREST AREAS

Special Interest Areas (botanic, geologic, scenic, zoologic) are managed to fulfill the intent and purpose for which the areas are established.

THREATENED, ENDANGERED, OR SENSITIVE SPECIES

The habitats of threatened or endangered animals are protected or improved to assist the recovery of the species in cooperation with state and other federal agencies. Sensitive plant species are protected to ensure they will not become threatened or endangered.

TIMBER

The timber resource is managed to provide a sustained yield of commercial sawtimber, public fuelwood, and miscellaneous wood products, while other resource values are maintained at or above those minimums prescribed by law and/or regulation.

VISUAL RESOURCES

The quality of the scenic resource and viewing opportunities are maintained or enhanced.

WATERSHED

National Forest management activities are conducted to maintain or improve soil productivity, to maintain favorable conditions of waterflow, and to comply with water quality goals as specified in state and federal clean water legislation for the sustained benefit of consumptive and nonconsumptive users of water.

WILD AND SCENIC RIVERS

The newly designated North Fork of the Kern and South Fork of the Kern Wild and Scenic Rivers are managed to protect their wild and scenic qualities. The Middle Fork of the San Joaquin is managed so as not to preclude its designation as a Wild and Scenic River.

WILDERNESS

Classified wilderness is managed to protect and perpetuate the wilderness character of the area; to provide opportunities for primitive recreation; to maintain wildlife and fish, scenic, and watershed values; and to maintain or enhance the quality of wilderness experiences.

WILDLIFE

Wildlife habitat is managed to provide species diversity, to ensure that viable populations of existing native vertebrates and invertebrates are maintained, and that the habitats of management emphasis species are maintained or improved.

Forest Objectives

Forest objectives are the quantified resource and activity outputs for the 10-year planning period (1988-1997). The following table displays the outputs or inventory from the base year of 1982; the 1980 Resources Planning Act (RPA) targets for the years 1990 and 2030; and the outputs that will result from implementing the Plan. They are displayed in this manner for comparison purposes. There are no RPA targets for many of the categories.

Forest Objectives
Average Annual Outputs for Decade 1

Resource Elements	Base Year	1980 RPA Goals		Decade 1
	1982	1990	2030	(1988-1997)
FACILITIES				
Administrative Sites				
Forest Service owned (no.)	6			8
leased (no.)	1			1
Dams and Reservoirs				
Forest Service (no.)	3			3
State/Local (no.)	4			4
Private (no.)	11			11
Roads (miles)				
Construction (total)	0			2.5
recreation (site access)	0			0
(interior)	0			2.5
Reconstruction (total)	25			15.0
timber	15			5.0
recreation (site access)	5			5.0
(interior)	5			5.0
Maintenance (total)	974			977
Trails (miles)				
Construction (total)	0			24.3
existing wilderness	0			0.7
recommended wilderness	0			1.8
concentrated rec. areas	0			9.0
open National Forest	0			1.0
OHV	0			1.8
nordic	0			10.0

Forest Objectives
Average Annual Outputs for Decade 1

Resource Elements	Base Year 1982	1980 RPA Goals 1990	1980 RPA Goals 2030	Decade 1 (1988-1997)
Trails (miles) (cont'd)				
Reconstruction (total)	10.8			39.7
existing wilderness	9.0			12.6
recommended wilderness	0			1.3
concentrated rec. areas	1.8			4.2
open National Forest land	0			2.2
OHV	0			16.2
nordic	0			3.2
Maintenance (total)	1236			1489
LANDS AND MINERALS				
Land acquired (acres)	60			54
Landlines surveyed (miles)	9			6
Leasable minerals (total power plants)	0			1
Locatable minerals (operating plans)	67	320	408	50
PROTECTION				
Fuel treatment (total acres)	18			243
fire related	0			0
timber related	18			93
range related	0			50
wildlife related	0			100
Expected wildfire (total) (acres burned)	747			918
Fire Intensity Level 1	13			9
Fire Intensity Level 2	34			55
Fire Intensity Level 3	53			64
Fire Intensity Level 4	647			239
Fire Intensity Level 5	0			551
Fire Intensity Level 6	0			0
RANGE				
Grazing (M AUMs)	41.4	42.2	44.5	41.4

Forest Objectives
Average Annual Outputs for Decade 1

Resource Elements	Base Year 1982	1980 RPA Goals 1990	1980 RPA Goals 2030	Decade 1 (1988-1997)
RECREATION				
Developed Private (M RVD)	1635			1914
Developed Public (M RVD)	1201	3510	5100	1578
Dispersed (M RVD)	1004	2490	3120	1191
Wilderness (M RVD)	540			644
TIMBER				
Allowable Sale Qty. (MMBF)	10.5	16.8	19.8	7.1
Fuelwood (M cords)	10.0			10.6
Long-term Sustained Yield (MMBF)				14.5
Reforestation (acres)	300	614	718	200
Timber Stand Improvement (acres)	328	900	918	374
WATERSHED				
Improvement (acres)	100	180	200	350
Quality (M ac./ft. at stds.)	1047	476	481	1050
Increased Quantity (M ac./ft.)	0			7.0
WILDLIFE AND FISH				
Mule deer (M animals total)	20.2	+20 percent		20.2
(M animals on Inyo NF)	12.0			12.0
Bald eagle** (winter roosting areas)	1			1
Peregrine falcon** (no. of pairs)	0			2
Goshawks in suitable timber (no. of pairs)	15			15
Nelson mountain sheep (no.)	130			140

Forest Objectives
Average Annual Outputs for Decade 1

Resource Elements	Base Year 1982	1980 RPA Goals 1990	1980 RPA Goals 2030	Decade 1 (1988-1997)
WILDLIFE AND FISH (cont'd)				
Sierra Nevada mountain sheep (no.)	300			350
Lahontan CT trout* (stream mi.)	1			.3
Paiute CT trout* (stream mi.)	3			1.3
Resident trout (M lbs.)	1632	+20 percent		1640
Wildlife/Fish User Days (total) (M WFUDs)	391.0			393.8
mule deer	25.2			25.2
resident trout	340.0			341.7
other	25.8			26.9
Direct Habitat Improvement				
mule deer (M acres)	0.5			0.2
resident trout (miles)	0			0.4
other (M acres)	0			0.3
HUMAN RESOURCES				
Programs (enrollees)	39	14	14	39
TOTAL BUDGET (MM$)	9.9	11.1	12.2	12.1
TOTAL COST (MM$)	10.3			13.5

*Threatened, **Endangered.

Forest-wide Standards and Guidelines

Forest-wide Standards and Guidelines

Forest-wide Standards and Guidelines set the minimum resource conditions that will be maintained throughout the Forest. They provide specific guidelines for the management of each resource to ensure its protection or enhancement. They apply wherever the resource or activity occurs. More specific or additional direction may be given by Management Prescriptions or Management Area Direction.

This section displays the guidelines for managing all resources of the Forest.

Resource	Page
Air Quality	75
Cultural Resources	75
Diversity	76
Energy	77
Facilities	77
Fish	78
Geology	80
Hardwoods	80
Lands	80
Minerals	82
Pest Management	83
Protection	84
Range	84
Recreation	86
Research Natural Areas	89
Riparian Areas	89
Sensitive Plants	91
Special Interest Areas	92
Timber	92
Visual Resources	93
Watershed	94
Wild and Scenic Rivers	97
Wilderness	97
Wildlife	98

Air Quality

- Coordinate with the Great Basin Unified Air Pollution Control District when developing guidelines for management programs on the Forest.

- Obtain permits from the Air Pollution Control District prior to conducting prescription fire activities.

- Burn only when fuel conditions and climatic conditions are such that minimum total suspended particles and volatilized gases are generated and rapid smoke dispersion is assured.

- Conduct, or require of lessees and contractors, dust abatement procedures during construction or other Forest activities that generate significant dust.

Cultural Resources

- Consult with local American Indian groups to ensure the protection of, and access to, traditional secular, religious, and ceremonial sites.

- Assess and authorize as appropriate both general and site-specific requests by local American Indians for traditional and religious uses of National Forest System lands.

- Consult with the State Historic Preservation Officer and nominate appropriate cultural/historical sites to the National Register.

- Identify the types of data and research efforts needed to develop more efficient inventory, evaluation, protection, and compliance processing. Encourage and support in-service and private sector efforts that address these needs. Develop and implement appropriate management plans and strategies.

- Foster active research programs by issuing antiquity/special use permits, cooperative agreements, and volunteer agreements.

- Document inventories, site evaluations, assessments of impacts, and mitigation plans in all EAs/EISs for Forest-initiated, authorized, or licensed activities.

- Treat Class II properties as if they were Class I until they are evaluated.

- Maintain the confidentiality of cultural resource site locations to aid in their protection.

- Avoid cultural resource damage during fire suppression activities and provide protection for known cultural values.

- Interpret cultural resources for the benefit of the public.

- Develop and implement strategies including road closures for the protection of cultural sites.

Diversity

- Maintain or improve the diversity of plant and animal communities by providing a variety of vegetation types and seral stages within the Forest.

- Maintain at least five percent of each timber type and ten percent of each shrub type in each of the named seral stages. If any given seral stage-vegetation combination currently represents less than the minimum required level, manage to achieve the required level as soon as possible.

- Use the following timber types, shrub types, and seral stages to determine the Minimum Management Requirement level of diversity. Diversity at this level is measured Forest-wide and on all forested land whether managed for timber production or not. The red fir component will not be harvested during this planning period.

  Timber Types: Jeffrey pine; red fir; lodgepole.

  Seral stages (first two decades):

  (1) grass/forb (with or without scattered shrubs and seedlings);

  (2) shrub/seedling/sapling (trees up to 20 feet high);

  (3A) pole/medium tree (20-50 feet high, 0-39 percent canopy cover, substantial shrub layer);

  (3B,C) pole/medium tree (20-50 feet high, 40 percent or more canopy cover, variable shrub layer);

  (4A) large tree, mature to over-mature (most trees over 50 feet high, 0-39 percent canopy cover, substantial shrub layer);

  (4B,C) large tree, mature to over-mature (40 percent or more canopy cover, variable shrub layer);

  (4C) large tree, mature to over-mature (70 percent or more canopy cover and possible evidence of decadence).

  Shrub Types: Big sagebrush, bitterbrush.

  Seral stages:

  (1) early stage

  (2) middle stage

  (3) late stage.

Energy

- Authorize the development of wind as an energy source where development is compatible with the attainment of established Forest goals for other resources or uses.

- Authorize new hydroelectric power facilities as an energy source when development of projects will allow streamflow sufficient to maintain resident trout fisheries, maintain Visual Quality Objectives, and uphold wildlife and riparian resource objectives.

- Assure that energy conservation practices are applied to National Forest management programs.

- To the extent possible, require the use of existing roads, disturbed areas, and the co-location or clustering of energy development facilities such as roads, pipelines, powerplant and support structures.

Facilities

- Provide additions to the transportation system for resource development. Provide public access to public land and developed recreation sites, consistent with Forest goals and objectives.

- Reconstruct and regulate traffic as needed for public safety and/or resource protection.

- Address concerns for public safety and resource protection through road closure, relocation or reconstruction of non-system roads consistent with available budgets.

- Maintain facilities to established standards, make them energy efficient, and/or replace if necessary.

- Schedule facilities maintenance and replacement per the following priorities:

    1. Correct inventoried health and safety items.

    2. Accomplish annual recurrent maintenance.

    3. Eliminate inventoried maintenance backlogs.

    4. Replace condemned facilities if there is a continued need and no feasible alternatives are available. If construction funds are not available, continue rehabilitation/refurbishing work necessary to maintain facilities at habitable standards while perpetuating the life of the structure.

    5. Provide new facilities where needed.

- Consider mass transit options when vehicle use exceeds the capacity of existing roads or threatens to damage resource values or when public

facilities can best be served by a community-wide system proposed by another entity.

- Provide trails for hikers, skiers, equestrians, bicyclists, snowmobilers, the handicapped, and off-highway vehicle users when compatible with user needs, level of development, and Forest goals and objectives.

- Maintain trails to assigned maintenance levels.

- Coordinate trail construction, rerouting, improvement, and maintenance with cooperating or affected agencies.

- Separate incompatible trail uses where feasible.

- Utilize existing developed facilities, roads, and trails for both summer and winter recreation activities, whenever possible, before developing new ones for exclusive seasonal use.

Fish

Threatened and Endangered Fish

- Rehabilitate and maintain essential habitat for these species according to species' recovery plans and Memoranda of Understanding with the California Department of Fish and Game and the U.S. Fish and Wildlife Service.

- Provide high quality habitat for threatened and endangered fish species based on the results of habitat capability model analyses.

- Manage all stream reaches of essential habitat as depicted in the Recovery Plan to the following guidelines in consultation with the U.S. Fish and Wildlife Service.

  1. Do not allow any activity that results in more than 10 percent degradation of the habitat within any given stream reach; this conclusion must be supported by data that results from the use of a quantitative methodology survey such as GAWS, COWFISH, etc.

  2. Restore unstable or eroding streambanks to attain a streambank system that is no more than 10 percent unstable at any given time.

  3. Retain vegetation adjacent to perennial streams that affords stream shading and streambank stability.

Fisheries

- Provide medium- to high-quality habitat for resident fish species based on the results of the appropriate habitat capability model.

- Manage all stream reaches of all state designated wild trout waters according to the following:

1. Any activity that results in trampling and chiseling should not exceed 10 percent of any given stream reach. A reach is defined as a continuous portion of a stream with homogeneous physical characteristics. Use the current situation as documented in the Final Environmental Impact Statement (EIS) as a reference point.

2. Restore unstable or eroding streambanks to attain a streambank system that is no more than 10 percent unstable at any given time.

3. Streamside vegetation should provide a minimum of 90 percent of the habitat's capability to provide stream shading and fish cover.

- Manage all stream reaches containing resident fish according to the following:

    1. Any activity that results in trampling and chiseling should not exceed 20 percent of any given stream reach. Use the current situation as documented in the EIS as a reference point.

    2. Restore unstable or eroding streambanks to attain a streambank system that is no more than 20 percent unstable at any given time.

- Prohibit stream-modifying construction activities within or immediately adjacent to the aquatic zone during the following spawning seasons:

    1. in streams with spring spawning species (rainbow, cutthroat, and golden trout), February 15-August 20;

    2. in streams with fall spawning species (brown and brook trout), October 1-April 15.

  Exceptions to (1) and (2) above must be approved by the Forest Supervisor.

- Design stream crossings to accommodate fish passage where proposed roads and trails will cross streams that support active or potential fisheries.

- Maintain instream flows needed to support existing resident fisheries.

- Maintain water levels in reservoirs and natural lakes to support fisheries to at least existing levels.

- Negotiate with the Federal Energy Regulatory Commission (FERC) and the affected utility companies to rewater selected reaches of streams for the re-establishment of resident trout fisheries.

- Coordinate with the California Department of Fish and Game to establish standards for viable populations and tolerable levels of depletion for resident fish species.

Geology

- Design and construct structures or facilities located near active faults and/or areas of known seismic activity to withstand seismic impacts. Relocate structures or facilities to less active sites where design and construction is not economically efficient.

- Conduct on-site geologic investigations prior to surface or vegetation-disturbing activities on lands mapped as highly or extremely unstable on Forest geologic resource inventory maps. Assess the feasibility of mitigation measures and include stability mitigation measures in project operating plans and design specifications.

- Make a slope suitability examination based on sheer strength/sheer stress relationships before constructing roads or other permanent developments in areas that are a hazard because of instability.

- Cooperate with other agencies, where appropriate, in identifying geologic hazards in areas of existing roads or facilities and assess the feasibility of implementing hazard mitigation measures.

- Wherever appropriate, include information explaining local geology or interesting geologic features in interpretive displays, publications, and interpretive programs.

Hardwoods

- Protect the integrity of the hardwood ecosystem in all existing oak stands.

Lands

Electronic Sites

Fully develop existing sites before authorizing new sites. Authorize new sites or expand existing sites only after analysis indicates such use is compatible with Forest goals and objectives.

Landownership Adjustments

- Acquire lands by exchange, purchase, or donation in the following priority:

  1. Highest priority:

     a. lands with water frontage such as lakes, streams, floodplains, wetlands, and riparian zones;

     b. key game management areas and lands having endangered or threatened fish, wildlife, or plant habitat;

     c. lands needed to reduce fire risks;

d. lands needed to prevent soil erosion;

e. lands and easements that ensure access to public lands and resources;

f. lands having unique historical or cultural resources;

g. wilderness inholdings.

2. Moderate priority:

a. lands primarily of value for outdoor recreation purposes and lands needed for aesthetic purposes;

b. lands needed for administrative purposes.

3. Lowest priority:

b. lands needed to consolidate existing blocks of National Forest lands to improve administration of the area.

- Dispose of lands by exchange in the following priority:

1. Tracts inside or adjacent to communities when such tracts would enhance community development and reduce use conflicts, provided that suitable private land is not available. Coordinate National Forest System plans for land adjustments with the Bureau of Land Management, county, and community general plans.

2. Lands under special use permit within or adjacent to communities that would be better suited for private ownership.

3. Small federal parcels that are intermingled with other non-federal parcels.

Property Boundaries and Unauthorized Occupancy

- Locate, survey, post, and mark National Forest System boundaries to standard.

- Identify and reduce unauthorized occupancies on National Forest System lands.

Rights-of-Way Grants

- Utilize existing public or private utility rights-of-way, and minimize the creation of new rights-of-way where feasible to reduce impacts on other resources.

- Bury new or reconstructed power distribution lines, (33 kv or less), and telephone lines where feasible.

Special Uses

- Issue special use permits only if private land suitable for the use is not reasonably available and if the use is compatible with established Forest goals and objectives.

- Apply the following priority when evaluating special use permit applications:

  1. public uses (governmental)

  2. semi-public uses

  3. private (exclusive) uses.

- Issue no special use permits on lands identified for exchange when this would reduce future exchange opportunities.

Utility Corridors

- Participate in the Eastern Sierra Interagency Utility Corridor Study to identify an east/west corridor designation.

Withdrawals

- Review existing withdrawals and recommend revocation when the purposes for which the withdrawals were established no longer exist or can no longer be administratively accomplished.

- Initiate Forest Service withdrawals for new sites only when other available surface use and occupancy controls cannot protect the surface resources.

Minerals

Minerals Management: General

- Administer mining laws and regulations to permit the uninterrupted production of minerals while assuring the adequate protection of other resources and environmental values.

- Where valid existing rights within withdrawn areas are exercised, operating plans should be consistent with the purpose of withdrawals.

- Coordinate the mineral management program with the Bureau of Land Management.

Leasable Minerals: Oil, Gas, and Geothermal

- Provide for the leasing of National Forest lands for exploration and development of oil, gas and geothermal resources commensurate with other resource values. Follow existing Memoranda of Understanding between the Bureau of Land Management and the Forest Service that relate to oil, gas,

and geothermal mineral activities. Follow applicable regulations, operating orders, and notices for oil, gas, and geothermal leases issued pursuant to appropriate authority.

- Prepare environmental documents that analyze full-scale development prior to consenting to Bureau of Land Management's issuance of geothermal leases.

- Prepare postlease environmental documents in cooperation with the Bureau of Land Management for site-specific exploration, development, and production proposals. Assure that impacts to resources are appropriately analyzed. Assure that impacts to these resources are mitigated to the extent possible.

- Consider the location of fluid conveyance lines and facilities for geothermal development to ensure the viability of deer migration corridors. Encourage geothermal development that utilizes air cooling rather than evaporative cooling systems.

Leasable Minerals: Other

- Provide for leasing National Forest System lands for the exploration and development of minerals, commensurate with other resource values, as specified under the Minerals Leasing Act of 1920 and the Minerals Leasing Act for Acquired Lands of 1967. This includes hardrock minerals. Follow applicable laws and regulations.

Locatable Minerals

- Allow all National Forest System lands not specifically withdrawn from mineral entry to be available for mineral exploration, location and extraction under applicable laws and regulations.

Saleable Minerals

- Utilize common variety minerals, e.g., sand, gravel, and borrow material without encroaching upon other resource values. Encourage the use of materials that are available from the private sector where possible.

- Provide for the sale of common variety minerals when such action will not cause unacceptable damage to the surface resources. This includes impacts on surface-based access.

Pest Management

- Coordinate pest control programs with the U.S. Fish and Wildlife Service, the California Department of Fish and Game, the California Department of Health Services, other federal, state, and local agencies, and private sector groups as needed.

- Follow an Integrated Pest Management approach to managing pests during the planning and implementation of all appropriate activities, particularly those that influence vegetation. Consider and analyze, on a

site-specific project basis, a full range of pest management alternatives that include cultural, biological and mechanical methods. Select treatment methods through the environmental analysis process that consider the environmental effects, treatment efficacy, and cost effectiveness of each alternative. Determine monitoring and enforcement plans to implement specific measures during this site-specific process. Pest detection, surveillance, evaluation, prevention, suppression, and post-action evaluation are integral components of this Integrated Pest Management approach.

- Treat green pine stumps that are eight inches and larger in diameter with borax to minimize the aerial spread of annosus root disease in stands that are managed for timber production. Treat all green conifer stumps with borax in areas managed with a concentrated/developed recreation emphasis.

Protection

- Implement a fire management program consisting of: 17 percent prevention and detection, 83 percent suppression and aviation, and the application of all appropriate wildfire suppression strategies (confinement, containment, and control).

- Use Prescriptions and Management Area Direction and fire management action plans when determining the appropriate wildfire suppression strategy.

- Use prescribed fire as a management tool.

- Consider both existing conditions and the effect of future management activities in the area surrounding the project area when developing treatment standards for fuels.

- Coordinate with local fire districts in the development of major new structural facilities on National Forest lands.

- Allowable burned acre objectives for specific areas will be determined in the preparation of fire management area plans.

- The Forest Service mission in fire management is to use fire as a resource management tool.

Range

- Develop range resources to their reasonable potential and manage them for sustained yields.

- Provide grazing tenure to lend stability to the local livestock-raising community and established ranching operations.

- Manage grazing allotments according to a planned management system.

- Develop range Allotment Management Plans before term permits are issued where possible. Incorporate in those plans provisions for implementing Best Management Practices for range management.

- Consider deer forage requirements (five pounds per deer day) in the allocation of livestock forage as part of all range analysis.

- Use individual grazing allotment plans as the instrument to guide the avoidance of unacceptable damage to soil, water quality, and fish habitat and the resolution of incompatibilities between livestock and known key mule deer fawning areas. Institute positive measures such as delaying the grazing season and/or directing livestock away from riparian areas by herding, salting, water developments, or fencing. Amend allotment plans to include adopted means of resolution and needed mitigation measures. If mitigation is unsuccessful in preventing unacceptable resource damage, as a last resort livestock grazing will be reduced or eliminated.

  1. Develop a priority schedule, with an annual review, of Allotment Management Plans to be revised over the planning period. Each Allotment Management Plan will be revised commensurate with available funding.

  2. After Allotment Management Plans are revised, they will be updated on an average of every ten years.

- Consider the benefit to fisheries, wildlife, recreation, and watershed as well as range when designing range improvements.

- Assess impacts on riparian areas within permit boundaries during grazing permit re-evaluations. Require structural and/or non-structural measures to correct unacceptable deterioration of riparian-dependent resources.

- Graze meadows only when "range-ready" as defined in Forest Service Handbook 2209.21.

- Conduct annual utilization checks on selected meadows and key wildlife habitats in grazing areas.

- Coordinate with the Bureau of Land Management (BLM) for administrating shared grazing allotments to implement the decisions in the BLM's Benton-Owens Valley Management Framework Plan.

- Achieve or maintain rangeland, over time, in "satisfactory" condition as defined by the Region 4 or Region 5 (as appropriate) Range Analysis Handbook and Resource Value Rating System.

- Where feasible, locate all range improvements away from travel corridors, especially trails, popular fisheries, and other watercourses.

- Allotment Management Plans will display use, improvement, maintenance, and other management data.

- Use criteria will be established and documented for each unit of each grazing allotment. These criteria will be developed through the

interdisciplinary team approach using long-term trend studies and identified limiting factors. These criteria will define permissible grazing levels. This standard should be observed in the process--soil and vegetation are the basic resources. The condition of these two resources must be maintained or improved. If they are in a satisfactory condition, then they must be maintained in this condition. If they are in a less than satisfactory condition, then allowance must be made for improvement in condition.

- Inform the California Department of Fish and Game before planning and implementating revegetation projects.

- Grant extensions of season of use only when this use does not conflict with the Allotment Management Plan's objectives.

- Locate salt and sheep bedgrounds outside riparian areas and at least one-quarter mile away if possible and reasonable.

Recreation

Developed Recreation: Private

- Make future use determinations before issuing new permits: (1) three years prior to the expiration of existing term permits; or (2) when existing facilities are sold, a new termination date is requested, and potential financing of improvements require a later termination date.

- Encourage the updating of master development plans for existing commercial developments. Require master development plans for new developments or before allowing any new major construction on existing developments. Require the permittee to submit these plans for Forest Service approval.

Developed Recreation: Public

- Construct and maintain facilities and sites to regional standards. Construct and maintain sites and associated water systems and wastewater treatment plants to Facility Condition Class 1 as defined in the recreation resource inventory.

- Emphasize permitted activities rather than prohibited ones on signs to lessen recreation use conflicts.

- Provide screening and shade, using vegetation and/or artificial structures, to increase use on less attractive sites.

- Design at least 10 percent of recreation units for use by the physically limited, in all new highly developed sites (Experience Levels 3 or 4), and in reconstructed sites with a capacity of more than 125. Consider the needs of the physically limited in toilet design for these sites where possible.

- Develop new campsites in concentrated recreation areas before other locations to generate increased use and higher returns to the U.S. Treasury.

- Develop associated day-use facilities and interpretive and informational sites and trails, together with overnight campgrounds, to achieve a balanced facility package.

- Coordinate with other agencies for the development and maintenance needed to provide parking opportunities for snow play and nordic skiing.

Dispersed Recreation

- Maintain activities and developments at levels that meet prescribed Recreation Opportunity Spectrum (ROS) classes as defined in the ROS Users Guide.

- Incorporate the increasing demand for mountain bike, equestrian, bicycle and nordic opportunities into composite plans, community plans, trail plans, and programs.

Interpretive Services

- Develop programs, displays, and publications to interpret Forest Service resource management and the natural and cultural environments.

- Design the physical elements of the Interpretive Services Program (e.g., signs, interpretive trails, information stations) to harmonize with the settings where they are located.

- Maximize the use of self-service information facilities.

- Develop interpretive composite plans for major interpretive opportunities (e.g., the bristlecones, Mono Craters).

- Formalize an interpretive plan of operation for each district based on interpretive composite plans.

- Continue to coordinate with the Eastern Sierra Interpretive Association to promote and facilitate interpretation and education relating to the Eastern Sierra.

Off-Highway Vehicles/Over-Snow Vehicles (OHV/OSVs)

- Manage OHV/OSV use according to the Forest-wide Standards and Guidelines and the 1977 Interagency Motor Vehicle Use Plan. The Motor Vehicle Use Plan is scheduled to be updated upon implementation of the Forest Plan. The update will be conducted with public involvement and will include maps indicating open routes for both OHVs and OSVs. Criteria used in updating the Plan will include but are not limited to:

  1. Impacts on soil resulting in reduced land productivity.

  2. Impacts on vegetation resulting in loss of soil.

3. Degradation of water quality.

4. Degradation of air quality.

5. Adverse impacts on habitat for threatened, endangered, or sensitive species.

6. Adverse impacts on habitat in areas in the mountain sheep and mule deer Prescriptions.

7. Adverse impacts on cultural resources.

8. Adverse impacts on visual resources.

9. Adverse impacts on other recreation uses.

10. Adverse impact to others using the Inyo National Forest.

11. New technological changes in OHV/OSVs.

12. Changes in the goals or management direction for the Inyo National Forest.

- Coordinate Forest off-highway vehicle planning and funding with federal, state, and local agencies, and with private landowners where appropriate.

- When necessary, close critical wildlife and fish habitat to OHV/OSV use.

- Designate OHV/OSV trails and open areas to minimize conflicts with existing or potential developed recreation sites, private property, special uses, adjacent wilderness, administrative areas, cultural resources, riparian areas, key wildlife habitat, and sensitive watershed areas.

- Cooperate with the State of California in developing a Statewide OHV Trail Plan.

- Do not permit wheeled vehicles except for commercial and administrative use on OSV trails and corridors in winter.

- Do not permit recreational use of wheeled vehicles over snow except in designated areas.

- Permit OSV use only when there is sufficient snow cover to protect the soil and vegetative resources.

<u>Recreation Residences</u>

- Continue all recreation residence special use permits unless a future use determination identifies a higher public need. Complete future use determinations for recreation residence tracts during this planning period (1988-1998). Schedule future use determinations in advance of termination date of the permit to allow sufficient time for public input.

- Give priority to public access leading to or through developed or dispersed recreation areas wherever proposed improvements obstruct such access.

- Notify recreation residents within flood or avalanche zones that their residences are in dangerous areas, and that no additions to existing structures will be permitted. Include the floodplain damage clause (BR-5-3) in permits within floodplains.

- Resolve noncompliance deficiencies before issuing a permit for an improvement to an existing facility to a new owner.

Research Natural Areas

- Cooperate in the establishment process for recommended botanical Research Natural Areas.

- Inventory geologic Research Natural Area candidates as a part of the Regional Research Natural Area program.

Riparian Areas

- Give emphasis to riparian-dependent resources in the management of riparian areas.

- Protect streams, streambanks, shorelines, lakes, wetlands, and the plants and animals dependent on these areas.

- Prevent significant adverse riparian area changes in water temperature, chemistry, sedimentation, and channel blockages.

- Use Allotment Management Plans as the vehicle for ensuring protection of riparian areas from unacceptable impacts from grazing. Institute positive measures such as salting, herding, water developments, fencing, rest rotation, deferred rotation, and other grazing systems as mitigation measures. If mitigation is unsuccessful in preventing unacceptable resource damage to the riparian habitat, as a last resort, livestock grazing will be reduced or eliminated in the affected areas.

- Rehabilitate and/or fence riparian areas that consistently show resource damage from any cause if conflicts cannot be resolved.

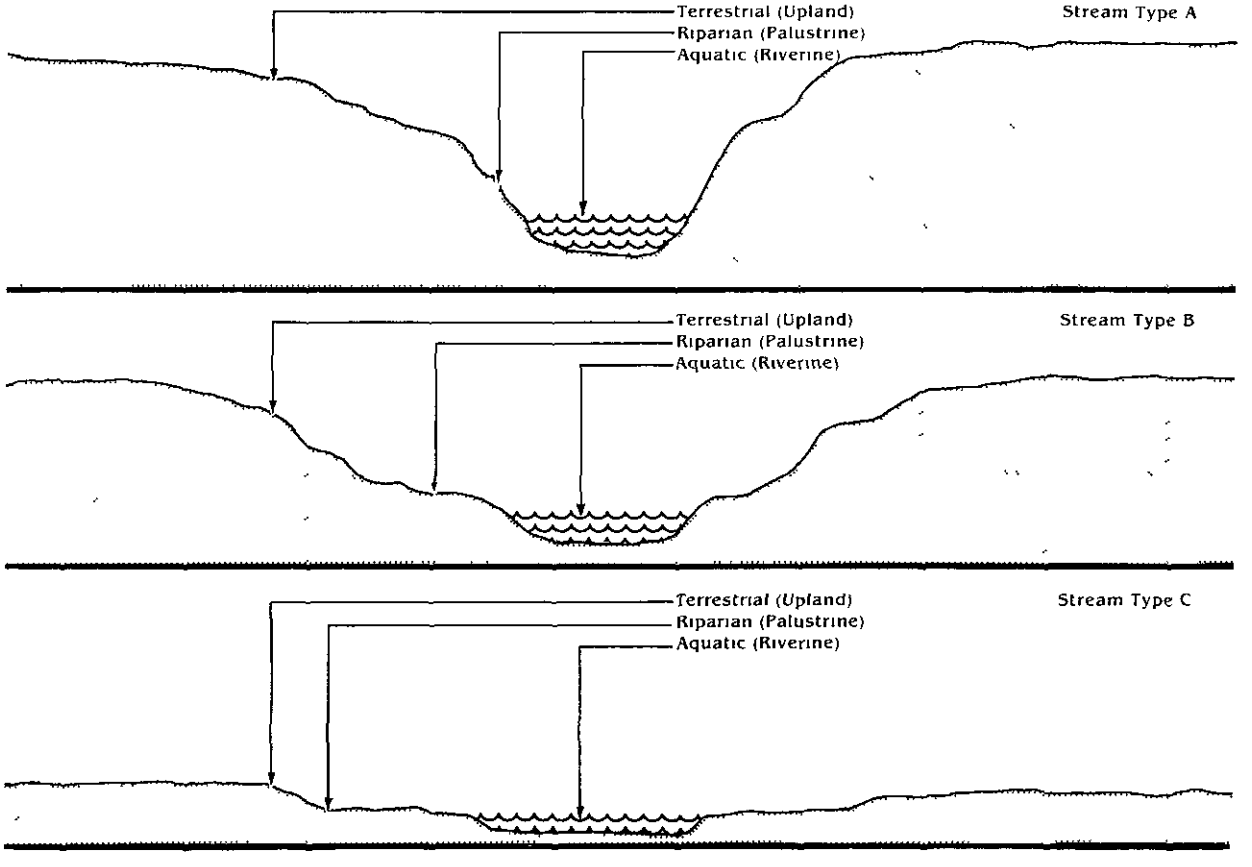
- Relocate existing roads, trails, and campsites outside riparian areas where necessary to eliminate or reduce unacceptable deterioration of riparian-dependent resources.

- Allow new developments and surface disturbance in riparian areas only after on-site evaluations have determined that riparian-dependent resources are not adversely affected, or mitigation of adverse impacts is identified and incorporated in project design and implementation specifications.

- Apply the following earth disturbance standards to each zone within each stream type. These standards apply to the amount of post-project disturbance. Earth disturbance is defined as complete removal of vegetation or a percentage of bare ground resulting from of the disturbance.

Earth Disturbance Standards

Zone	Type	Amount of Earth Disturbance Permitted on Any 100-Meter Reach
AQUATIC		
—Standing or running water	See Forest Wide Standards & Guidelines	
RIPARIAN		
—Terrestrial habitat adjacent to water bodies in which plants are rooted in water or in saturated soil	A	3%
	B	5%
	C	10%
TERRESTRIAL		
—Upland area adjacent to riparian zone, in which water availability influences land form and vegetation	A	10% (If entrenched, on unstable terrain or on a slope 40% allow only 5% disturbance)
	B	
	C	20% (No restriction)



- Limit wildfire control methods and activities that would adversely affect the riparian zone. Avoid dozer-built lines in this zone where possible. Emphasize the restoration of dozer impacts on riparian zones when rehabilitating fire control sites.

- Require the following waterbar spacing on trails in riparian areas unless specifically determined otherwise by on-site project evaluations:

Trail Gradient (%)	Spacing (feet)
1-5	200
6-10	150
11-15	100
>15	50

- Prohibit new locations of equipment staging areas in riparian zones. Phase out existing staging areas that have adverse effects on these zones.

- Maintain the integrity of desert springs in the White and Inyo Mountains and the South Sierra Eastern Escarpment to conserve plant and wildlife habitat.

- Recognize the important and distinctive values of riparian areas when implementing management activities. Give preferential consideration to riparian-dependent resources when conflicts among land use activities occur.

- Delineate and evaluate riparian areas before implementing any planned management activity.

- Design range, fish and wildlife habitat improvement projects and/or silvicultural prescriptions to maintain or enhance riparian area dependent resources.

- Give priority to the rehabilitation of riparian areas when planning range, wildlife habitat, and watershed improvement projects.

- Move existing livestock watering locations out of riparian areas when and where feasible.

Sensitive Plants

- Develop and implement a consistent, systematic, biologically sound program for sensitive plant species and their habitat so that federal listing does not occur.

- Complete inventories of project sites and areas of disturbance if there is potential habitat or known population locations are identified. The reporting procedures for this process will be outlined in the Sensitive Plant Program Management Plan for the Forest.

- Complete interim management recommendations for all listed sensitive plant species (the Watch I, Watch II, and Sensitive Species lists).

- Allow no new disturbance of identified sensitive plant habitat without direction from Interim Management Guides, Species Management Guides, or an environmental analysis.

- Allow scientific studies when there is no detrimental effect on sensitive species.

- Develop Species Management Guides and subsequent recovery plans for all species on the Forest sensitive plant list. They will provide background information and present status of the species, locate new populations, identify potential enhancement opportunities, locate key areas necessary for long-term protection, and describe maximum impact levels. Utilize information from the Natural Diversity Database, the California Department of Fish and Game and the U.S. Fish and Wildlife Service.

Special Interest Areas and National Natural Landmarks

- Evaluate and recommend candidate Special Interest Areas for classification and candidate National Natural Landmarks for nomination by 1990.

- Manage the existing Ancient Bristlecone Pine Forest Botanical Area under the approved management plan.

- Protect the characteristics of the candidate areas until evaluation is completed.

Timber

- Conduct a silvicultural examination and construct a prescription before any vegetative manipulation or cultural treatment. Make exceptions for the removal of hazard trees or trees that block vision along roads, rights-of-way clearings, mineral operations, minor amounts of removal by public fuelwood gathering, and similar cases.

- Locate and design timber sales with consideration for the Visual Quality Objectives of the surrounding landscape and existing and potential recreation use.

- Timber sale contracts will make provision for access across timber haul roads for officially designated nordic and snowmobile trails.

- Allow openings created by regeneration harvest to border or include natural openings if other resource values are protected. Openings shall generally be surrounded by timber stands five acres in size or larger except that on a case-by-case basis, openings may have up to 15 percent of their periphery in common with other openings.

- Do not enter pure stands of red fir during this planning period.

- Harvest timber in riparian zones and on other moist sites using logging systems that minimize soil disturbance, compaction, and other impacts on those sites in accordance with Regulation Class III requirements.

- Emphasize maximum road spacing in logging system plans and environmental analyses.

- Close or, where possible, obliterate unneeded roads to preclude resource conflicts, while considering OHV opportunities.

- Consider the need for specialized yarding equipment on slopes over 30 percent. Preclude tractor logging on slopes greater than 30 percent in the absence of on-site determinations.

- Conduct logging and/or construction projects to prevent debris from entering stream channels or causing watershed damage. Prohibit yarding logs through streams.

- Schedule planting or seeding within three years of clearcutting, so that adequate restocking can be attained within five years of harvest.

- Plan activities that will favorably modify the microclimate to help ensure plantation success. Include such activities as shelterwood cutting and using shade-cast devices for seedling protection.

- Determine the duration of openings on the basis of assigned Visual Quality Objectives for that area. Apply the guideline that a harvested area will no longer be considered an opening for timber management purposes when stocking surveys indicate that the new stand meets prescribed stocking requirements with trees four and one-half feet tall.

- Continue to honor the unsigned agreement with the Paiute/Shoshone people drafted in 1973. Issue no commercial permits to either Indian or non-Indian for the purposes of picking pinenuts or piuga on National Forest System lands.

- Consider both summer and winter operating seasons in project-level environmental analysis.

- Restrict vehicles to designated roads when vehicle use by woodcutters is causing unacceptable damage to resources.

Visual Resources

- Obtain the Forest Supervisor's approval through the environmental analysis process for any deviations from Visual Quality Objectives (VQOs) assigned in Prescriptions.

- Maintain or enhance the size and diversity of all riparian zones, aspen stands, meadows, and alpine tundra vegetation zones where such zones are visible from Sensitivity Level 1 & 2 roads and trails, or where they receive significant recreation use.

- Rehabilitate and/or enhance the visual resource when implementing projects, where appropriate as follows:

  1. Rehabilitate the visual resource where the existing visual condition fails to meet the assigned VQO.

  2. Enhance the resource where the existing visual condition appears monotonous, and where there is an opportunity to create visual variety in the landscape through planting, vegetative manipulation, or other accepted means.

  3. Base priorities for rehabilitation and enhancement projects upon the VQO assigned to the project area, corridor viewshed plans, and on the following considerations:

     - The relative importance of the area and the amount of deviation from the adopted VQO.

     - The length of time it would take natural processes to reduce the visual impacts so that they meet the adopted VQO.

     - The length of time it would take rehabilitation measures to meet the adopted VQO.

     - The coordination with the resources necessary to rehabilitate the project area.

- Maintain foregrounds and middlegrounds of the scenic corridors of the following travel routes to Retention and/or Partial Retention VQOs as inventoried, but not less than Partial Retention:

  1. Highways officially designated by the state as California State and County Scenic Highways.

  2. California State Scenic Highway System routes as designated in the September 1970 Master Plan. These highways include:

     - State Highway 120, west of U.S. 395 to Tioga Pass
     - U.S. 395
     - State Highway 158
     - State Highway 203
     - State Highway 168.

- Meet the Retention VQO in all foreground zones of other Sensitivity Level 1 roads and trails, recreation sites, and within all concentrated recreation areas.

Watershed

Soils

- Reduce accelerated soil erosion resulting from management activities to natural background levels within three years after the soil-disturbing activity.

- Conduct an Order 2 Soil Resource Inventory or an on-site soil investigation to evaluate all areas that are scheduled for modification (vegetation manipulation, construction, etc.) or subject to concentrated use.

- Avoid the use of soil-disturbing equipment, OHVs, and trampling by livestock on wet or poorly-drained soils whenever possible.

- Use earth-retaining structures or other special methods as needed on steep slopes or in areas of instability.

- Keep dozer-constructed fire lines as narrow as possible, and provide for concurrent erosion control on areas with long, continuous gouges in areas of shallow, compacted, or highly erodible soils.

- Conserve the surface mineral and/or surface organic layer of the soils by minimizing soil disturbance to maintain long-term productivity.

- Store topsoil on-site in areas subject to mechanical disturbance. Respread as the top layer when the project is completed.

- Avoid land alterations that could potentially cause significant soil erosion and loss of soil productivity.

- Stabilize all areas disturbed by management activities to minimize soil erosion.

- Apply the Best Management Practices (BMPs) from the handbook, "Water Quality Management for National Forest System Lands in California" (U.S.D.A., Forest Service, 1979) when implementing ground-disturbing activities that may reduce the productivity of the landbase or cause surface erosion or mass wasting.

- Require an interdisciplinary review to avoid or mitigate adverse impacts for any projects or activities proposed in areas identified in the soil resource inventories as having an erosion hazard rating of nine or greater.

- Limit disturbance to no more than five percent per decade on that portion of a management area characterized by steep slopes, very high erosion potential, or high instability.

Water

- Maintain or improve water quality to meet state and federal standards. Cooperate and coordinate with state and federal agencies when planning projects that could affect water quality.

- Implement Best Management Practices (BMPs) to meet water quality objectives and maintain and improve the quality of surface water on the Forest. Identify methods and techniques for applying BMPs during project level environmental analysis and incorporate into the associated project plan and implementation documents.

- Secure water rights for existing and foreseeable future National Forest consumptive uses according to state law. Convert all National Forest System water uses into the name of the Forest Service where possible.

- Obtain water availability assurances for existing and foreseeable future nonconsumptive uses through the special use permit and the Federal Energy Regulatory Commission (FERC) "4E Report" processes.

- Manage watersheds with the priority of maintaining and protecting existing healthy watersheds before rehabilitating degraded systems.

- Require the following waterbar spacing on dozer-constructed fire lines:

Slope gradient (%)	Spacing (feet)
1-3	300
4-6	250
7-9	150
10-14	125
15-20	80
21-40	60
41+	40

- Do not channelize natural streams unless there are no other options.

- Maintain instream flows needed to maintain stream channel competence.

- Design construction activities within streams to avoid sedimentation in the aquatic zone.

- Manage all stream reaches to maintain or improve their Stream Channel Stability Rating (SSR) to 110 or less for all domestic water supply watersheds.

- Manage sensitive stream reaches (those with bank protection ratings of 16-20) according to the following guidelines for all domestic water supply watersheds:

  1. Do not allow the sum of trampling and chiseling scores to exceed 20 percent.

  2. Do not permit roads, trails, or livestock paths to cross streams in these reaches unless they are satisfactorily mitigated.

  3. Maintain adequate instream flows to retain soil protecting riparian vegetation.

- Locate roads and trails on natural benches or ridges well away from stream courses and other water bodies where possible. Avoid constructing roads and trails that parallel or cross tributaries to a main stream.

- Use the steepest permissible pitches and grades to avoid paralleling the stream at stream crossings. Design to maintain the existing width:depth ratio of the stream.

- Use repeated treatments, if necessary, to establish vegetation on fill material where bridges or culverts cross streams.

- Heavily armor the streambed both upstream and downstream from each road, trail, and livestock path crossing that has neither a bridge nor a culvert. Give highest priority to streams that contain threatened or endangered trout species and watersheds that provide domestic water supplies.

- Use the following spacing of cross-drains on unsurfaced roads as a guide:

Road Gradient (%)	Spacing (feet)
1-3	1,200
4-6	700
7-9	400
10-14	250
15-20	120

- Outslope unsurfaced roads and trails where user safety and designed use are not jeopardized.

- Avoid creating berms that hinder drainage on low gradient roads.

- Revegetate roads and trails when use is terminated.

- Return all lands in declining watershed condition to equilibrium.

Wild and Scenic Rivers

- Develop management plans in conjunction with the Sequoia National Forest for the newly designated North Fork of the Kern and South Fork of the Kern Wild and Scenic Rivers.

- Undertake no management activities that would preclude designation of the Middle Fork of the San Joaquin River as a Wild and Scenic River.

Wilderness

- Develop management plans or amend existing plans to address wilderness designated by the California Wilderness Act of 1984 or any wilderness legislation enacted during the planning period.

- Manage wilderness under the following guidelines: maintain a predominantly natural and natural-appearing environment, facilitate low frequencies of interaction between users, and exercise necessary controls primarily from outside the wilderness boundary. Any on-site controls should be subtle.

Wildlife

Threatened, Endangered, and Sensitive Animal Species

- Consider threatened and endangered species as below viability until recovery is achieved. Emphasize the protection and improvement of habitat for threatened or endangered wildlife. Manage for the protection and enhancement of all historically and potentially threatened or endangered species habitat as necessary to meet recovery levels.

- Cooperate with the Fish and Wildlife Service and California Department of Fish and Game in the management of threatened and endangered species and the restoration of habitat. Submit proposals for actions that might affect the continued existence of a threatened or endangered species to the U.S. Fish and Wildlife Service for formal consultation.

- Develop and implement a consistent, systematic, biologically sound strategy to manage sensitive species and their habitats so that federal listing does not occur.

- Permit scientific studies on sensitive species only if the studies would benefit the species.

Management Indicator Species

Management Indicator Species are those that the Forest identified for one or more of the following reasons: federally designated threatened or endangered species; sensitive species; harvest species; ecological indicator species; or special interest species.

Populations of species in these categories will be maintained at viable levels. These Standards and Guidelines apply to existing and potential habitats for these species.

Carnivores (State-listed or Sensitive): Sierra Nevada red fox, pine marten, fisher, wolverine

1. Inventory project areas where development or habitat alteration projects could alter habitats required by these species.

2. Maintain the integrity of habitats required by these species. Manage known habitats to ensure that breeding and adjacent foraging habitats are maintained.

Mule deer (Harvest)

1. Maintain or enhance the integrity of key winter ranges, holding areas, migration routes, and fawning areas for mule deer. Although management activities may allow for some alteration of their habitat, the goal is to maintain deer habitat to support deer population levels consistent with deer herd management objectives.

- Design vegetative treatment units on summer, winter, and transition ranges so that the distance from forage to cover does not exceed six hundred feet.

- Recognize the sensitivity of infringement on known key mule deer fawning areas during the critical fawning period from June 15 to July 15. Resolve conflicts in favor of fawning areas.

- Manage summer and transition ranges for each herd to provide a thermal cover to forage ratio between 20:80 and 80:20 on each area.

- Develop water sources where water is needed and opportunities are available.

- Coordinate with Caltrans and the counties to provide the safest possible road crossings for mule deer.

2. Recognize the importance of key deer habitats. Emphasize the protection of critical deer habitat when analyzing development proposals.

3. Determine forage allocation for deer on the basis of five pounds of forage per deer per day (6.5 deer per AUM).

4. Coordinate with California Department of Fish and Game in implementing existing deer herd plans. Cooperate with the Department of Fish and Game in the preparation of needed additional deer herd plans.

Bald eagle (Endangered)

1. Manage for recovery. Recovery may require the management of potential sites as well as occupied sites.

2. Use the presence of bald eagles and results of the habitat capability model for the species to establish the existing and potential wintering areas including winter roosts, foraging areas, and daytime perches.

3. Maintain the integrity of existing wintering areas. Do not establish new winter uses or recreation developments within one-quarter mile of such areas.

4. Maintain and enhance fish, waterfowl, and other prey-base populations within winter foraging areas where opportunities exist.

5. Implement the Pacific States Bald Eagle Recovery Plan. Prepare a local winter bald eagle management plan that tiers to the Pacific States Plan.

Golden eagle and prairie falcon (Special Interest)

1. Maintain or enhance the integrity of nesting habitats for golden eagles and prairie falcons.

   - Limit human disturbance within one-quarter mile of nest sites from February 1 through June 30.

   - Provide for several successional stages and vegetation types within five miles of nest sites.

   - Provide artificial ledges on cliffs where the lack of ledges is a limiting factor.

Tule elk (Special Interest)

1. Follow the direction of the Tule Elk Management Plan for the Owens Valley.

Peregrine falcon (Endangered)

1. Implement the Pacific Coast American Peregrine Falcon Recovery Plan prepared by the U.S. Fish and Wildlife Service.

2. Establish two nesting pairs of peregrine falcons.

Goshawk (Sensitive)

1. Maintain a density of at least one goshawk territory per eighteen square miles within goshawk habitat range. Distances between territories or clumps of territories will not exceed twelve miles. Goshawk habitat range is defined as an area containing active or potential nesting habitat as defined below.

2. Maintain at least one hundred acres of mature timber per territory to provide suitable conditions for the nest stand and an alternate nest stand. If the nest stand and an alternate nest stand are known, delineate at least fifty acres around each stand. If only the nest stand is known, delineate either one hundred acres around the nest stand or at least fifty acres around the nest stand and, within a half-mile radius, at least fifty acres around a potential alternate nest stand. Ensure that replacement stands are incorporated in territories.

3. Give preference to currently active nest territories when delineating a population network.

4. Include the following elements in potential goshawk habitat or territories retained to assure species viability: (a) five or more vegetation types and three or more seral stages within two miles of the nest stand; (b) at least 40 percent canopy cover; (c) a water source within one-quarter mile of the nest stand; and (d) a nest stand location on a slope of less than 20 percent.

5. Locate territories in areas classified as unsuitable for commercial timber management wherever possible.

6. Exclude timber activities within occupied nest stands during the nesting period. Timber activities during other time periods should be limited to those activities that meet the habitat variables associated with suitable habitat in the Forest's goshawk habitat capability model.

Blue grouse (Harvest)

1. Maintain or enhance blue grouse habitat by protecting vegetative diversity, riparian habitat, and down logs.

Sage grouse (Harvest)

1. Maintain a shrub canopy cover of at least 20 percent on at least 30 percent of vegetation treatment areas within six miles of known strutting grounds (leks).

2. Allow no vegetative treatment in sage grouse habitat that would have a significant negative impact on this species.

3. Recognize the sensitivity of sage grouse leks during the period from March 1 and April 30. Resolve conflicts in favor of sage grouse.

4. Cooperate with the California Department of Fish and Game in reintroduction efforts.

Spotted owl/Great gray owl (Sensitive)

1. Conduct periodic inventories. If spotted owl pairs are located, manage their habitat as needed to maintain natural distribution on the Forest.

2. If great gray owls are documented, maintain foraging and nesting habitat where management activities could alter their habitat.

Sierra Nevada mountain sheep (Sensitive) and Nelson mountain sheep (Special Interest)

1. Maintain existing mountain sheep habitat. Where feasible, expand their ranges by transplanting animals to suitable unoccupied habitats as per the criteria stated in the Sierra Nevada Mountain Sheep Recovery Plan.

2. Permit no increase in existing livestock use if the increase is shown to be deleterious to mountain sheep populations as defined in the Recovery Plan.

3. Maintain the health of established mountain sheep populations. If disease transmission from domestic livestock is shown to be deleterious to mountain sheep populations, find ways to alleviate this problem.

4. Prohibit the conversion of livestock type from cattle to sheep on or adjacent to existing or approved reintroduction sites for mountain sheep.

5. If reintroduced mountain sheep establish themselves in drainages outside the reintroduction sites, take advantage of opportunities to extend mountain sheep range, consistent with other resource activities.

6. Develop and implement a recovery and conservation plan for Nelson sheep similar to the one devised for Sierra Nevada sheep. Update the Sierra Nevada Mountain Sheep Plan.

7. Provide for the long-term viability of Sierra Nevada and Nelson mountain sheep populations by promoting reestablishment of these species into suitable habitat within historic range, giving preference to areas with no current livestock use and consistent with other resource activities.

Riparian area-dependent Species

1. Maintain the viability of the yellow warbler by implementing management direction for snags, down logs, riparian habitats, and habitat diversity.

Snag-dependent Species

1. Maintain the viability of the hairy woodpecker and Williamson sapsucker by implementing management direction for snags, down logs, and habitat diversity.

Habitat Types

Forested Habitats

Successional Stages: Grass-forb, shrub-seedling, pole, mature and old growth.

Wildlife Habitat Relationship Types (WHRs): Eastside (Jeffrey) pine, lodgepole pine, mixed conifer, red fir, subalpine forest, pine-juniper, oak woodland and quaking aspen.

1. Maintain a minimum of 5 percent in each successional stage and each canopy cover class for each WHR habitat type. Recommended area size for implementation of this guideline is 10,000 acres.

2. Limit regeneration harvest area size to 40 acres. Limit area size for other treatments (i.e. overstory removal, commercial thinning) to a range of 80 to 140 acres unless determined otherwise in the environmental analysis process.

3. Manage to achieve the desired dispersion as soon as possible if a given vegetation type/seral stage combination is below long-term minimum levels.

4. Utilize both suitable and unsuitable timberlands to meet the diversity requirement as long as habitat characteristics for management indicator species are fully met.

5. Design treatment areas to have wavy or feathered edges, so a high "diversity index" is achieved. Design treatment areas larger than 10 acres so they have a diversity index greater than 1.4.

Down Logs (To provide woody material foraging sites for cavity-nesting wildlife.)

1. Leave in place an average of one log/acre in the Jeffrey pine forest where possible. In other coniferous forest types, leave in place an average of one log/acre that is at least twenty inches in diameter at the large end, and at least twenty feet long.

2. Give preference to logs and slash piles within 100 yards of meadows, standing water, streams, or the edges of regeneration units. Where possible, move logs to achieve a density of two to three logs per acre in such areas.

Old Growth (A forested stand that is past maturity and showing signs of decadence. The last successional stage in a forest ecosystem.)

1. Apply the following priority sequence when designating stands to be managed for old growth habitat values.

   - Those stands that best meet old growth conditions and are not managed for commercial timber production.

   - Stands that serve the needs of several resources, such as riparian habitat, watershed, and aesthetics.

   - Stands that are not managed for commercial timber production.

2. Allocate no less than 10 percent of the acreage to the late seral stage component in areas managed for timber, including both the suitable and unsuitable component.

3. Apply a minimum size requirement of forty acres to old growth stands managed primarily for wildlife habitat.

4. Review and display old growth stands and wildlife habitat needs for the entire timber compartment when planning individual timber sales.

5. Consider the following options when planning for old growth management:

   - Extend rotations for designated stands on commercial timberlands. Include a pattern of long-term stand replacement

that ensures the continued presence of old growth stands over time.

- Reserve old growth stands on non-commercial timberlands over time.

- Select specific stands for old growth management in areas where sufficient stands do not presently exist, or where old growth is projected for harvest. Document these selections. Document any decision to forego the old growth component for a specific area.

6. Manipulate vegetation (e.g., intermediate harvest, planting, snag creation), where necessary, to maintain or enhance old growth habitat.

<u>Snags</u> (Standing dead trees over twenty feet tall.)

1. Maintain dead or down trees that are needed for cavity-nesting species.

2. Prescribe snag densities for each snag-dependent wildlife species or group of species (guild) for each timber compartment.

3. Manage snags on suitable timberlands to the extent possible to achieve an average density of 1.2/acre (15-24" dbh) plus 0.3/acre (>24" dbh); all should be higher than twenty feet.

4. Manage snags on nonsuitable timberlands and all riparian areas to the extent possible to achieve an average density of 1.5/acre (15-24" dbh) plus 0.5/acre (>24" dbh).

5. Manage snags on pinyon-juniper woodlands to achieve an average density of 0.8/acre (15-24" dbh), plus 0.2/acre (>24" dbh), where such larger snags are available. Manage the smaller snags to achieve an average density of 1.0/acre where larger snags are not available.

6. Give preference to snags around seeps, springs, and successional edges.

7. Manage snags in clumps of three to five, each clump representing a maximum area of five acres in riparian areas.

8. Count no more than ten snags on a given acre in terrestrial habitats toward fulfilling prescribed average snag density for an area. Groups of snags covering areas larger than 10 acres cannot be considered clumps.

9. Select snags >20 feet high and >16 inches in diameter to manage for wildlife habitat.

10. Consider snag creation where existing snag density falls below acceptable levels.

11. Permit snag cutting only in areas where the hard snag level exceeds three per acre, or where snags could endanger life or property, such as public use or work project areas.

Shrub Habitats

Shrub Habitat Types: High elevation (alpine shrub, montane shrub, wedgeleaf ceanothus); low elevation (curlleaf mahogany, bitterbrush, big sagebrush, low sagebrush); and high desert (saltbush-greasewood, shadscale).

Successional Stages (not applied to high elevations: <20% canopy cover (grass-forb); 20-40% canopy cover; >40% canopy cover.

1. Maintain a minimum of 15 percent of total shrub habitat in each successional stage in low elevation and high desert shrub types.

2. Limit vegetation treatment area size to a range of 80 to 140 acres in most cases. Design treatment areas so they have wavy or feathered edges and a diversity index greater than 1.4.

3. Bring all grazed habitats to at least fair condition with an upward or static trend on lands grazed under rest-rotation and deferred rotation systems.

4. Defer livestock grazing on vegetation treatment areas 1.5 to 2.5 years to allow establishment of herbaceous vegetation.

5. Address the management of all forage classes, including forbs, in terms of grazing systems and season of use in Allotment Management Plans.

6. Locate areas proposed for treatment in shrub habitats where existing herbaceous understory represents at least 10 percent of total vegetative cover.

Management Prescriptions

Management Prescriptions

Management Prescriptions specify how all the Forest resources will be managed to emphasize a specific resource. Each prescription has a different resource emphasis. Several prescriptions may be implemented within one Management Area, depending on the resources and use of the area.

This section describes the purpose of each prescription, what the resource emphasis will be and where the prescription will be applied. It displays direction for management of each resource. There are eighteen prescriptions that will be implemented.

No.	Prescription	Page
1.	Designated Wilderness	107
2.	Proposed Wilderness	113
3.	Mountain Sheep Habitat	116
4.	Mule Deer Habitat	117
5.	Research Natural Areas	119
6.	Mono Basin National Forest Scenic Area	122
7.	Ancient Bristlecone Pine Forest	123
8.	Wild and Scenic Rivers	126
9.	Uneven-aged Timber Management	130
10.	High Level Timber Management	132
11.	Range	134
12.	Concentrated Recreation Area	136
13.	Alpine Ski Area, Existing and Under Study	138
14.	Potential Alpine Ski Area	140
15.	Developed Recreation Site	143
16.	Dispersed Recreation	145
17.	Semi-Primitive Recreation	147
18.	Multiple Resource Area	149

Designated Wilderness (#1)

The purpose of this prescription is to protect wild lands and their wilderness values of natural ecological integrity and natural appearance.

The emphasis is on providing opportunities for solitude, challenge, and primitive recreation.

This prescription applies to the existing Ansel Adams, Hoover, Golden Trout, John Muir, South Sierra, and any Wilderness designated by Congress during the planning period.

Element	Management Direction
Air Quality	Monitor air quality on Class I airsheds to detect degradation. Recommend abatement measures after Air Quality Related Values and indicators are determined.
Cultural Resources	Protect significant cultural properties by limiting or distributing use.
Energy	Permit no new energy developments.
Facilities	Allow no road construction.
	Manage the trail system as determined in the management plan for each wilderness. Maintain trails to assigned maintenance levels.
	Mount signs to be unobtrusive and not detract from the surrounding natural environment. Sign only as needed for progressive travel. Do not sign features other than passes.
	Use fords at stream crossings unless a bridge is needed for safety or route connection. Construct needed bridges using materials and methods that will best preserve wilderness values.
	Emphasize the use of native materials when designing resource protection improvements.
	Allow snow survey cabins to remain in wilderness only if essential for the safety of surveyors. Remove snow survey cabins after the associated survey sites have been correlated with, and replaced by, sites outside wilderness. Make exceptions if a cabin is needed for safe long-distance travel to a site that is still in use.

	Where a demonstrated need is identified, allow automatic snow survey instrumentation and temporary seismic stations in wilderness with the condition that the facilities will be periodically evaluated for need. When the instruments are no longer needed, the facilities would be removed and the site restored to as near a natural condition as possible.
Fisheries	Allow aerial fish stocking in wilderness if it avoids impacts on visitors and involves only lakes that were aerially stocked before the affected wilderness was legislatively designated. Licensed fishing is allowed.
Geology	Consider the risk from landslide and seismic processes when locating new trails. Provide information on these risks to wilderness users.
Lands	Attempt to acquire all private land inholdings.
Minerals	Determine the validity of existing mining claims when a plan of operations is submitted. Subject to valid existing rights, designated wilderness areas are withdrawn from further mineral entry. Administer operating plans to protect wilderness values and grandfathered valid existing rights. Allow no mineral leasing, including geothermal leasing, in designated wilderness. Permit no sales or extraction of common variety minerals in designated wilderness.
Pest Management	Allow insect and disease infestations to run their natural courses except where it is necessary to prevent unacceptable damage to resources on adjacent lands or to prevent unnatural loss to the wilderness resource because of exotic pests.
Protection	Use the fire suppression strategies of confinement, containment, or control for management of unplanned natural fires. Control all unplanned human-caused fires. Obtain approval prior to emergency use of the following suppression activities: Regional Forester approval for tractor use and/or for heliport construction; Forest Supervisor approval for helispot construction, retardant application other than short-term or fugitive-dye, wheeled vehicles, generators, or chain saws (unless for direct suppression).

Apply low-impact suppression tactics such as reliance upon natural barriers unless more direct attack is needed to protect persons or adjacent property values. Favor the use of water over land disturbance. Favor cold-trailing over handline construction.

Mitigate temporary fire camps, helispots, evidence of vehicles, and other disturbances created by emergency fire suppression activities.

Use prescribed fire (planned ignitions only) to reduce the risks and consequences of wildfire within wilderness or escaping from wilderness to an acceptable level.

Range

Administer the range grazing program as defined by Forest Service Manual 2323.2 (Wilderness) and Forest Service Manual 2200 (Range).

Allotment Management Plans (AMPs) will consider recreational stock grazing.

Recreation

Distribute publications to wilderness users that emphasize wilderness regulations, etiquette, and health and safety considerations including fire safety.

Allow the dispersed recreation activities appropriate to Primitive and Semi-Primitive Non-Motorized Recreation Opportunity Spectrum (ROS) classes. Allow no off-highway/over-snow (OHV/OSV) vehicle use.

Emphasize minimum impact camping techniques when interacting with wilderness users or developing informational handouts.

Require that campsites be located one hundred feet or more from lakeshores, trails and streams where terrain permits, but in no case closer than twenty-five feet.

Advocate and enforce the pack-it-in, pack-it-out program for trash.

Prohibit discharge of firearms except for emergencies, or for taking wildlife as permitted under state game laws.

Prohibit wood fires in areas that are environmentally sensitive or where wood is scarce.

	Allow loose herding of pack and saddlestock only where trail conditions make it unsafe to tie stock together.
	Prohibit overnight picketing or tethering of stock in meadows. Require that stock tied overnight be tied to hitch lines on hard sites.
	Require that feed for recreation stock be packed into the wilderness under the following conditions: before the grazing season, where feed is unavailable, or where grazing would damage natural resources.
	Prohibit tying of stock within one hundred feet of water, trails, or campsites except when loading or unloading. When loading or unloading, tie stock only to trees eight inches in diameter or larger.
	Issue no new permits for pastures or stock packing services in the Ansel Adams, Hoover, John Muir, or Golden Trout Wildernesses. Allow for a transfer permit when ownership changes or permits are renewed if continued use is compatible with wilderness management objectives.
	Emphasize the number of wilderness rangers during the restricted season in heavily used, popular areas to maximize personal contacts with wilderness users.
Threatened, Endangered, or Sensitive Species	Protected sites of threatened, endangered, or sensitive plants and animals by restricting or redirecting use.
Timber	Allow no timber harvesting.
Visual Resources	Meet the Preservation Visual Quality Objective (VQO).
Watershed	Permit weather modification as long as effects on climate, wilderness use seasons, and other resources are acceptable.
	Incorporate the Forest Watershed Improvement Needs Plan while protecting wilderness values.
	Educate the public with regard to Giardia.
Wild and Scenic Rivers	Incorporate both wild and scenic river management direction and wilderness management where a designated river segment extends into designated wilderness.

Wilderness	Establish capacity limits for each wilderness and implement entry limits on specific trailheads to regulate use when use exceeds capacity.
	Establish the season during which entry limits will apply. The restricted use season may vary from one trailhead to another.
	Redirect or restrict use where necessary to restore impaired wilderness resources.
	Limit party size and number of stock per party to a level that protects social and natural resource values. The level may vary within or between wildernesses.
	Apply trailhead entry quotas to both commercial and noncommercial users.
	Determine the current level of noncommercial and commercial backpacking and mountaineering use. Establish an appropriate level for these types of use.
	Apply quotas on the Pacific Crest Trail to only those travelers who begin their trip at a trailhead with quotas.
	Prohibit wheeled mechanical devices including, but not limited to, bicycles, wagons, and carts except those needed for administrative purposes or for use by physically handicapped persons under special permit.
	Construct no benches, tables, or shelters.
	Allow plant collection and scientific research under permit on a case-by-case basis.
	Require the removal of airplane wreckage by owner or insurance company.
	Notify the appropriate military authority of low-level flights over wilderness until flights cease. Coordinate with the Federal Aviation Administration to update wilderness boundaries on flight charts.
	Limit commercial wilderness activities under permit to those that meet public needs and cannot be provided elsewhere.
	Permit no competitive type events in wilderness.

Wildlife

Protect the integrity of natural ecological processes by restoring those processes that have been altered by human activities.

Protect key habitat for Management Indicator Species by limiting or distributing use.

Manage mountain sheep habitat to maintain and/or enhance carrying capacity. Relocate existing or construct new recreation trails only in areas where the trails will not cause significant adverse effects upon the use by mountain sheep of their habitat. Identify and provide for this sensitivity in the appropriate wilderness management plan.

Licensed hunting is allowed.

Proposed Wilderness (#2)

The purpose of this prescription is to recognize and protect wilderness attributes of Further Planning Areas recommended for wilderness pending Congressional designation.

The emphasis is on providing traditional public uses during the interim that do not jeopardize designation as wilderness.

This prescription applies to the Table Mountain and Tioga Lake Further Planning Areas and portions of the White Mountains and Paiute-Mazourka Further Planning Areas. These total approximately 172,600 National Forest System acres.

Element	Management Direction
Air Quality	Maintain Air Quality Related Values.
Energy	Permit no new energy developments or leases.
Facilities	Allow no road construction or reconstruction.
	Maintain, reconstruct, or construct trails on the current inventory according to established Forest-wide priorities.
	Retain other facilities if desired, but do not expand them.
Fisheries	Continue current management, including aerial fish stocking and habitat improvement to the extent that wilderness values are not adversely affected. Licensed fishing is allowed.
Lands	Consider the acquisition of private lands inside the proposed wilderness boundary on a Forest-wide priority basis.
	Allow special uses to continue, but not to expand. If a current permit terminates or expires, a new permit will only be issued on an annual basis.
Minerals	Determine the validity of existing mining claims when a plan of operations is submitted.
	Administer operating plans to protect inherent wilderness attributes and grandfathered valid existing rights.
	Allow no mineral leasing, including geothermal leasing, in proposed wilderness.
	Permit no sales or extraction of common variety minerals in proposed wilderness.

Pest Management	Allow insect and disease infestations to run their natural courses except where they would unacceptably threaten the wilderness resource, the resources of adjacent lands, livestock, or human health and welfare.
Protection	Use the fire suppression strategies of confinement, containment, or control for management of unplanned natural fires. Control all unplanned human-caused fires. Minimize environmental disturbance when suppressing fires.
Range	Manage the grazing program to protect wilderness values. Address specific management needs in Allotment Management Plans.
Recreation	Allow traditional recreational uses, including motorized access, to continue unless wilderness values are seriously threatened. Allow OHV use on existing designated routes. OSVs may be used off roads and trails unless restricted by the new Winter Motor Vehicle Use Map. This map will be developed as an update of the 1977 Motor Vehicle Use Map with public participation during Plan implementation. Manage for Primitive or Semi-Primitive Non-Motorized ROS classes.
Special Interest Areas	Propose no new Special Interest Areas in proposed wilderness.
Timber	Allow no timber harvesting. Allow public fuelwood gathering of only dead and down material unless wilderness values are threatened.
Visual Resources	Meet the Preservation VQO.
Watershed	Incorporate the Forest Watershed Improvement Needs Plan while protecting wilderness values.
Wilderness	Replace this prescription with Prescription #1, amending the Forest Plan as necessary, if and when Congress designates additional wildernesses.
Wildlife	Manage wildlife habitat while protecting wilderness values. Manage mountain sheep habitat to maintain and/or enhance carrying capacity. Relocate existing or

construct new recreation trails only in areas where the trails will not cause significant adverse effects upon the use by mountain sheep of their habitat. Identify and provide for this sensitivity in the appropriate wilderness management plan.

Licensed hunting is allowed.

Mountain Sheep Habitat (#3)

The purpose of this prescription is to provide high quality habitat for mountain sheep to maintain or enhance existing population levels.

The emphasis is on mountain sheep habitat. Other management activities will be curtailed if they present unresolvable conflicts with mountain sheep management objectives.

Element	Management Direction
Energy	Recommend in favor of energy development where development is determined to be compatible with wildlife values. Recommend against energy development where impacts to wildlife values cannot be mitigated or are unacceptable.
Facilities	Locate trails and manage their use so they do not conflict with mountain sheep habitat. Establish no roads or heliports where they would conflict with mountain sheep.
Minerals	Commensurate with the sensitivity of mountain sheep on their wintering grounds, work with claimants and mineral operators to limit mineral exploration and development activities within mountain sheep winter range during the period when the animals are using the winter range.
Protection	Use the fire suppression strategies of confinement, containment, or control for management of unplanned natural fires. Control all unplanned human-caused fires. Prescribed fire may be used for habitat improvement.
Range	Permit no increase in livestock use if the increase is shown to be deleterious to mountain sheep populations.
Recreation	Manage for Primitive and Semi-Primitive ROS classes. Allow no OHV/OSV use. Resolve conflicts between mountain sheep and hang gliding in favor of mountain sheep.
Visual Resources	Meet the Retention VQO.
Wildlife	Evaluate potential transplant sites, giving preference to sites that have no current livestock grazing.

Mule Deer Habitat (#4)

The purpose of this prescription is to preserve or enhance key mule deer habitat in order to maintain or increase existing population levels.

The emphasis is on key mule deer habitat, fawning areas, winter range, migration corridors, and holding areas. Other management activities will be prohibited or reduced if they present unresolvable conflicts in these key areas.

Element	Management Direction
Energy	Recommend in favor of energy development where development is determined to be compatible with wildlife values. Recommend against energy development where impacts to wildlife values cannot be mitigated or are unacceptable.
Facilities	Locate trails and manage their use so they do not conflict with mule deer habitat. Do not establish roads or heliports where they would conflict with mule deer.
Minerals	Work with claimants and mineral operators to limit mineral exploration/development activities within mule deer migration corridors during migration periods, within key fawning areas, and on key winter range if it is determined on a project-specific basis that mineral operations would affect mule deer usage of these habitats.
Protection	Use the fire suppression strategies of confinement, containment, or control for management of unplanned natural fires. Control all unplanned human-caused fires. Prescribed fire may be used for habitat improvement.
Range	Manage livestock Animal Unit Months (AUMs) on key deer winter range and other critical habitats such as migration routes, holding areas and fawning areas according to objectives of the Deer Herd Management Plans approved jointly by the Forest, the Bureau of Land Management and the California Department of Fish and Game.
Recreation	Design new development so that the integrity of mule deer staging areas, migration corridors and key habitat is maintained. Allow the dispersed activities appropriate to Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized and Roaded Natural ROS classes. OHVs are permitted on

	existing designated roads and trails unless otherwise restricted. OSVs are prohibited unless otherwise indicated on the Winter Motor Vehicle Use Map.
Riparian Areas	Improve riparian areas where necessary to enhance fawning habitat.
Timber	Leave vegetation necessary for thermal and hiding cover.
Visual Resources	Meet or exceed the Partial Retention VQO.
Wildlife	Maintain habitat quality in key fawning areas, winter range, holding areas, and key migration routes. Manage vegetation on key habitat areas for optimum forage-to-cover ratios. Manage the remaining non-key winter range to provide the composition and seral stages of preferred brush species that will meet the dietary needs of mule deer. Restrict vehicular access as necessary to protect deer winter range, holding areas, and known key fawning areas. Coordinate with Bureau of Land Management's Benton-Owens Valley Management Framework Plan for seasonal road closure dates to benefit mule deer.

Research Natural Areas (#5)

The purpose of this prescription is to maintain the ecological integrity of target vegetation types, for research, study, and observation.

The emphasis is placed on maintaining natural ecological processes.

Both existing and recommended Research Natural Areas (RNAs) are included. Additional site-specific direction may be found in the documents that established the RNA or subsequent management plans for established RNA. This prescription applies to the following:

Forest Research Natural Areas

Research Natural Area	Status	Data Base Acres	Vegetation Type	Physiographic Province
Indiana Summit	Est. 1932	1,162	Jeffrey pine	Basin Ranges
Harvey Monroe Hall	Est. 1933	3,883	subalpine	Sierra Nevada
White Mountain	Est. 1953	2,004	bristlecone	Basin Ranges
Last Chance Mdw.	Est. 1982	660	foxtail pine	Basin Ranges
Sentinel Meadow	Est. 1983	1,897	lodgepole pine	Sierra Nevada
Whippoorwill Flat	Rec. 1985	3,328	pinyon pine	Basin Ranges
McAfee	Rec. 1985	2,627	alpine fellfield	Basin Ranges

Element	Management Direction
Cultural Resources	Protect identified cultural resources. Coordinate ground-disturbing activities with the Pacific Southwest Research Station Director. As a general rule, excavations for cultural resources may be permitted when the natural integrity of the RNA is not endangered.
Energy	Allow no energy leasing, exploration or development.
Facilities	Do not construct new roads or trails or improve the standard of existing roads and trails unless they specifically contribute to the research objectives of the area.

	Maintain existing roads and trails to current standards.
Fisheries	Coordinate with the California Department of Fish and Game to leave all waterways unstocked.
Geology	Allow no alteration of the groundwater system.
Lands	Permit no utility or transportation rights-of-way.
	Permit scientific study by special use permit or cooperative agreement only. All permits or agreements are executed between the proponent and the Pacific Southwest Research Station Director with prior approval of the District Ranger and Forest Supervisor.
Minerals	Recommend and/or maintain withdrawal from mineral entry.
	Allow no surface occupancy for mineral leasing including geothermal.
	Permit no sales or extraction of common variety minerals.
Pest Management	Allow forces of nature to prevail. Manage pests only when necessary to preserve the values for which the RNA was established.
Protection	Use the fire suppression strategies of confinement, containment, or control for management of unplanned natural fires. Control all unplanned human-caused fires.
Range	Restrict livestock to those areas where grazing is essential for the maintenance of a specific vegetative type. Otherwise, permit no livestock grazing.
Recreation	Allow the dispersed recreation activities appropriate to the Primitive ROS class, but discourage or expressly prohibit any public uses that contribute to modification of the area.
	Prohibit overnight camping, campfires, and motorized uses including OHVs unless authorized by special use permit. OSVs are prohibited unless otherwise indicated on the Winter Motor Vehicle Use Map.
Research and Study	Make areas available for maximum scientific and academic uses that are nondestructive and nonmanipulative.

Riparian	Allow no modification of riparian areas.
Timber	Allow no commercial timber harvesting or gathering of fuelwood.
	Allow no timber stand improvement or reforestation.
Vegetation	Allow no management practices except as required to preserve or restore the vegetative condition for which the area was established.
Visual	Meet the Preservation VQO.
Watershed	Allow no modification of soil or watercourses. Restore man-induced damage to a natural condition.
Wilderness	Uphold the laws governing use and management of wilderness where an RNA is located within a designated wilderness area.
	Follow the more stringent RNA requirements where management differs from that of wilderness.
Wildlife	Allow legal hunting and fishing.
	Allow no enhancement of wildlife habitat.

Mono Basin National Forest Scenic Area (#6)

The purpose of this prescription is to provide for the management of the Mono Basin National Forest Scenic Area as directed by the California Wilderness Act of 1984 (P.L. 98-425).

The emphasis is to protect the area's scenic, geologic, ecologic, and cultural resources while providing for public recreational use, and permitting scientific study and research in accordance with Title III Section 304 of the California Wilderness Act of 1984.

This prescription applies to the lands within the boundaries as described in the Act. The Scenic Area encompasses approximately 116,000 gross acres of the Basin including Mono Lake.

Planning Direction

Section 304 directs in part that a "detailed and comprehensive" management plan for the Scenic Area be submitted within three years after enactment. Direction stipulates that the management plan must be consistent with the protection of water rights, and shall include but not be limited to the following:

- an inventory of natural (including geologic) and cultural resources;
- general development plans for public use facilities including cost estimates;
- measures for preservation of the natural and cultural resources.

Section 304 also directs that the management plan provide for hunting and fishing including commercial brine shrimp operations authorized under state law in accordance with applicable federal and state law, except as otherwise necessary for reasons of public health and safety, the protection of resources, scientific research activities, or public use and enjoyment.

The required Comprehensive Management Plan for the Scenic Area will be tiered to the Forest Plan by:

- identification of the Mono Basin National Forest Scenic Area as a Management Area. However, this Management Area will be assessed in the Comprehensive Management Plan for the Scenic Area.
- the Forest-wide Standards and Guidelines, which apply to the Scenic Area.

Ancient Bristlecone Forest(#7)

The purpose of this prescription is to protect the Ancient Bristlecone Pines for public enjoyment and scientific study. The area was established in 1958 to recognize the botanical, scenic, and historical values on its 28,991 acres (28,887 National Forest System; 104 private). The area is classified as a Special Interest Area.

The emphasis is on maintaining near-natural conditions. All activities are subordinate to the needs of protecting and preserving bristlecone pines and wood remnants.

Additional direction may be found in the establishment record and subsequent management plan.

Element	Management Direction
Energy	Allow no energy exploration or development.
Facilities	Allow administrative facilities at locations and with designs that meet interpretive needs.
	Limit roads and trails to existing routes except for interpretive roads and trails.
Geology	Locate interpretive facilities, including parking areas and trails, outside areas identified as having high risk from landslide or seismic processes.
Lands	Acquire all non-federal lands.
	Permit no new above-ground utility rights-of-way.
	Place existing utilities underground if this is technically feasible.
Minerals	Maintain current mineral withdrawal.
	Coordinate closely with operators of valid mining claims to minimize and mitigate land disturbances as much as possible in proposed operation plans.
	Allow no surface occupancy for mineral leasing, including geothermal.
	Permit no sales or extraction of common variety minerals.
Pest Management	Allow forces of nature to prevail. Manage pests only when necessary to preserve the values for which the Special Interest Area was established.
Protection	Control all wildfires.

	Use no heavy equipment or fire-retardant chemicals for controlling fires without approval of the Forest Supervisor.
	Allow natural fuels to accumulate.
Range	Permit livestock grazing.
Recreation	Allow the recreation activities appropriate in Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized and Roaded Natural ROS classes.
	Provide Development Level 3 and 4 (highly developed) day-use facilities giving priority to those facilities that protect the area.
	Construct interpretive trails, observation areas, visitor contact facilities, and parking areas at locations that do not impact major known scientific study sites.
	Construct no overnight camping facilities within the area.
	Prohibit overnight camping and open fires. Liquid fuel stoves may be used within vehicles.
	Prohibit OHV use and restrict vehicle travel including bicycles to designated routes. OSVs are prohibited for recreation use.
	Allow overnight parking only in designated parking areas during hunting season or by permit.
Riparian	Allow no modification of riparian areas.
Scientific Study	Make the area available for scientific and academic uses that do not cause observable degradation.
Timber	Allow no timber harvesting.
	Allow no fuelwood gathering.
	Allow no removal of wood remnants except for scientific research or museum specimens.
Vegetation	Allow management practices which do not threaten the vegetative condition for which the area was established.
Visual	Manage for the Retention VQO except where necessary to provide public use facilities.

Watershed	Allow no modification of soil or watercourses except to restore damaged areas to a natural condition or to control or prevent erosion.
Wildlife	Allow legal hunting.

Wild and Scenic Rivers (#8)

The purpose of this prescription is to maintain rivers that have been recommended or designated in a free-flowing condition. This is described in the Wild and Scenic Rivers Act of 1968.

The emphasis is on scenic, recreation, geologic, fish and wildlife, vegetation, and cultural values for the enjoyment of present and future generations.

The North Fork of the Kern River and the South Fork of the Kern River have been designated as Wild and Scenic Rivers. Segments of the Middle Fork of the San Joaquin River will be recommended for wild and scenic river status in the Sierra National Forest Plan as the river runs between the two Forests.

This prescription applies to a linear strip paralleling these rivers and extending for approximately one-quarter mile on each side of their banks.

Element	Management Direction
Energy	Permit no hydroelectric development, impoundment, or diversion.
Facilities	Allow limited road construction within recreation or scenic segments. Disallow roads within wild segments.
	Allow trails and trail bridges within all segments.
Fisheries	Protect and improve golden trout habitat.
Geology	Consider the risk from landslide and seismic processes when locating new campsites or trails.
Lands	Acquire non-federal land and easements to implement the Wild and Scenic Rivers Act and to facilitate management of other resources.
	Ensure legal access to non-federal land that is not acquired.
	Permit no utility rights-of-way within wild segments.
	Permit utility rights-of-way within recreation and scenic segments when there are no alternatives.
Minerals	Recreation and Scenic Segments
	Identify and determine the validity of all mining claims on public lands when a plan of operations is submitted.
	Allow mineral leasing, exploration and development including geothermal, where accomplished with no

surface occupancy of the one-quarter-mile strip on either side of the river. This does not preclude crossing the strip with linear facilities at designated locations.

Permit no sales or extraction of common variety minerals.

Wild Segment

Allow no mineral leasing, exploration or development including geothermal.

Permit no sales or extraction of common variety minerals.

Protection

Recreation and Scenic Segments

Control all wildfire and use a technique of fire suppression that minimizes landscape alteration and ground disturbance.

Wild Segment

Use the fire suppression strategies of confinement, containment, or control for management of unplanned natural fires. Control all unplanned human caused fires.

Range

Recreation and Scenic Segments

Permit grazing.

Permit existing structural improvements.

Permit expansion of structural improvements outside designated wilderness provided they meet assigned VQOs and allow for user access.

Wild Segment

Permit grazing.

Limit structural improvements to existing structures.

Recreation

Cooperate with the adjacent National Forests in the Wild and Scenic River recommendation process and in the construction of management plans for the rivers.

Increase public awareness and understanding of the management direction for Wild and Scenic River segments through use of brochures and signs located outside the area.

Recreation Segment

Allow the recreation activities appropriate in Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized, and Roaded Natural ROS classes. Allow OHV use on designated roads and trails only. OSVs may be used off roads and trails unless restricted by the Winter Motor Vehicle Use Map. Provide for camping at designated sites only.

Scenic Segment

Allow the recreation activities appropriate in Primitive, Semi-Primitive Non-Motorized, Semi-Primitive Motorized, and Roaded Natural ROS classes. Allow OHV use on designated roads or trails only. OSVs may be used off roads and trails unless restricted by the Winter Motor Vehicle Use Map.

Provide for recreation in a near-natural setting while allowing other compatible uses.

Allow camping and OHV use at locations at least 100 feet from the river's edge.

Wild Segment

Allow the recreation activities included in Primitive and Semi-Primitive Non-Motorized classes. Allow no OHV/OSV use.

Provide for recreation in a primitive setting that offers considerable physical challenge and requires well-developed outdoor skills.

Allow camping at locations at least one hundred feet from the river's edge.

Provide access by trail for non-motorized use only.

Increase public awareness and understanding of the management direction for Wild and Scenic River segments through use of brochures and signs located outside the area.

Riparian

Protect river, river banks and dependent plants and animals from alteration.

Timber

Recreation and Scenic Segments

Limit timber harvest to maintain or enhance user safety and scenic quality.

	Allow timber stand improvement and reforestation as necessary to maintain or enhance the health and vigor of the stand.
	Wild Segment
	Do not allow timber harvesting.
	Do not allow timber stand improvement and reforestation.
Visual	Recreation Segment: Meet inventoried VQOs. Scenic Segment: Meet the Retention VQO. Wild Segment: Meet the Preservation VQO.
Watershed	Allow no modification of soil or watercourses except to restore damaged areas to a natural state.
	Control or prevent erosion.
Wilderness	Incorporate both wilderness management direction and wild and scenic river management direction where a classified river segment extends into designated wilderness. Apply the most restrictive requirements.

Uneven-aged Timber Management (#9)

The purpose of this prescription is to manage suitable timberlands for the production of wood products using silvicultural treatments that maintain options for other resource emphases during the planning period.

The emphasis is on the production of sawlogs and miscellaneous wood products.

Element	Management Direction
Lands	Locate all private land boundaries prior to sale layout.
Protection	Use the fire suppression strategies of confinement, containment, or control for management of unplanned natural fires. Control all unplanned human-caused fires.
Range	Permit grazing.
Recreation	Provide for dispersed and developed recreation opportunities as defined by mapped ROS classes. Allow OHV use only on existing roads and trails unless authorized by permit. OSVs are permitted on designated corridors, trails and open areas identified on the Winter Motor Vehicle Use Map. Close or re-route designated over-snow trails during active timber sale operations. Permit base facilities and access within this area to serve alpine ski development. These will be identified and evaluated in project-level environmental analysis.
Timber	Utilize uneven-aged management techniques (group selection or single tree selection) using these criteria: - at least three age classes, - each age class comprises at least 10 percent of the basal area of the stand, - at least twenty years between age classes, - one class in the upper third at end of rotation period, - openings up to two acres in size--up to five acres where terrain, stand characteristics, operational factors, or non-timber resource objectives make this necessary, - product objective is large-diameter (~24") sawtimber. Choose site preparation activities that are most compatible with other resource needs.

	Implement precommercial and commercial thinnings and sanitation cuttings to be compatible with other resource needs.
	Retain the integrity of the hardwood component.
Visual Resources	Meet or exceed the Partial Retention VQO.
Wildlife	Maintain an average of 2.2 snags per acre greater than 16-24 inches in diameter (snags may be clustered at a greater density to meet per-acre average).
	Maintain an average of 0.5 snags per acre greater than 24 inches in diameter (snags may be clustered at a greater density to meet per-acre average).
	Maintain and enhance cover and forage areas for deer in key fawning and migration areas.
	Maintain 10 percent of timbered acreage (both suitable and unsuitable) in old growth.

High Level Timber Management (#10)

The purpose of this prescription is to manage suitable timberlands for maximum production of wood products. Management of other resources will be compatible with timber management activities.

The emphasis is on maximum production of sawlogs and miscellaneous wood products.

Element	Management Direction
Lands	Locate all private properties before sale layout.
Protection	Use the fire suppression strategies of confinement, containment, or control for management of unplanned natural fires. Control all unplanned human-caused fires.
Range	Allow no grazing of plantations until the potential for damage to trees no longer exists.
Recreation	Provide for dispersed recreation as defined by the Semi-Primitive Motorized and Roaded Natural ROS classes. Allow OHV use only on existing and new roads and trails. Allow OSVs on designated corridors, trails and open areas identified on the Winter Motor Vehicle Use Map. Close or re-route designated oversnow trails during active timber sale operations.
Timber	Allow for rotation lengths of 120 years for lodgepole pine; 140 years for Jeffrey pine; and 160 years for red fir. Remove overstory when the understory is well established and at least two feet high. Keep clearcut units usually to a maximum of twenty acres. Do not exceed forty acres except in the case of catastrophic occurrences such as fire or insect and disease; on specific timber sales only after sixty-day public notice and review by the Regional Forester. Use machine piling and burning and prescribed fire for site preparation in most cases. Consider other methods if other values are at risk. Release seedlings from competing vegetation in plantations as needed to meet expected growth rates. At the project level, consider a full range of methods to suppress competing vegetation, including mechanical, biological, and chemical techniques and

prescribed fire. Base selection on an analysis of relative effectiveness, environmental effects, and costs.

Control animal damage as needed to protect regeneration considering a full range of methods on a site-specific basis.

Apply precommercial thinning to established plantations and stands that result from overstory removal.

Perform commercial thinning and sanitation intermediate harvests. Begin commercial thinning as soon as yields are available, and assure maximum useable cubic growth in the remaining stand. Use sanitation cutting to capture anticipated stand mortality.

Obliterate all unneeded roads after logging.

Retain the integrity of the hardwood component.

Visual Resources	Meet inventoried VQOs.

Range (#11)

The purpose of this prescription is to maintain or increase forage production and achieve uniform livestock distribution through maintenance or expansion of structural and nonstructural range improvements.

The emphasis is on maintaining a healthy, productive range land resource.

This prescription applies to sparsely forested or non-forested lands of high range productivity (400 plus pounds of palatable forage per acre) within allotments.

This prescription represents the maximum management intensity to be applied and allots up to 50 percent of available forage within one-half mile of water for utilization by livestock. Rejuvenation and type conversion will be practiced on vegetation types where it is cost-effective and treatment is necessary to maintain or improve forage production.

Element	Management Direction
Protection	Use the fire suppression strategies of confinement, containment, or control for management of unplanned natural fires. Control all unplanned human-caused fires. Prescribed fire may be used to increase forage production.
Range	Allow livestock to utilize up to 50 percent of available palatable forage within one-half mile of water developments. Apply the most intensive management on primary range that has 0-30 percent slopes. Make water developments available to maximize forage utilization. Treat vegetation on suitable range to maintain or increase forage production. Develop Allotment Management Plans (AMPs) in an interdisciplinary manner with public involvement, including permittees, state or other federal agencies, and other interested organizations or individuals. Rank each allotment on the Forest according to priority in terms of AMP update.
Recreation	Allow the dispersed recreation activities appropriate in Semi-Primitive Non-Motorized, Semi-Primitive Motorized, and Roaded Natural ROS classes. Allow OHV use only on existing roads and trails. OSVs may be

	used off roads and trails unless restricted by the Winter Motor Vehicle Use Map.
Timber	Take advantage of public fuelwood gathering where that activity would aid in clearing for type conversion projects.
Visual Resources	Meet or exceed the Partial Retention VQO.
Wildlife	Evaluate the potential effect of any range improvement project on fish and wildlife habitat.

Concentrated Recreation Area (#12)

The purpose of this prescription is to manage concentrated recreation areas to maintain or enhance major recreational values and opportunities.

The emphasis is on providing a broad range of facilities and opportunities that will accommodate large numbers of people safely, conveniently, and with little resource damage. Other resource activities will not be prohibited, but they are secondary to recreational values and use and should not detract from them.

Element	Management Direction
Cultural Resources	Integrate cultural resource interpretive opportunities with developed facilities.
	Protect significant cultural resource values from increased exposure to vandalism.
Diversity	Maintain a high level of diversity by allowing for vegetative management activities compatible with recreation objectives.
Fisheries	Improve fisheries habitat commensurate with increased recreational use.
Geology	Consider the risk from landslide and seismic processes when locating new campsites or trails.
Minerals	Ensure that the impacts to the visual resource and developed recreational facilities and programs are appropriately considered in environmental analyses studying the effects of proposed plans of operations for mineral explorations/developments. Ensure that impacts to these resources are mitigated to the lowest level reasonably possible.
Pest Management	Detect the presence of pests early, so that proper pest management measures can be applied to vegetation in highly susceptible concentrated recreation areas.
	Manage vegetation to specifically include pest management considerations.
Protection	Control all wildfire.
Range	Maintain at a level compatible with recreation use.
Recreation	Maintain Roaded Natural and Rural ROS classes.
	Control camping. Allow no dispersed camping unless designated in Management Area Direction and confine overflow occupancy to acceptable sites. Control

fuelwood removal consistent with availability, ROS class, and VQOs.

Allow OHV use on designated routes and trails. OSVs may be used off roads and trails unless restricted by the Winter Motor Vehicle Use Map.

Develop full trail systems to accommodate heavy dispersed activity and to protect sensitive riparian and water areas.

Permit base facilities and access within this area to serve alpine ski development. These will be identified and evaluated in project-level environmental analysis.

Timber

Apply selection harvest, stand maintenance, and other silvicultural methods to maintain or enhance the recreation benefits and attractions provided by a healthy and vigorous multi-aged stand. Other benefiting resources may include riparian areas, wildlife, and fish.

Develop and implement silvicultural prescriptions that specifically include pest management considerations.

Visual Resources

Meet the Retention VQO for all new, non-recreation-oriented facilities and the Partial Retention VQO for all other facilities, including recreation sites.

Meet the Retention VQO when implementing all other resource activities.

Wildlife

Avoid critical or significant wildlife habitats such as key winter deer range, migration routes, holding areas and fawning areas when developing recreation facilities.

Alpine Ski Area, Existing and Under Study (#13)

The purpose of this prescription is to maintain and manage existing downhill ski areas for public use and to complete ski area studies currently in progress.

The emphasis is on upgrading and expanding facilities to meet allowable capacity (Skiers-At-One-Time) consistent with approved plans. The direction applies to existing facilities, expansion of existing ski areas and the construction of new facilities that might ensue from studies in progress.

This prescription applies to the area within the permit boundaries of the Mammoth Mountain and June Mountain Ski Areas and the Sherwin Bowl area that is currently being studied in a separate environmental analysis.

Element	Management Direction
Minerals	Recommend withdrawal from mineral entry.
Protection	Use the fire suppression strategies of confinement, containment, or control for management of unplanned natural fires. Control all unplanned human-caused fires.
Recreation	Allow the recreation activities appropriate in the Rural ROS class. Allow no OHV use. OSVs are prohibited except for corridors identified in the Winter Motor Vehicle Use Plan. Permit further expansion of areas already developed for alpine skiing. Expansion may include runs, lifts, base areas, and access to a degree that is often not compatible with other resource management options. Design and locate improvements to provide for user safety and to harmonize with the natural environment. Follow construction and reconstruction standards specified in the approved Master Development Plan for the area. Allow limited day use and interpretive developments if compatible with ski area development. Establish user-access and vehicle-access controls by agreement between Forest Service and concessionaires.
Timber	Maintain timber stands for health and vigor only. Timber harvest is incidental to ski area expansion.
Visual Resources	Meet or exceed the Partial Retention VQO for runs, lifts, and base areas as seen at middleground distances from Sensitivity Level 1 routes and occupancy sites.

Apply rehabilitation practices where the above VQOs are not being met.

Watershed

Monitor water quality to ensure compliance with water discharge requirements.

Adhere to Erosion Prevention Plans for each ski area.

Wildlife

The following wildlife elements apply only to the expansion of existing facilities and those under study:

Implement seasonal road closures as necessary to protect deer migrations to summer fawning areas.

Restrict the use of ski runs including construction and maintenance in deer migration corridors. These corridors are described in Management Area Direction.

Locate new base facilities where they will not significantly impact migration corridors, fawning areas or staging areas.

Ensure that new ski area facilities, associated developments and roads do not impact major mule deer migration corridors so as to significantly impede deer passage.

Ensure that new ski area facilities, associated developments and roads maintain the integrity of major mule deer staging areas during spring and fall migration.

Potential Alpine Ski Area (#14)

The purpose of this prescription is to maintain the potential for alpine ski development on those areas of the Forest offering downhill skiing opportunities of the highest quality. Manage areas with this prescription to retain their value as potential downhill ski developments.

The emphasis is on maintaining downhill run integrity and future base station locations.

When an area is developed for alpine skiing, Prescription #13 (Alpine Ski Areas, Existing and Under Study) will apply.

Element	Management Direction
Facilities	Recognize that those areas available for consideration for future alpine ski area development contain intrinsic scenic, vegetative, wildlife, and geologic values, as well as providing opportunities for dispersed recreation. Feasibility studies for any ski area proposals should consider the following: 1. Development should reflect a "light-on-the-land" philosophy. 2. Terrain modification for purposes of runs and lifts should be minimized. 3. Structures and other facilities should not be visible from adjacent wilderness. 4. Base facilities involving overnight facilities, large parking areas, and other similar permit operations should be restricted to the periphery of the development areas. 5. Lodge facilities within the development area should be limited to day use and reflect a "warming hut" design and function that is as much in harmony with the adjacent environment as possible considering structural limitations. 6. Construction of access roads within the development area should be limited to that needed to service day use facilities. 7. Access for purposes of lift construction should minimize earth disturbance by reliance on helicopters. Vehicle use for maintenance of water bars, sediment ponds, and lift maintenance should utilize routes which lay lightly on the land.

8. Design of access roads should minimize cuts and fills. Alignment should reflect a low design speed and incorporate curvature that minimizes visual impacts and accommodates access for other appropriate uses.

9. Layout of facilities and structures should minimize removal of vegetation.

Lands

Issue land use permits only if they maintain alpine ski potential.

Minerals

Manage mineral activity to maintain alpine ski potential.

Protection

Use the fire suppression strategies of confinement, containment, or control for management of unplanned natural fires. Control all unplanned human-caused fires.

Range

Allow all range management activities as long as they are compatible with maintaining alpine ski potential.

Recreation

Allow no future planned campground developments to compete with base locations.

Coordinate motorized access needs with the transportation system needs for base development. Allow dispersed activities appropriate in Semi-Primitive Non-Motorized, Semi-Primitive Motorized, and Roaded Natural ROS classes.

Allow OHV use only on designated roads and trails. OSVs are prohibited except for corridors identified in the Winter Motor Vehicle Use Plan.

Close or re-route designated oversnow trails during active timber sale operations.

Research Natural Areas

Propose no RNAs.

Timber

Utilize uneven-aged management techniques (group selection or single tree selection) using these criteria:

- at least three age classes,
- each age class comprises at least 10 percent of the basal area of the stand,
- at least twenty years between age classes,
- one class in the upper third at end of rotation period,
- openings up to two acres in size--up to five acres where terrain, stand characteristics, operational factors, or non-timber resource

objectives make this necessary,
- product objective is large-diameter (~24") sawtimber.

Choose site preparation activities that are most compatible with other resource needs.

Implement precommercial and commercial thinnings and sanitation cuttings to be compatible with other resource needs.

Pure stands of red fir will not be entered during this planning period.

Retain the integrity of the hardwood component.

Visual Resources

Meet or exceed the Partial Retention VQO.

Wildlife

Implement seasonal road closures as necessary to protect deer migration to summer fawning areas.

Restrict the use of ski runs including construction and maintenance in deer migration corridors. These corridors are described in Management Area Direction.

Locate new base facilities where they will not significantly impact migration corridors, fawning areas or staging areas.

Ensure that new ski area facilities, associated developments and roads do not impact major mule deer migration corridors so as to significantly impede deer passage.

Ensure that new ski area facilities, associated developments and roads maintain the integrity of major mule deer staging areas during spring and fall migration.

Developed Recreation Site (#15)

The purpose of this prescription is to maintain developed recreational facilities to provide necessary user services and to protect Forest resource values.

The emphasis is on the recognition of public demand for developed recreation site opportunities.

This prescription is applied to all existing and potential developed sites, whether publicly-operated or concessionaire-operated. The prescription does not apply to alpine ski developments.

The boundaries of developed recreation sites are not mapped because of the small scale of the map and the comparatively low acreage of the sites (existing and potential developed sites total only approximately 1,000 acres on the Forest).

Element	Management Direction
Cultural Resources	Protect significant cultural resources on developed recreational sites to reduce vandalism.
	Design and implement interpretive sites oriented around key cultural resource values.
Energy	Permit energy development where compatible with recreation developments and use.
Minerals	Recommend withdrawal from mineral entry.
Pest Management	Detect the presence of pests early so proper pest management measures can be applied to vegetation in these highly susceptible developed recreation sites.
	Manage vegetation to specifically include pest management considerations.
Protection	Control all wildfire.
Range	Permit no grazing in developed sites.
Recreation	Maintain Semi-Primitive Motorized, Roaded Natural, Roaded Modified and Rural ROS classes.
	Keep the size and extent of development consistent with ROS classifications.
	Encourage increased year-round use of facilities where needed and where not limited by water or sanitation shutdown.
	Confine vehicles to roads and parking spaces. Prohibit OHV use in and adjacent to sites except OHV

	staging areas. OSVs are prohibited for recreation use.
	Design and locate developments to reduce unnecessary vegetation and land-disturbing impacts.
	Provide dispersed facilities that enhance developed site use: trails, signing, etc.
Riparian Areas	Locate and develop new sites to minimize impacts on riparian values.
Timber	Manage timber to eliminate safety hazards and to maintain the recreational attractions and values of sites. Maintain stands in a healthy, multi-aged condition.
	Develop and implement silvicultural prescriptions that specifically include pest management considerations.
Visual Resources	Manage the vegetative settings in and adjacent to sites to meet the Retention VQO within the foreground zone.
	Meet or exceed the Partial Retention VQO for all facilities and developments as seen from Sensitivity Level 1 travel routes or occupancy sites one-half mile or more distant from that site.
	Plant and maintain vegetation to provide screening and a natural-appearing setting that functionally and aesthetically satisfies users.
	Emphasize the natural setting and do not dominate with facilities as seen from within the developed site.
Wildlife	Locate and develop new sites to minimize impacts on wildlife values.

Dispersed Recreation (#16)

The purpose of this prescription is to maintain the potential for both winter and summer high-quality dispersed recreation opportunities.

The emphasis is on dispersed non-motorized recreation to accommodate the increasing public demand for nordic skiing and snowplay without significantly detracting from summer dispersed recreational opportunities.

Element	Management Direction
Energy	Keep to a minimum any fencing because of energy development that excludes recreational use. Large tracts of land will not be fenced.
Geology	Consider the risk from landslide and seismic processes when locating nordic trails. Provide information to nordic trail users on potential risks from landslide and seismic processes.
Minerals	Recommend withdrawal from mineral entry for base facility areas.
Protection	Use the fire suppression strategies of confinement, containment, or control for management of unplanned natural fires. Control all unplanned human-caused fires.
Recreation	Maintain ROS classes as inventoried. Place parking areas in central locations to minimize their number. Meet user demands for increased parking and encourage the utilization of mass transit opportunities. Provide additional parking and an increased trailhead system for dispersed nordic skiing. Permit base facilities and access within this area to serve alpine ski development. These will be identified and evaluated in project-level environmental analysis. Permit OSV use in corridors as identified on the Winter Motor Vehicle Use Map. Allow OHV use only on designated roads and trails. Permit commercial developed nordic operations only in areas of existing alpine base facilities or near the periphery of the prescription boundary. These will be modest day-use facilities.

Close or re-route designated oversnow trails during active timber sale operations.

Develop a recreation composite plan to include a coordinated trail system and support facilities. Coordinate trail systems with adjacent prescription areas.

Timber

Utilize uneven-aged management techniques (group selection or single tree selection) using these criteria:

- at least three age classes,
- each age class comprises at least 10 percent of the basal area of the stand,
- at least twenty years between age classes,
- one class in the upper third at the end of the rotation period,
- openings up to two acres in size--up to five acres where terrain, stand characteristics, operational factors, or non-timber resource objectives make this necessary,
- product objective is large-diameter (~24") sawtimber.

Choose site preparation activities that are most compatible with other resource needs.

Implement precommercial and commercial thinnings and sanitation cuttings to be compatible with other resource needs.

Plan cutting units, access routes, and skid-trail locations to complement dispersed recreation opportunities.

Manage red fir consistent with the Forest-wide Standards and Guidelines.

Retain the integrity of the hardwood component.

Visual Resources

Meet or exceed the Partial Retention VQO.

Maintain the Retention VQO as viewed from Sensitivity Level 1 roads and trails, recreation sites, and within all concentrated recreation areas.

Reroute nordic trails if necessary to maintain a natural-appearing landscape from them.

Wildlife

Maintain the integrity of wildlife habitats.

Semi-Primitive Recreation (#17)

The purpose of this prescription is to limit vehicular access to existing designated routes to protect and maintain recreation and/or wildlife values. These routes will be identified in the update of the Motor Vehicle Use Plan, which will be done when the Inyo National Forest Land Management Plan is implemented. The public will be included in the analysis and identification process.

Existing designated route access will be maintained. Repair and realignments of these designated routes is permitted to protect resources or resolve conflicts. Current road mileage will neither increase nor decrease from the designated routes identified in the updated Motor Vehicle Use Plan.

The emphasis is on providing semi-primitive dispersed recreation opportunities, both motorized and non-motorized.

This prescription applies to those areas that presently provide semi-primitive recreation opportunities.

Element	Management Direction
Facilities	Maintain existing roads at their current maintenance levels after designation. Close and/or obliterate those roads not designated for use. Close new mining roads to public access. Obliterate these roads after they are abandoned.
Minerals	Manage minerals under existing mining laws and regulations.
Protection	Use the fire suppression strategies of confinement, containment, or control for management of unplanned natural fires. Control all unplanned human-caused fires.
Recreation	Allow the dispersed recreation activities appropriate in Primitive, Semi-Primitive Non-Motorized and Semi-Primitive Motorized ROS classes. Manage recreational and scenic opportunities to maintain or enhance their values. Provide for trail access consistent with management objectives for the area and ROS class. Allow OHV use only on designated roads and trails and in the Poleta Canyon designated open area. Allow OSV use off roads and trails unless restricted by the winter Motor Vehicle Use Map. Allow newly developed recreational facilities consistent with ROS classes.

Visual Resources	Meet or exceed the Partial Retention VQO.
Wildlife	Maintain high habitat quality in key fawning areas, winter range, holding areas, and key migration routes. Manage vegetation on key wildlife areas for recommended forage-to-cover ratios. Improve riparian areas where necessary to enhance fawning habitat.

Multiple Resource Area (#18)

The purpose of this prescription is to allow vehicle access on existing routes and areas designated as open. Roads can be constructed or upgraded to facilitate vehicle access for a full range of resource activities.

The emphasis is on providing for the use of all resources.

This prescription applies to lands managed without an individual resource emphasis.

Element	Management Direction
Facilities	Allow roads or other facilities to be constructed or upgraded in support of mineral, range, recreation, and other uses.
Minerals	Manage minerals under existing mining laws and regulations.
Protection	Use the fire suppression strategies of confinement, containment, or control for management of unplanned natural fires. Control all unplanned human-caused fires.
Range	Allow the use of the range by livestock, as specified in individual grazing permits, where grazing allotments overlap areas to which this management prescription is applied. Allow the full use of public roads for access to range allotments.
Recreation	Allow the recreation activities appropriate in Semi-Primitive Non-Motorized, Semi-Primitive Motorized, or Roaded Natural ROS classes. Provide developed facilities to meet user needs and requirements. Allow OHV use on both existing and new planned routes. OSVs may be used off roads and trails unless restricted by the Winter Motor Vehicle Use Map.
Timber	Provide personal use fuelwood in designated areas.
Visual	Meet VQOs as inventoried in the Roaded Natural ROS class. Do not exceed the Partial Retention VQO in Semi-Primitive Non-Motorized and Semi-Primitive Motorized ROS classes.

Wildlife	Manage road and trail systems to maintain habitat quality for wildlife and fish. Road and trail design, construction and maintenance will allow for movements of wildlife and fish species between important portions of their home ranges.

Management Area Direction

Management Area Direction

Management Area Direction provides general direction for management of an area whose boundaries are defined with reference to its unique characteristics. The direction for each area addresses the management situations and resource conditions that are specific to it.

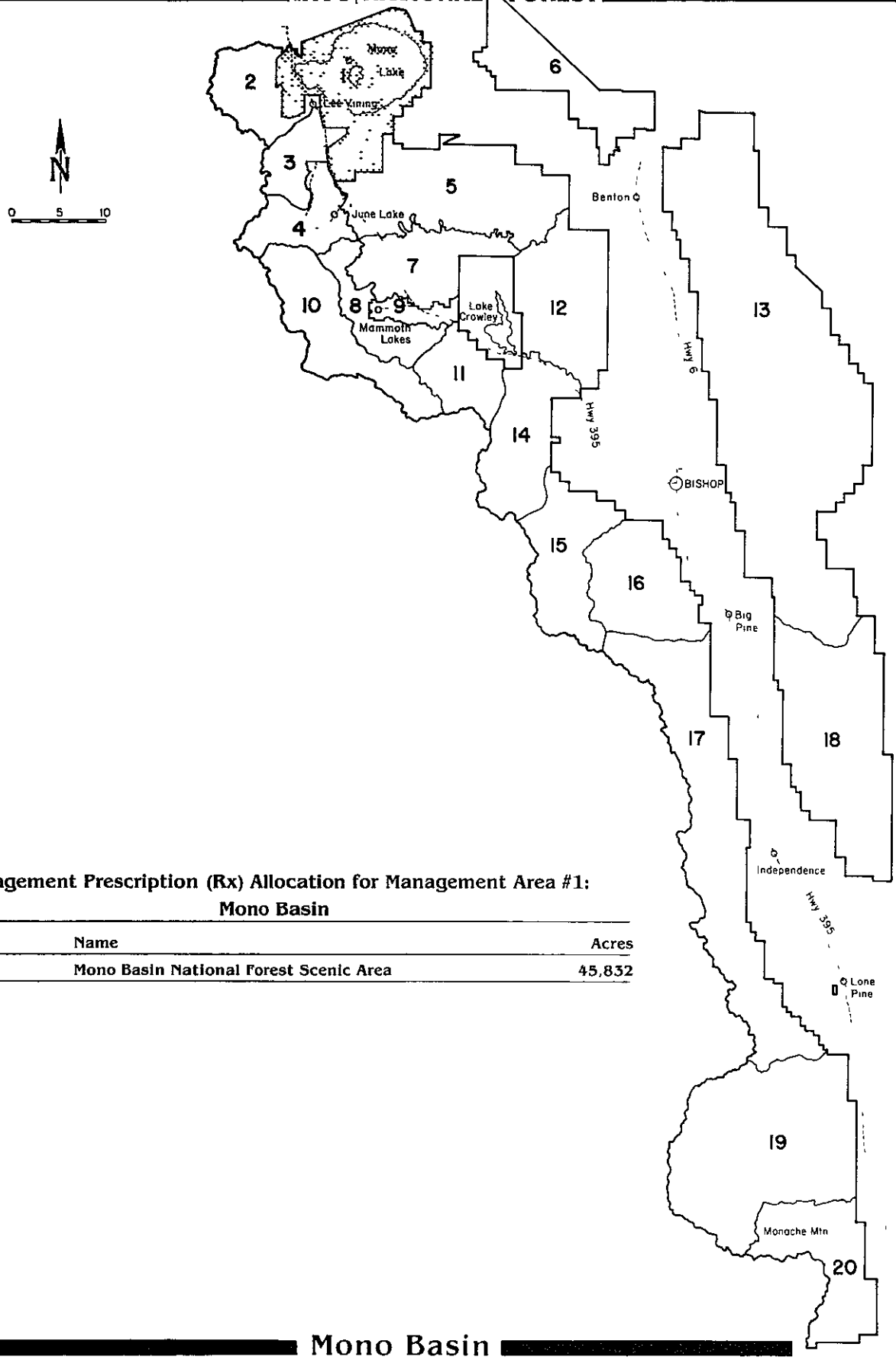
The Forest is divided into twenty Management Areas. Each area is managed under a different set of prescriptions that reflect varying resource emphases. In addition, the Forest-wide Standards and Guidelines apply to all the areas.

Descriptions of each Management Area are displayed in this section with maps that indicate the area's prescription boundaries.

The Management Areas and their locations in this chapter are:

No.	Management Area	Page
1.	Mono Basin	152
2.	Lee Vining	155
3.	Walker-Parker	160
4.	June Lake Loop	164
5.	Glass Mountain	170
6.	Pizona	175
7.	Upper Owens River	179
8.	Mammoth Escarpment	184
9.	Mammoth	190
10.	Reds Meadow-Fish Creek	196
11.	Convict-McGee	200
12.	Benton-Casa Diablo	204
13.	White Mountains	208
14.	Rock Creek-Pine Creek	213
15.	Bishop Creek-Buttermilk	217
16.	Coyote	221
17.	Owens Valley Escarpment	225
18.	Inyo Mountains	229
19.	Golden Trout	233
20.	South Sierra	238

INYO NATIONAL FOREST

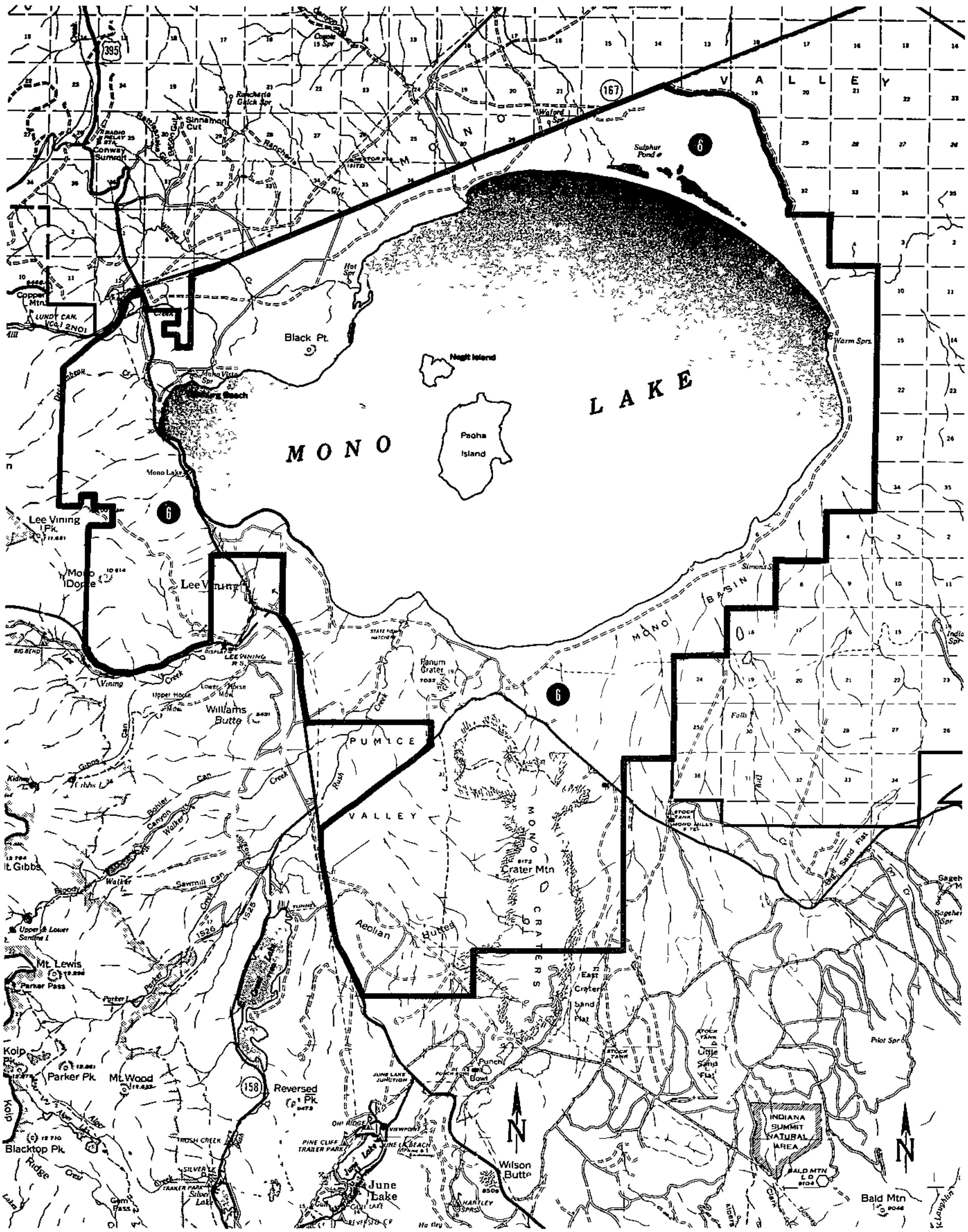


Management Prescription (Rx) Allocation for Management Area #1: Mono Basin

Number	Name	Acres
Rx 6	Mono Basin National Forest Scenic Area	45,832

Mono Basin

Mono Basin



10 Prescription Numbers — Prescription Area Boundary — Management Area Boundary NOT TO SCALE

Mono Basin (#1)

Description

The Mono Basin Management Area corresponds to the boundaries of the Mono Basin National Forest Scenic Area established by the California Wilderness Act of 1984 (P.L. 98-425). It includes the lands immediately surrounding Mono Lake, the northern three-quarters of the Mono Craters, and about two miles of the Sierra Escarpment to the west of Mono Lake. Private land inholdings are numerous and include residences, grazing land, and a few businesses. The City of Los Angeles owns considerable acreage. Also included is a County Park, cemetery, and the area known as Mono Lake Tufa State Reserve.

Topography is nearly flat surrounding Mono Lake, including places where receding water levels have exposed about a mile of lake bottom and tufa formations at the south end. Over fifteen young volcanic cones create a startling backdrop to six-foot tall bitterbrush and sage. The Eastern Sierra Escarpment west of the lake is very steep, and composed of loose rock with pinyon/juniper cover. The high point here is approximately 10,614 feet at Mono Dome, compared to about 6,370 feet at the lake.

Cultural sites include prehistoric campsites and part of an historic railroad grade running from Mono Mills to Bodie.

Recent volcanic activity, evidence of numerous glacial advances, and perhaps the oldest lake in North America make the area important from the standpoint of natural history research and interpretation.

Block pumice unpatented mining claims cover the Mono Craters. Approximately four square miles of Jeffrey pine forest is located just east of the craters.

Portions of several cattle and sheep allotments extend into the Management Area.

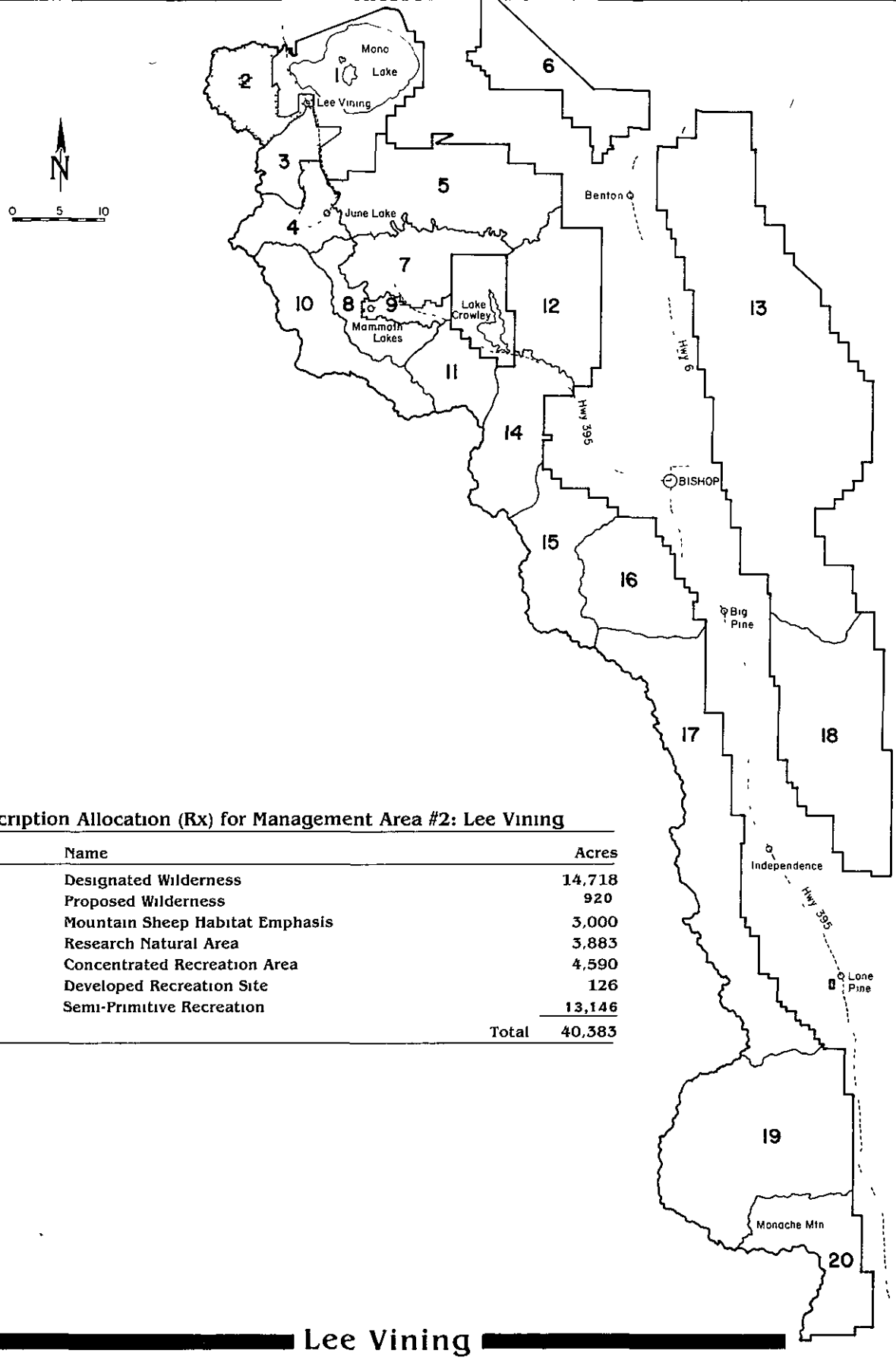
Current recreation use exceeds 150,000 visits per year, many to the south tufa area. Recreation activities include hunting, camping, exploring unique geologic features, and bird watching.

Mono Lake has historically provided habitat for more than 40,000 California gulls during the nesting season. This represents 20 percent of the world population and 95 percent of the state population of California gulls. The lake is also habitat for large numbers of migratory water birds, such as eared grebes, Wilson's phalarope, and snowy plovers.

Management Area Direction

The Scenic Area will be managed under its own plan. Until this Management Plan is approved, interim management direction will be followed. The Forest-wide Standards and Guidelines apply to the Scenic Area and its Comprehensive Management Plan will be tiered to the Forest Plan.

INYO NATIONAL FOREST

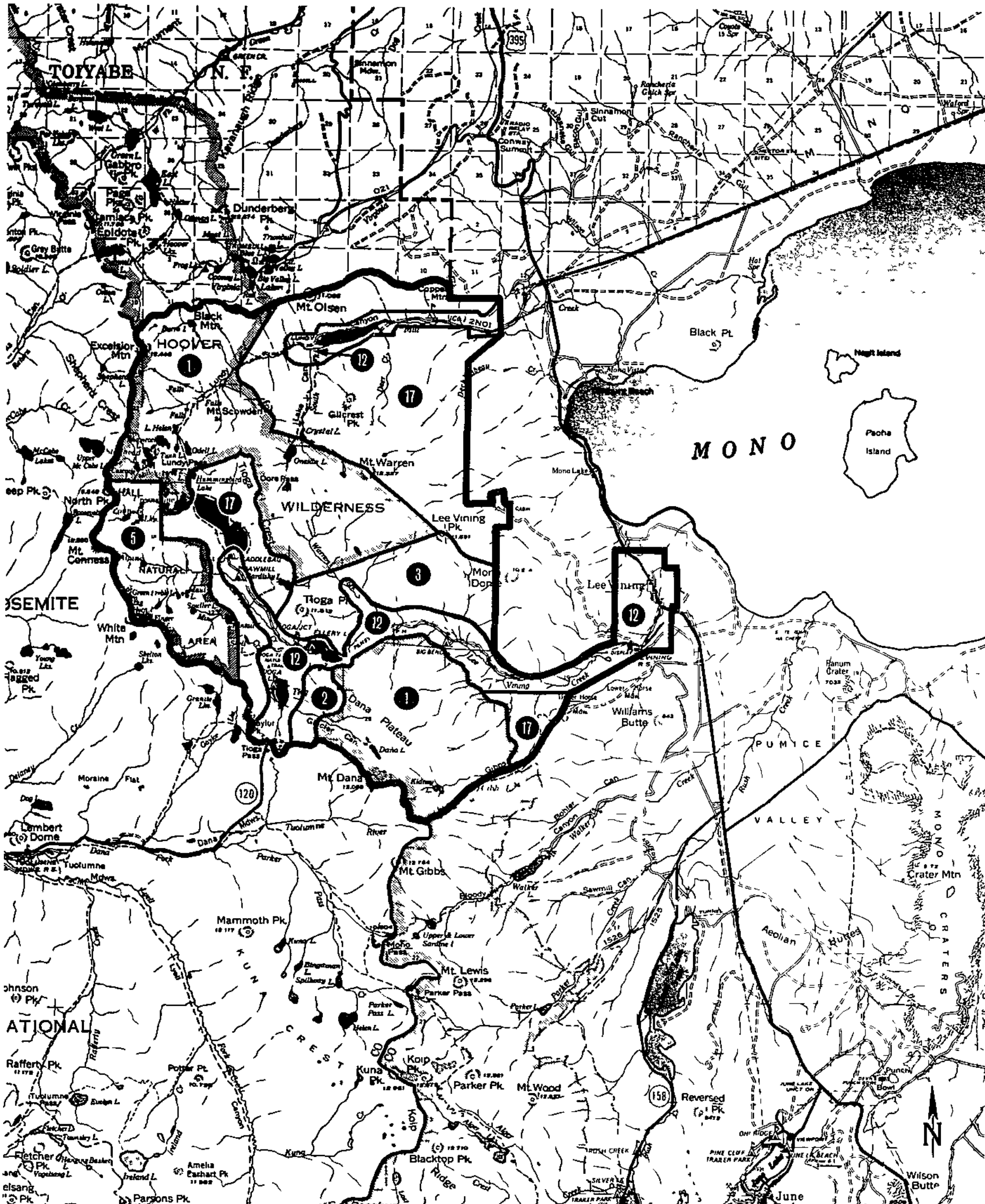


Prescription Allocation (Rx) for Management Area #2: Lee Vining

Number	Name	Acres
Rx 1	Designated Wilderness	14,718
Rx 2	Proposed Wilderness	920
Rx 3	Mountain Sheep Habitat Emphasis	3,000
Rx 5	Research Natural Area	3,883
Rx 12	Concentrated Recreation Area	4,590
Rx 15	Developed Recreation Site	126
Rx 17	Semi-Primitive Recreation	13,146
	Total	40,383

Lee Vining

Lee Vining



Prescription Numbers — Prescription Area Boundary — Management Area Boundary

NOT TO SCALE

Lee Vining (#2)

Description

The Lee Vining Management Area includes Lee Vining Creek and Mill Creek (Lundy) drainages, the southernmost portion of the Hoover Wilderness, and the northernmost tip of the Ansel Adams Wilderness. It is located on the Eastern Sierra Escarpment generally west of the Town of Lee Vining and east of Yosemite National Park. Prominent features include the Town of Lee Vining, and Lundy, Saddlebag, Tioga and Ellery Lakes. Most of the land is in National Forest ownership. Two patented mining claims, Southern California Edison lands in part of the canyon bottoms, and the Town of Lee Vining are exceptions.

Topography is generally very steep and rocky with the notable exceptions of a high, sloping, generally inaccessible bench between the two canyons, and the Dana Plateau. Elevations range from 6,500 feet near Lee Vining to 13,053 feet at Mt. Dana. Access is essentially restricted to canyon bottoms, lakes, and roads. The Management Area contains the Tioga Lake Further Planning Area, evaluated in the RARE II process as having an unmodified natural appearance and providing visual protection to the Tioga Pass Road.

Vegetation is sparse on the steeper slopes where mountain mahogany, various other shrubs, and grasses prevail. Moraine slopes low in Lee Vining Canyon have good stands of pinyon/juniper and sage. The riparian areas contain heavy stands of aspen and willow with some conifers (Lee Vining Canyon has eight species of conifers), and spectacular meadows. The bench between the canyons contains aspen, lodgepole pine, and fir. The higher elevations are mostly alpine grasses with some lodgepole pine and mountain hemlock.

Cultural sites include the oldest camp site in the Mono Basin, located at the Lee Vining Ranger Station, and several 100-year-old mining buildings including the town of Bennettville.

The four lakes all have Southern California Edison dams, with a hydroelectric power plant located in each canyon. The two patented claims are still active in the area. One of these maintains a four-wheel-drive road to the wilderness boundary southwest of Lundy Lake.

There are portions of three grazing allotments in the eastern portion of the area.

The Management Area gets major recreation use from destination-oriented campers and fishermen. The area contains State Route 120, the east entrance to Yosemite National Park, six Forest Service campgrounds, two resorts (special use permits), and County campgrounds. Campgrounds and resorts are usually full all summer. Fishing on the four lakes is very popular.

The Hall Research Natural Area (Hall RNA) is located within this management area. It is devoted to the study of alpine vegetation. The Hall RNA is about nine square miles in size and contains numerous alpine lakes.

In 1985, twenty-seven Sierra Nevada mountain sheep were reintroduced into Lee Vining Canyon to increase the population network of this sub-species. Areas

considered important for these sheep (3,000 acres) will be managed with a mountain sheep emphasis.

Lundy Canyon has also been designated as a potential mountain sheep reintroduction site. An additional environmental analysis will be done prior to a mountain sheep reintroduction. This will determine management objectives. The Lee Vining Canyon and Lundy Canyon mountain sheep will be managed as one population.

Management Area Direction

Cultural Resources

- Maintain the historic site of Bennettville in a state of arrested decay, and interpret for the public. Bennettville is recognized locally as an important site.

Geology

- Emphasize the explanation of glacial geology in any interpretive displays in Lee Vining Canyon.

Range

- Abolish the Sheep and Goat Lee Vining Creek Allotment and manage the allotment area for perpetuation of mountain sheep.

Recreation

- Pursue development of a self-service information display at the summit of Lee Vining Canyon.

- Pursue the acquisition of a recreation land base for development in both Lee Vining and Lundy Canyons.

- Prepare a recreation composite plan for Lee Vining Canyon only after the Forest has acquired a recreation land base in the Canyon.

- Do not rehabilitate Junction Campground to the extent that elimination ceases to be an option when the composite plan is developed.

Visual Resources

- Develop a corridor viewshed analysis and plan for State Route 120 from the Junction of U.S. 395 to Tioga Pass.

- Minimize the visual impact of power production facilities, community utilities, and the Lee Vining Ranger Station complex.

Water

- Continue to coordinate with Southern California Edison to limit reservoir fluctuations to those that are reasonable for required operations.

- Negotiate with public utility entities to return water to portions of the following dewatered streams: Lee Vining Creek, Mill Creek, and Wilson Creek.

Wilderness

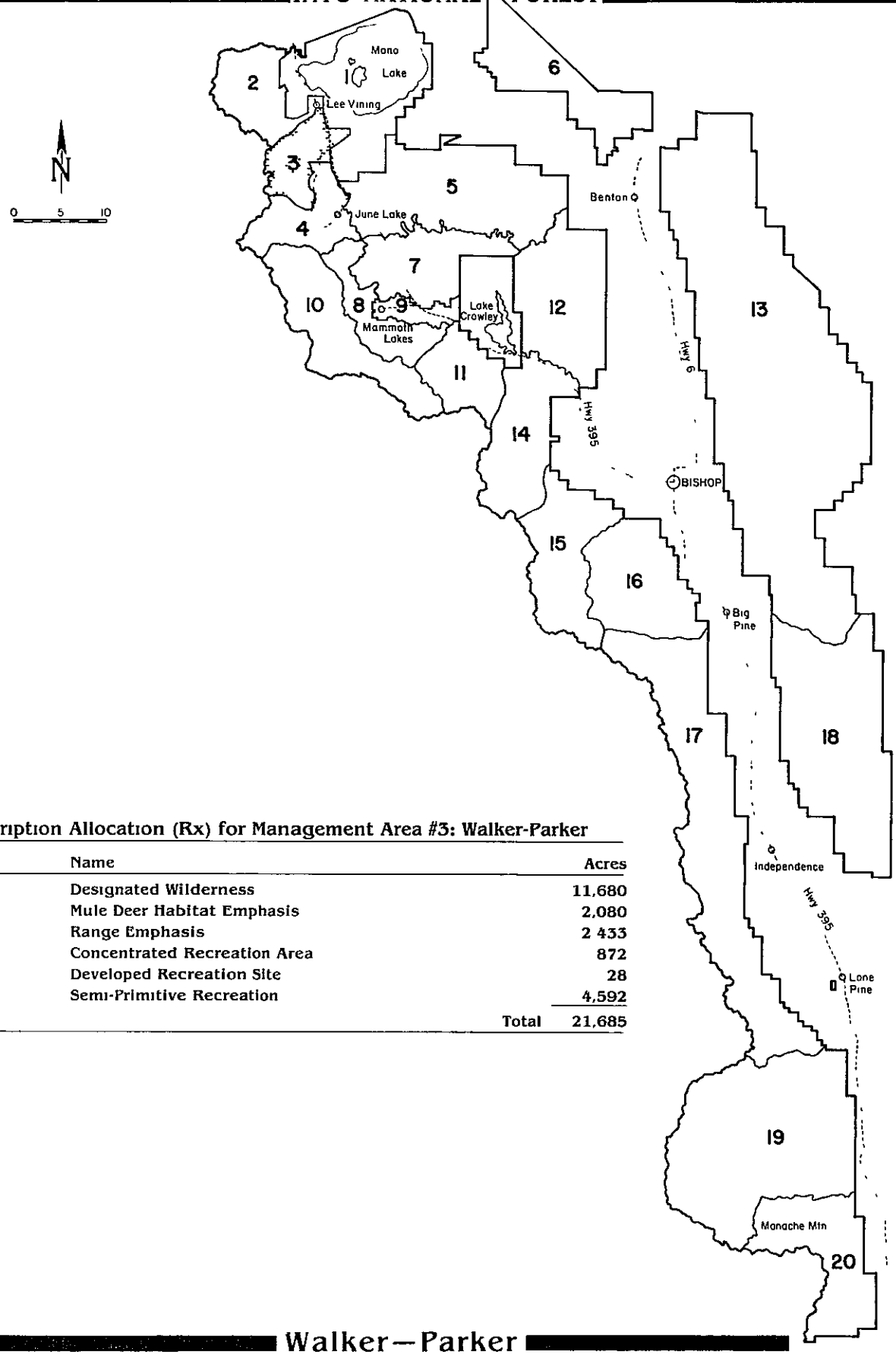
- Recommend the 920-acre Tioga Lake Further Planning Area for wilderness designation. This recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. Final decisions on wilderness designation have been reserved by the Congress to itself.

Wildlife

- Coordinate management of mountain sheep in Lee Vining Canyon with the California Department of Fish and Game and Yosemite National Park.

- Take advantage of opportunities to extend mountain sheep range consistent with other management objectives.

INYO NATIONAL FOREST

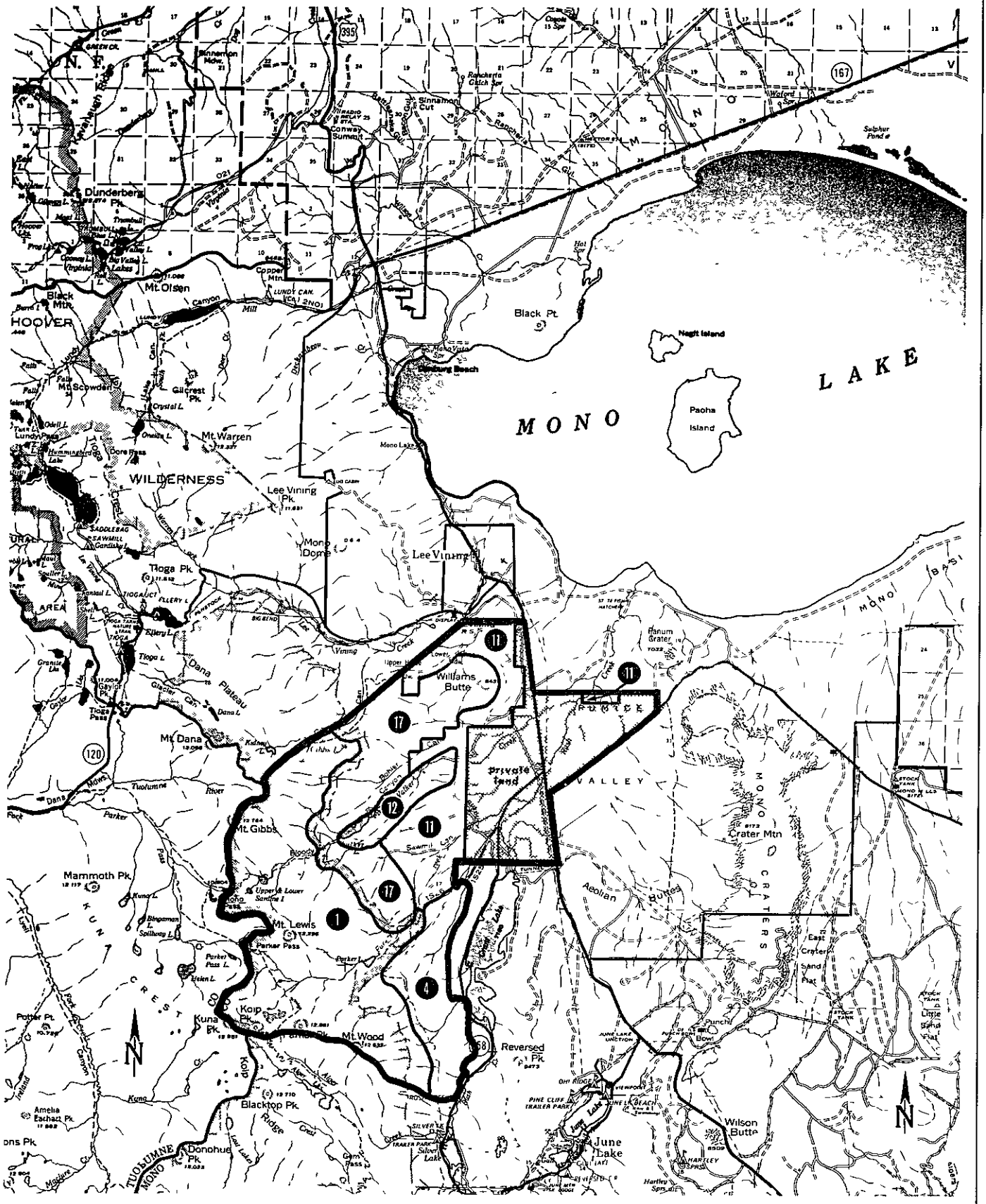


Prescription Allocation (Rx) for Management Area #3: Walker-Parker

Number	Name	Acres
Rx 1	Designated Wilderness	11,680
Rx 4	Mule Deer Habitat Emphasis	2,080
Rx 11	Range Emphasis	2 433
Rx 12	Concentrated Recreation Area	872
Rx 15	Developed Recreation Site	28
Rx 17	Semi-Primitive Recreation	4,592
	Total	21,685

Walker—Parker

Walker—Parker



10 Prescription Numbers — Prescription Area Boundary — Management Area Boundary

NOT TO SCALE

Walker-Parker (#3)

Description

The Walker-Parker Management Area includes the Sierra "front country" between Lee Vining and the June Lake Loop, and a small portion of the Ansel Adams Wilderness. It primarily lies west of U.S. 395, but a wedge-shaped part extends into Pumice Valley east of U.S. 395. Ninety-five percent of the area is visible from any point on a four-mile stretch of U.S. 395. It includes all of Walker and Parker Creeks, as well as Parker Bench. Prominent features include Mt. Gibbs, Koip Peak, Parker Peak, Walker and Parker Lakes, and Parker Bench. Nearly one-third of the area is owned by the City of Los Angeles. Other private land consists of a few private parcels and four or five residences.

Topography is almost flat on one-quarter of the area (including all the Los Angeles lands), rising precipitously along the Eastern Sierra Escarpment. Moraines extend onto the flats from each of the two canyons. Elevations range from 6,500 feet in the east to 12,979 feet at Koip Peak.

The vegetation is diverse and spectacular. Parker Bench contains about four square miles of aspens interlaced with grass/sage openings or mountain mahogany thickets. This area is extremely valuable as mule deer fawning habitat and summer range. The middle one-third of the area contains stands of conifers including white fir nearly 200-feet tall at the west end of Walker Lake. The north end is pinyon/juniper, and the flats are sage/grass or irrigated meadows. Vegetation at the higher elevations is typically sparse sub-alpine.

Numerous prehistoric sites exist, and Bloody Canyon served as a major prehistoric travel route to the Mono Basin from the San Joaquin Valley.

A large portion of the Casa Diablo deer herd summers in this Management Area. The area between Parker and Walker Lakes is especially important as fawning habitat for this deer herd. An estimated 1,250 deer from this herd summer between Deadman Creek and Lee Vining Creek.

Large parts of three grazing allotments are within this area. Much of the Los Angeles lands is irrigated and grazed.

Recreation activities are dispersed camping, fishing, and hunting.

The City of Los Angeles aqueduct traverses most of the area, adding Walker and Parker Creeks as it runs toward Grant Lake. Six miles of Rush Creek is generally dry because of similar diversions. Cain Ranch (a City of Los Angeles camp complex), the area's dump, and a gravel pit are all located on City of Los Angeles lands.

Management Area Direction

Range

- Where possible, utilize the Coordinated Resource Planning process and others to involve the Los Angeles Department of Water and Power and private landowners in resolving grazing and riparian conflicts.

Recreation

- Provide for dispersed day use and overnight camping opportunities consistent with the Roaded Natural ROS class in the area in Prescription #11.

- Provide for developed day-use facilities, parking, and consistent access in the area in Prescription #12, particularly in the Walker Lake area.

- Emphasize Semi-Primitive Non-Motorized recreation activities and opportunities in the area in Prescription #4.

Visual Resources

- Develop a corridor viewshed analysis and plans that include U.S. 395 and State Route 158.

Water

- Negotiate with public utility entities to return water to portions of the following dewatered streams: Rush Creek, Walker Creek, and Parker Creek.

Wildlife

- Emphasize the importance of the Casa Diablo deer herd in management decisions.

MANAGEMENT AREA # 4

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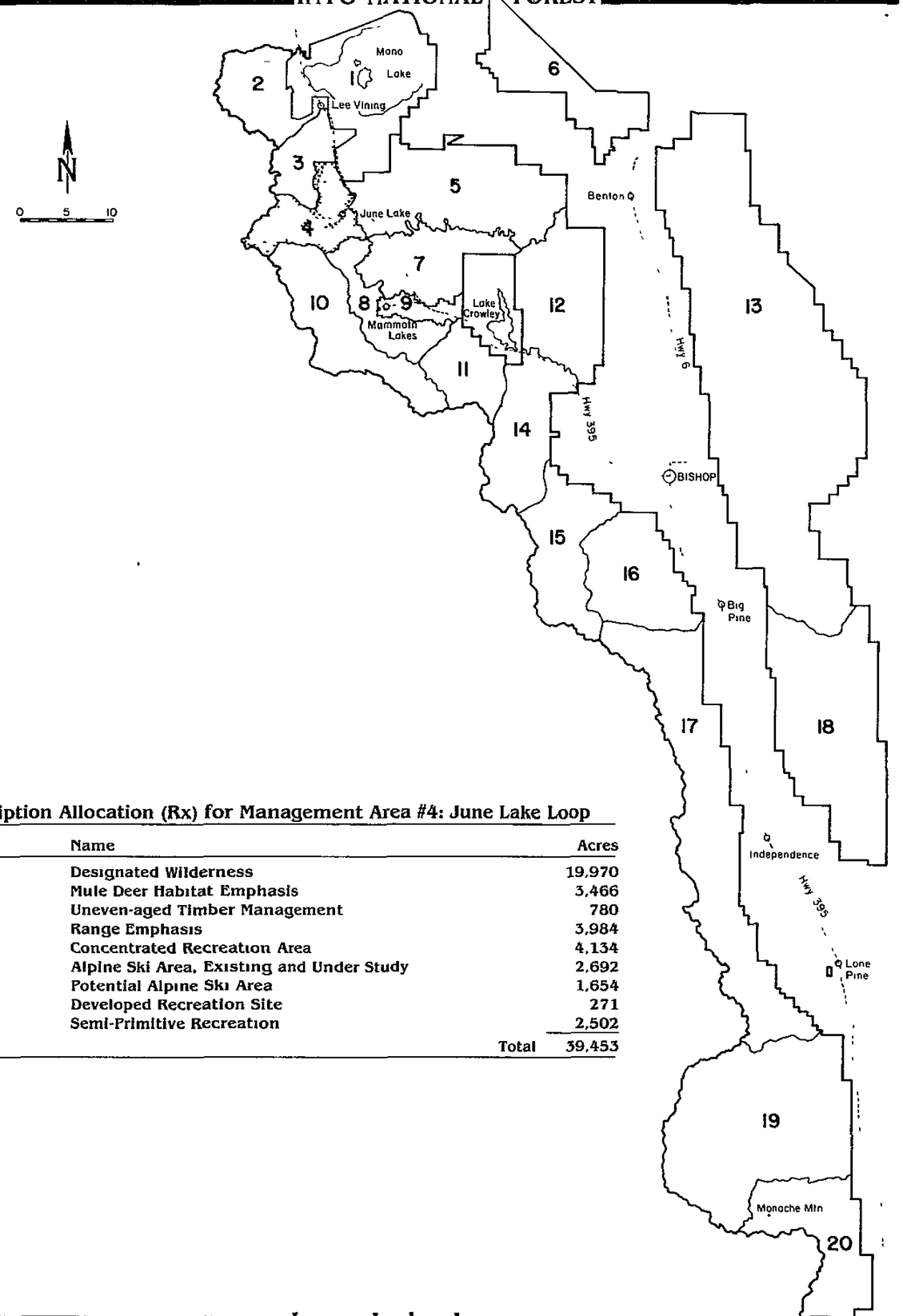
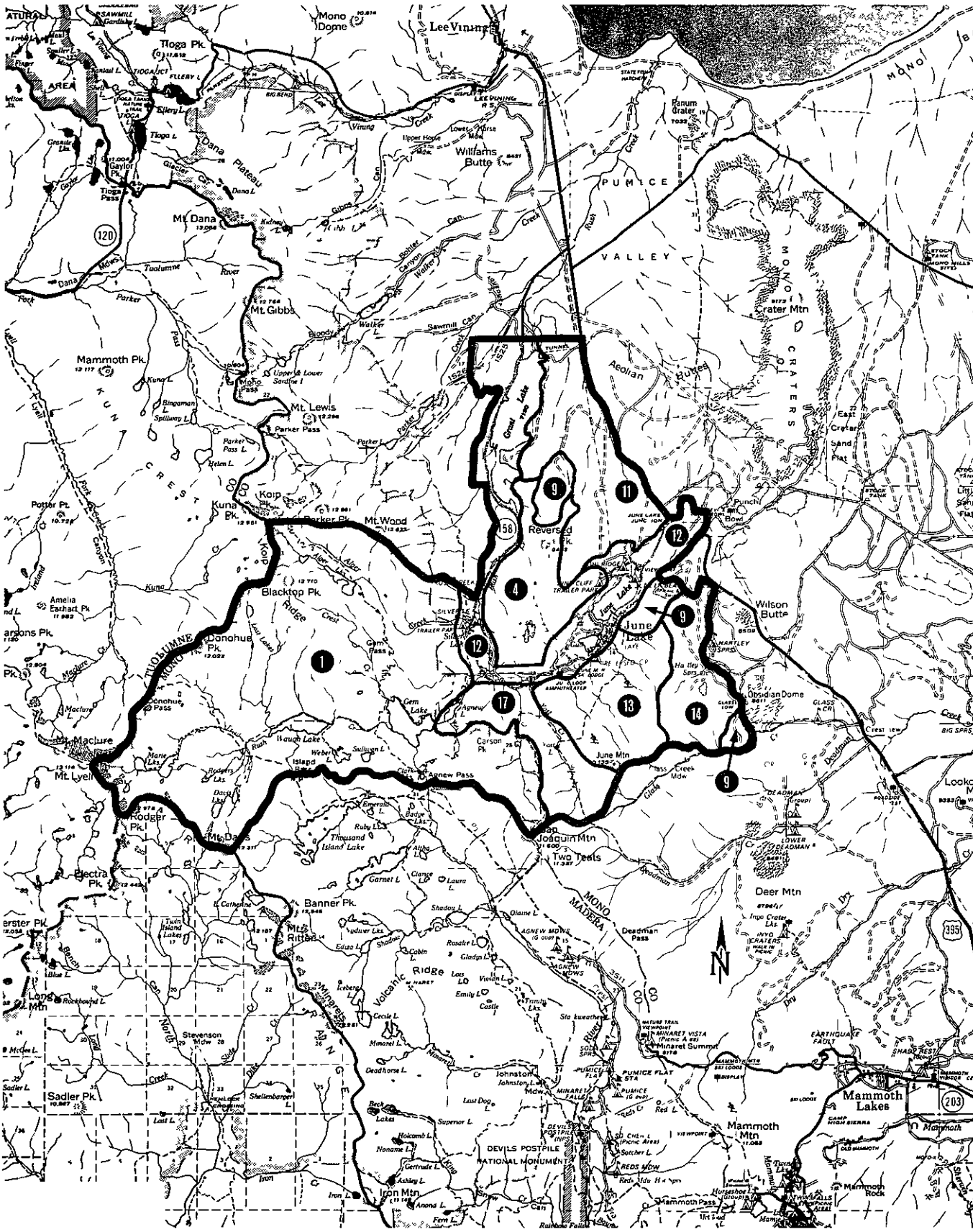


Prescription Allocation (Rx) for Management Area #4: June Lake Loop

Number	Name	Acres
Rx 1	Designated Wilderness	19,970
Rx 4	Mule Deer Habitat Emphasis	3,466
Rx 9	Uneven-aged Timber Management	780
Rx 11	Range Emphasis	3,984
Rx 12	Concentrated Recreation Area	4,134
Rx 13	Alpine Ski Area, Existing and Under Study	2,692
Rx 14	Potential Alpine Ski Area	1,654
Rx 15	Developed Recreation Site	271
Rx 17	Semi-Primitive Recreation	2,502
	Total	39,453

June Lake Loop

June Lake Loop



June Lake Loop (#4)

Description

The June Lake Loop Management Area includes a small portion of the Ansel Adams Wilderness and all lands regarded as the June Lake Loop. The area is bounded on the northeast by U.S. 395, the west by the Eastern Sierra Escarpment and the south generally by June Mountain. Prominent features in the "loop" are four lakes (June, Gull, Silver and Grant), June Mountain, and Reversed Peak. Prominent features in the Wilderness are Gem and Waugh Lakes, Rodger and Blacktop Peaks, and Mts. Lyell and Davis. Private lands within the area include the town of June Lake, and City of Los Angeles lands near Grant Lake.

Topography consists chiefly of a spectacular horseshoe-shaped glaciated canyon about a quarter-mile wide bounded by cliffs on steep high moraines. High gentle peaks lie above this canyon on June Mountain and Reversed Peak and east of U.S. 395. The western portion rises to the steep Eastern Sierra Escarpment. The entire area is drained by Reversed Creek and Rush Creek. Elevation ranges from 7,050 feet below Grant Lake to 13,114 feet at the top of Mt. Lyell.

Vegetation consists of heavy stands of lodgepole pine and Jeffrey pine on the high north-facing slopes of June Mountain and Reversed Peak, to grass/sage in much of the northeast one-half of the area. Scattered Jeffrey pine and occasional large patches of mountain mahogany dot areas around Reversed Peak. Vegetation along the creeks is typically riparian, containing willow, aspen, and grassy meadows. High elevation vegetation is typically sub-alpine.

Portions of this area are important as summer range migration routes and holding areas for the Casa Diablo deer herd. The Yost Lakes and Reversed Peak areas are considered important summer range for this deer herd. The Hartley Springs area is located within the migration corridor between winter and summer range.

One sheep allotment extends into the Management Area. The area also contributes a minor amount of timber from stands on the north side of Reversed Peak.

Major recreation use occurs at a rate of one million recreational visitor days per year, utilizing the "loop's" four lakes, six public campgrounds, three permittee campgrounds, five marinas, ski area, pack station, and considerable recreation-oriented facilities in the private sector. The "loop" is a year-round destination resort area. The area also contains a major trailhead into the Ansel Adams Wilderness. The June Lake Loop will also provide much of the overnight base, in both public and private facilities, for users visiting the recently established Mono Basin Scenic Area.

Grant Lake is a City of Los Angeles reservoir and as such includes a portion of the Los Angeles Aqueduct. Lake levels fluctuate, partially negating this lake's value for recreation use. There is also a Southern California Edison

power plant and penstocks from Agnew and Gem Lakes. As a result of these penstocks, Fishtail Falls flows infrequently.

Management Area Direction

Geology

- Emphasize the explanation of glacial and/or volcanic geology in any interpretive display around the June Lake Loop. Decide which is most appropriate based on view and dominant features identified from the interpretive location.

Lands

- Exchange National Forest System lands into the private sector for community expansion when:

  1. The most appropriate use of the National Forest System lands over the long term is in the private sector;

  2. Federal, state, county, local and Forest Service planning processes identify and support conveying ownership of the parcel from National Forest System status to the private sector; and

  3. The use intended for the federal land being exchanged meets the intent of the current approved Community General Plan.

- Present proposed developments on National Forest System lands to other governments for their comment when those governments have a vested interest in the proposal.

- Allow development on National Forest System land when it is clearly demonstrated that the infrastructure of a community can support the demands of the proposed development and benefits from development outweigh adverse impacts on the community.

Minerals

- Reflect high level recreation values in environmental analyses for geothermal development.

Recreation

- Permit development of June Mountain Ski Area to 7,000 SAOT before developing any adjoining potential ski areas.

- Prepare a recreation composite plan to inventory, coordinate, and program the full summer and winter recreation development potential in the June Lake Loop. This does not include the expansion or development of June Mountain and is the area in Prescription #12. Construct new sites as funds become available. Coordinate with the community of June Lake to determine the needs of the community when completing the recreation composite plan.

- Identify and program dispersed trail facilities in the areas in Prescriptions #4, #12, and #17. Include hiking, equestrian, and bicycle opportunities.

- Manage the areas in Prescriptions #4 and #17 for their Semi-Primitive Non-Motorized recreation activities and opportunities.

- Pursue construction of a bike trail around June Lake Loop.

- Consider alpine ski development for the Hartley Springs area. This would be part of any cumulative effects study generated in the Mammoth/June area.

- Coordinate with Caltrans and Mono County to plan and develop parking, and support facilities for nordic, snowmobile, or snowplay opportunities along U.S. 395, State Routes 158 and 203, the Lake Mary Road and the Scenic Loop Road.

Visual Resources

- Develop corridor viewshed analysis and plans that include U.S. 395 and State Route 158.

- Minimize the visual impacts of transmission lines, power plants, and private land developments.

- Pursue opportunities to relocate the 115KV line out of the Oh! Ridge Campground developed site.

- Encourage and work with the community of June Lake and Mono County to develop scenic resource element guidelines and mitigation measures as a part of any local planning effort.

Water

- Allow development in the Mammoth/June area where adequate water is available after natural resource needs are met. Allow for the exploration and development of new water sources on National Forest System lands for community purposes only when such opportunities have been exhausted on private lands.

- Manage the Twin Springs watershed above the June Lake Public Utility District water supply intake with all the precautions needed to ensure that water is provided at a quality level consistent and compatible with State Basin Plan objectives for domestic supply.

- Adhere to the June Mountain Ski Area Erosion Prevention Plan.

- Conclude negotiations with Southern California Edison and other licensed public utility entities to manage reservoir levels in Agnew, Gem, and Waugh Lakes to enhance recreation, visual, and other natural resource values.

- Initiate negotiations with the City of Los Angeles Department of Water and Power to manage Grant Lake reservoir for the enhancement of recreation, visual, and other natural resource values.

Wildlife

- Emphasize the importance of the Casa Diablo deer herd in management decisions.

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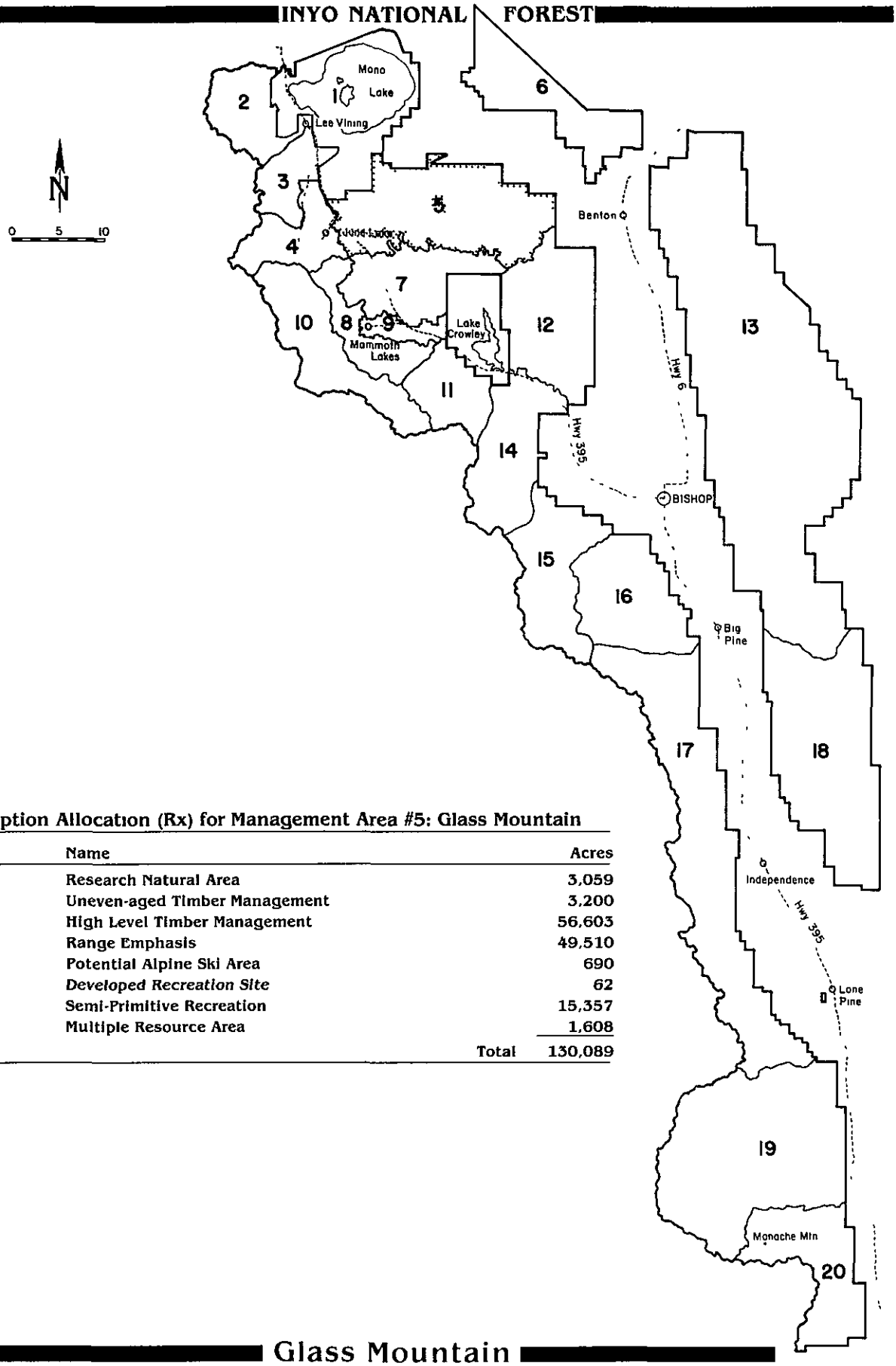
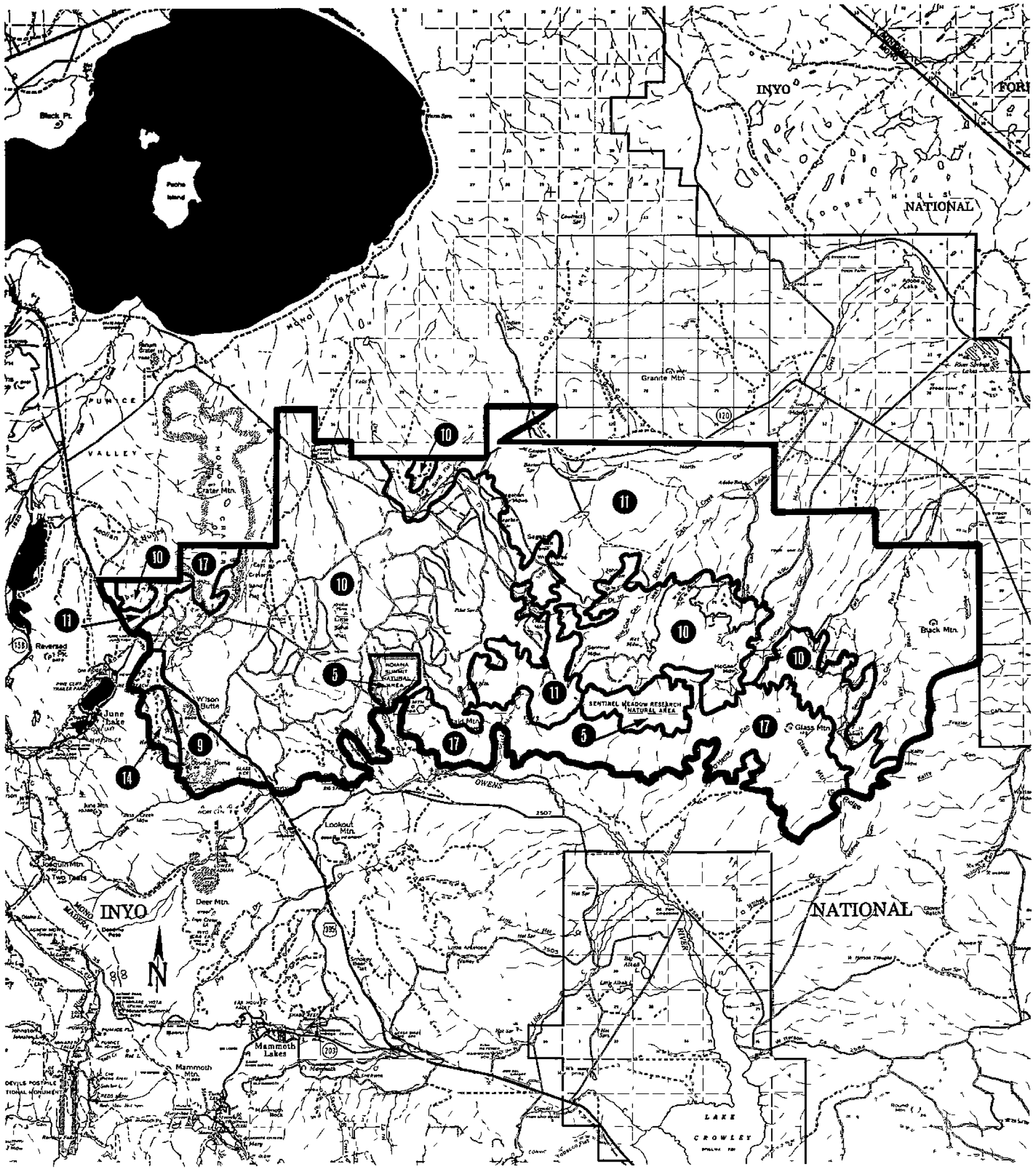


Prescription Allocation (Rx) for Management Area #5: Glass Mountain

Number	Name	Acres
Rx 5	Research Natural Area	3,059
Rx 9	Uneven-aged Timber Management	3,200
Rx 10	High Level Timber Management	56,603
Rx 11	Range Emphasis	49,510
Rx 14	Potential Alpine Ski Area	690
Rx 15	*Developed Recreation Site*	62
Rx 17	Semi-Primitive Recreation	15,357
Rx 18	Multiple Resource Area	1,608
	Total	130,089

Glass Mountain

Glass Mountain



10 Prescription Numbers — Prescription Area Boundary — Management Area Boundary

NOT TO SCALE

Glass Mountain (#5)

Description

The Glass Mountain Management Area is located for the most part east of U.S. 395 and Mono Craters and extends for about twenty-five miles east to the Forest boundary east of Black Mountain. The south boundary includes the distinct ridge forming the north lip of the Long Valley Caldera. The north boundary is the Forest boundary, running just below timber line and along State Route 120. Prominent features include Obsidian Dome, Bald Mountain, Sagehen Peak, Glass, and Black Mountains. Private land inholdings consist of dispersed undeveloped 40-acre parcels located around meadows.

Topography is mostly gentle, flat to rolling, with slopes seldom exceeding 20 percent that drain toward Mono Lake and Adobe Valley. Exceptions include lava flows and portions of the Mono Craters at the west end, sharp canyons at the east end and the steeper slopes leading up to the crest of Glass Mountain. Elevation ranges from 6,600 feet at Taylor Canyon to 11,123 feet at Glass Mountain.

Vegetation is commercial timber on approximately 55 percent of the area and includes lodgepole pine and Jeffrey pine. The Jeffrey pine here and in Management Area # 7 make up the largest contiguous stand of pure Jeffrey pine in the world. These timber stands generally have a grass/sage understory. Most of the remainder is vegetated with pinyon/juniper and sage/grass communities. Also present are dispersed meadows and sand flats. The Craters, lava flows, and the south-facing slopes of Bald and Glass Mountains are essentially unvegetated.

Prehistoric use is significant, with Glass Mountain being an important obsidian source. Glass Mountain obsidian has been found in prehistoric sites in the Midwest. Mono Mills, a lumber mill in the late 1800s, and appurtenant railroad grades and logging related structures occupy a portion of the area. Sawmill Meadow contained a small sawmill near the turn of the century. Evidence of it is still visible today.

A major mining operation atop Mono Craters extracts block pumice for processing in a local mill at Lee Vining. The operation employs about thirty-five people, counting all phases.

All or part of nine grazing allotments are located in the area. Over 50,000 acres is considered suitable range. Most allotments are utilized by sheep.

Recreation use is dispersed camping, hunting and wood gathering. In the winter, snowmobiling and cross-country skiing are popular activities.

Timber is harvested and fuelwood is cut on the area. Several timber stands are suitable for goshawk habitat.

Some important deer winter range exists in the eastern portion of the management area. Most of these deer migrate around the south end of the Glass Mountains. One migration route, apparently used in low-snow years, transects this management area around the north end of the Glass Mountains. Some areas in the Glass Mountains are also used as summer range. The Hartley

Springs area is located within the migration corridor between winter and summer range of the Casa Diablo deer herd.

Pronghorn use the northeast portions of the Management Area. These animals are the result of transplant endeavors in 1982, 1984 and 1985.

A small population of sage grouse use the northern portion of the Management Area. Two strutting grounds are located here.

The Management Area contains two Research Natural Areas; Indiana Summit with a Jeffrey pine community, and Sentinel Meadow with lodgepole and limber pine communities.

Management Area Direction

Cultural Resources

- Pursue development of a Mono Mills historical interpretive site. Incorporate the Mono Mills Railroad site into the interpretive plan for the Mono Basin Scenic Area.

Geology

- Encourage continued geologic exploration and research relating to post-caldera formation, seismic and volcanic activity and the prediction of future seismic activity and volcanic eruptions.

Range

- Consider placement and timing of water availability for deer and other wildlife when developing water sources for livestock.

- Utilize plant species that also benefit wildlife when revegetating rangeland.

- Maintain or develop a vegetative mosaic when regenerating range forage.

Recreation

- Program and develop support facilities for both nordic and snowmobile access along U.S. 395 when opportunities and funding become available.

- Manage Hartley Springs Campground in its current status until a comprehensive environmental analysis is completed on the Hartley Springs area.

- Maintain dispersed facilities throughout the area. Do not turn them into developed sites. Examples are Crooked Meadow, Sawmill Meadow, Sentinel Meadow, and Pilot Spring.

- Inventory, design and program the development of an interpretive auto tour oriented towards the geologic/volcanic chain of topographic features including the Mono Craters, Punchbowl, Wilson Butte, and Obsidian Dome in Management Area #5 and selected features in Management Area #7.

Coordinate interpretive planning for auto tour and interpretive facilities with the interpretive plan for the Mono Basin Scenic Area.

- Coordinate with Caltrans, State Parks and Recreation, and Mono County to plan and develop parking and support facilities for nordic, snowmobile and snowplay opportunities along U.S. 395, State Routes 158 and 203, the Lake Mary Road and the Scenic Loop Road.

Timber

- Maintain plantation stocking at the greatest density acceptable to timber management where cover needs exist for deer (e.g., around meadows and along deer migration routes).

- Utilize existing roads rather than new road construction to minimize impacts on wildlife where practical.

Visual Resources

- Develop corridor viewshed analysis and plans that include U.S. 395.

- Plan for additional powerline construction with the objective of eventually moving the existing 115KV line along U.S. 395.

Wildlife

- Develop water sources for deer and other wildlife as appropriate.

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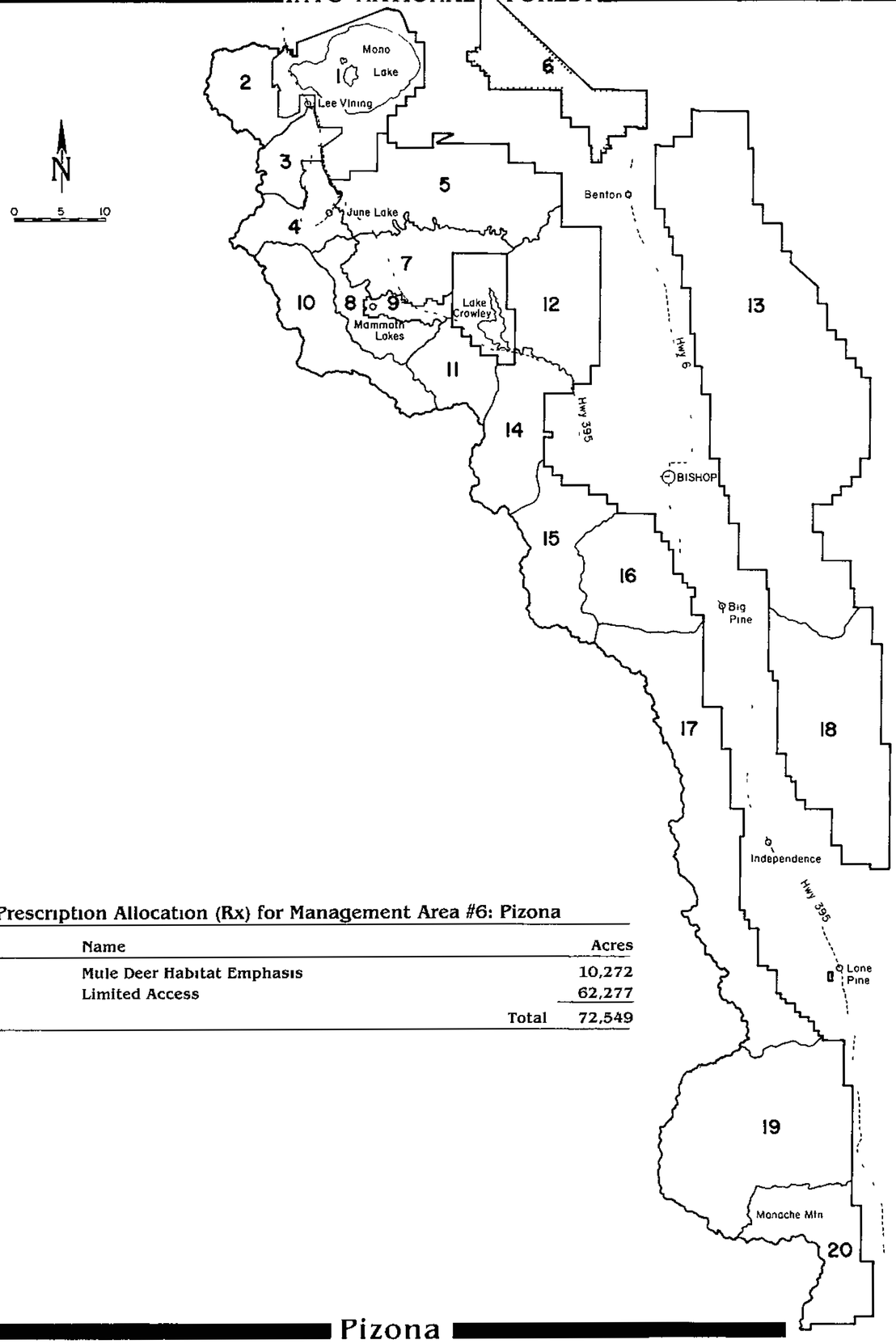
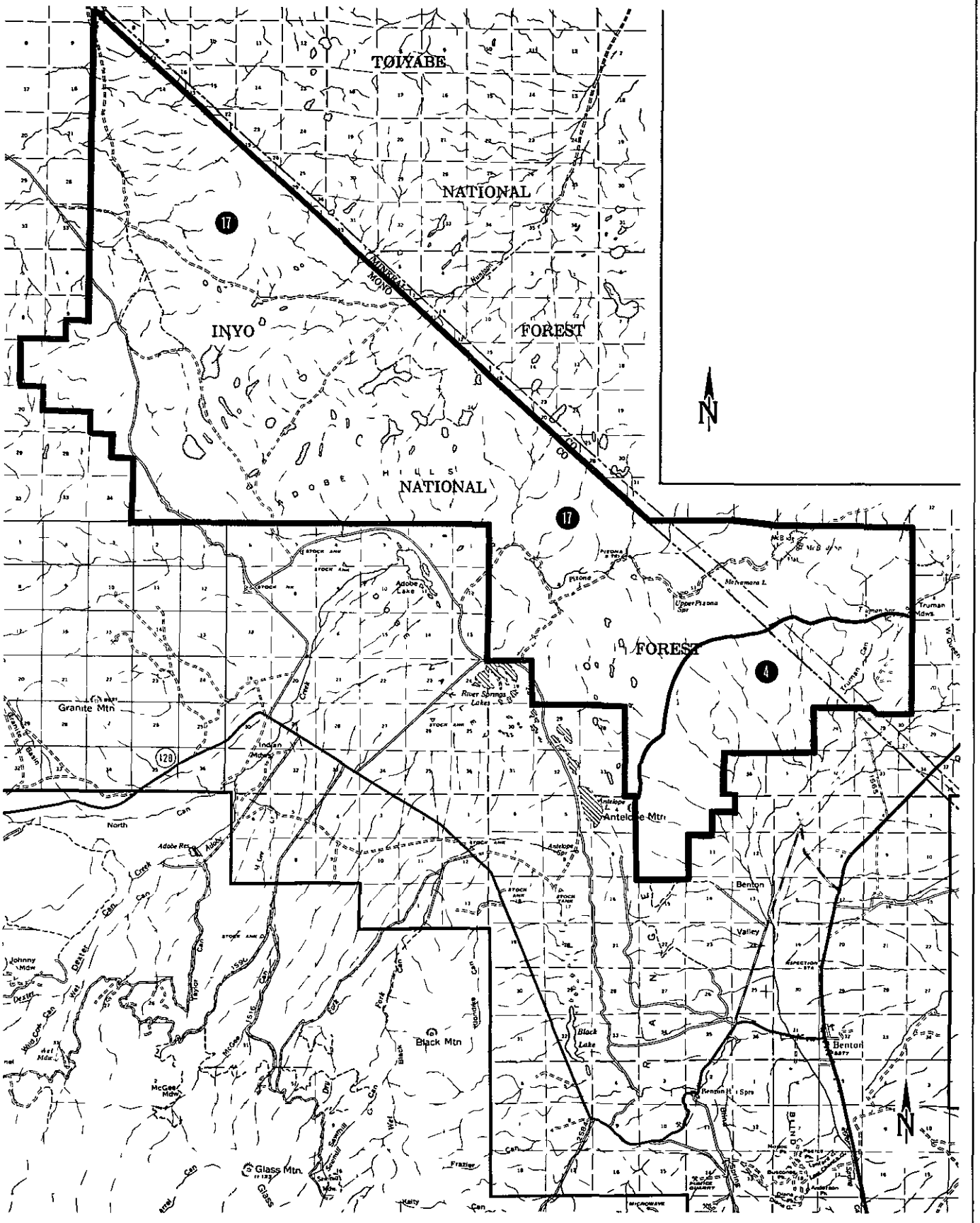


Prescription Allocation (Rx) for Management Area #6: Pizona

Number	Name	Acres
Rx 4	Mule Deer Habitat Emphasis	10,272
Rx 17	Limited Access	62,277
	Total	72,549

Pizona

Pizona



10 Prescription Numbers — Prescription Area Boundary — Management Area Boundary

NOT TO SCALE

Pizona (#6)

Description

The Pizona Management Area, also known locally as the "Pizona" country, is an isolated portion of National Forest that begins six miles east of Mono Lake and extends beyond the Nevada border. It lies north of Montgomery Pass and Adobe Valley, and is bordered on the northeast by the Toiyabe National Forest. Prominent features are occasional springs and low rolling hills. Private land consists of dispersed undeveloped 40-acre parcels in conjunction with grassy flats or springs.

Topography is generally flat to moderately steep scab rock, rim rock, and rocky canyons. Elevations range from 6,000 to 8,000 feet. Canyons, although not deep, run in all directions, and orienting oneself can be difficult. Drainages dead end in sinks where no readily available water exists. The only available water sources are occasional minor springs or ponds.

Vegetation is almost universally pinyon/juniper with a grass/sage understory and an occasional dry grassy flat.

Prehistoric cultural sites are numerous and often well-preserved because of limited access and dry climate. There are few historic sites and very little evidence of past mining activity or operating claims.

The most distinguishing feature of this area is the existence of a population of wild horses. The 75-150 wild horses are part of the Montgomery Pass wild horse herd that ranges within the southeast portion of this management area. The herd utilizes adjacent Toiyabe National Forest, Bureau of Land Management and private lands. Two grazing allotments exist but one has not been used in recent years, partly because of competition for feed with the wild horses. A Coordinated Resource Planning process that involves all interested individuals and groups is being used to develop management strategies for the wild horse territory.

Recreation use is extremely limited, consisting of commercial guide-outfitter operations or an occasional hunter or off-highway vehicle.

A major interstate utility right-of-way, the Pacific DC Intertie transmission line, bisects the southwestern part of the Management Area.

The southern portion of this Management Area is used as winter range by the Casa Diablo deer herd.

Management Area Direction

Lands

- Recognize the route paralleling the Pacific DC Intertie transmission line as having the highest potential for a north-south utility corridor on the Forest.

Range

- Manage the "Pizona Country" to provide for the use and requirements of wild horses. Allow the Coordinated Resource Planning process that is currently being conducted to establish wild horse numbers and requirements.

- Seek opportunities to recognize and coordinate wild horse use on lands adjacent to the herd's territory.

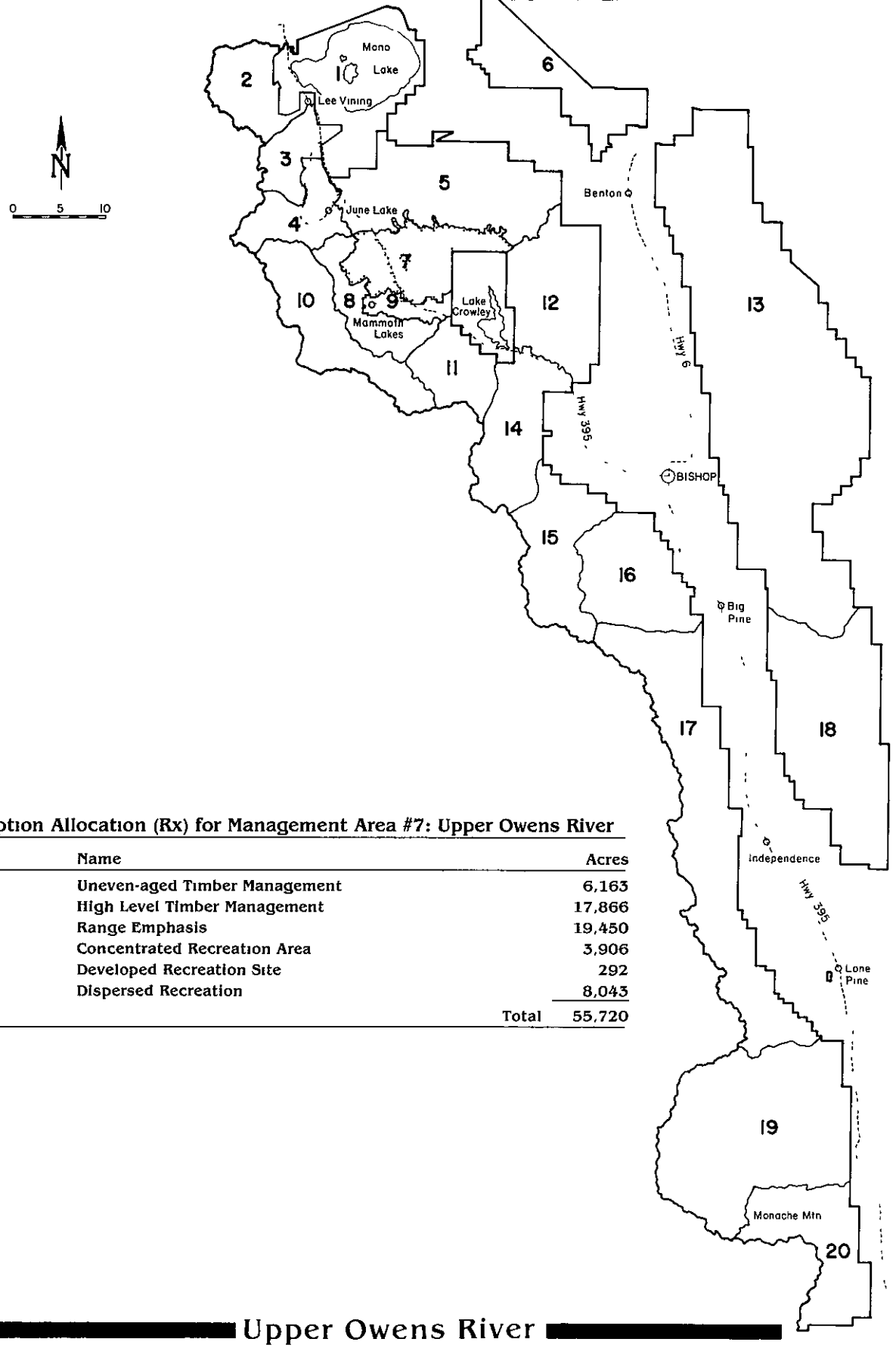
- Pursue the acquisition of private lands to maintain wild horse and wildlife water and forage needs.

- Allow natural predators to regulate wild horse numbers.

Recreation

- Maintain the dispersed nature of the recreation occurring in this management area. Do not allow developed facilities for recreation. Permit commercial outfitting and guiding to the extent compatible with management of the wild horses.

INYO NATIONAL FOREST



Prescription Allocation (Rx) for Management Area #7: Upper Owens River

Number	Name	Acres
Rx 9	Uneven-aged Timber Management	6,163
Rx 10	High Level Timber Management	17,866
Rx 11	Range Emphasis	19,450
Rx 12	Concentrated Recreation Area	3,906
Rx 15	Developed Recreation Site	292
Rx 16	Dispersed Recreation	8,043
	Total	55,720

Upper Owens River

Upper Owens River

Prescription Numbers — Prescription Area Boundary — Management Area Boundary — NOT TO SCALE

Upper Owens River (#7)

Description

The Upper Owens River Management Area is located immediately above and to the northwest of Lake Crowley. Included are the subdrainages of Deadman Creek, the Upper Owens River, Little Hot Creek, Dry Creek, and portions of Hot Creek. Prominent features include Lookout Mountain, Deer Mountain, Smokey Bear Flat, Little Antelope Valley and the Deadman/Inyo Craters volcanic formations.

With the exception of the land immediately adjacent to the Owens River, the remainder of the area is National Forest. A small fringe of the incorporated Town of Mammoth Lakes is located in the southern portion of the area. U.S. 395 traverses in a northwest/southeast direction and is the major access to the area.

Topography is characterized by numerous small drainages with moderate side slopes and flat ridgetops. Elevation ranges from 6,960 feet in the Hot Creek drainage to 8,796 feet atop Deer Mountain. The eastern portion contains moderately rolling rangeland with sage and bitterbrush side slopes and grassy valley bottoms. Higher elevations are characterized by the Jeffrey pine forest.

As the primary watershed for Lake Crowley, the area provides an important source for domestic water for the City of Los Angeles. The Upper Owens River is an important trout fishery.

The Management Area is within the Long Valley Known Geothermal Resource Area (KGRA). Seven lessees currently hold geothermal leases on approximately 38,190 acres of land within the Management Area. Exploration, including wells drilled to a depth of more than 6,000 feet, has been conducted by private industry and the scientific community. There is one operating 10 megawatt powerplant on private land within the Management Area. Commercial developers have applied to Mono County for the rights to build two additional power plants on private land. Commercial developers have applied to the Bureau of Land Management to build a single power plant on National Forest System land.

All or part of seven grazing allotments are located in the management area. Recreational use is primarily of a dispersed nature. The Inyo Craters, a popular day-use site, focuses on the interpretation of geologic history. Deadman, Lower Deadman, Glass Creek, and Big Springs Campgrounds provide overnight camping facilities.

Timber stands include nearly pure red fir; mixed stands of red fir, white fir, lodgepole and Jeffrey pine; pure stands of lodgepole; and a pure stand of Jeffrey pine. Because of logging activity, numerous single-lane and two-lane dirt and gravel roads bisect the area. Logging debris and dead and down wood form an important source of firewood for the adjacent Town of Mammoth Lakes and numerous other communities as far south as Lone Pine, California. There is commercial fuelwood harvesting on the area.

Because of its proximity to U.S. 395, a designated scenic highway, proximity to the Town of Mammoth Lakes, and visibility from high elevation points such as Mammoth Mountain and Minaret Summit, the area requires special attention to meet established Visual Quality Objectives.

The area serves as important habitat for mule deer during the spring and fall migrations. A major deer migration corridor for the Casa Diablo deer herd extends from Management Area #12 (Benton-Casa Diablo) around the south end of the Glass Mountains, and follows the western slope of the Glass Mountains to a staging area in the Upper Owens River.

A large population of sage grouse (an estimated 1,000-1,200 birds) uses the Mammoth Caldera area, including the eastern half of this Management Area. Winter ranges are concentrated mostly on Bureau of Land Management and City of Los Angeles lands in the vicinity of Crowley Lake. Summer habitats for this species include the entire basin. There are three known strutting grounds in this Management Area.

Management Area Direction

Fish

- Manage O'Harrel Canyon Creek drainage to provide for recovery of Lahontan cutthroat trout.

Geology

- Continue cooperation and coordination of geophysical exploration and research with the scientific community.

- Encourage continued geologic exploration and research relating to post-caldera formation, seismic and volcanic activity and the prediction of future seismic activity and volcanic eruptions.

Range

- Consider placement and timing of water availability for deer and other wildlife when developing water sources for livestock.

- Utilize plant species that also benefit wildlife when revegetating rangeland.

- Maintain or develop a vegetative mosaic when regenerating range forage.

- Encourage water spreading to enhance forage for livestock and sage grouse where feasible.

- Develop watering locations away from riparian areas.

Recreation

- Program and develop support facilities such as parking areas and trailheads for both nordic and snowmobile access along U.S. 395 and the

Scenic Loop Road when opportunities and funding become available. OSV access to the Inyo Craters will be permitted to continue.

- Develop a recreation composite plan to inventory, coordinate, and program the full summer and winter recreation development potential west of U.S. 395. Include the area in Prescriptions #10, #12 and #16. Construct programmed facilities as funds become available.

- Prohibit dispersed camping within two miles of the private land boundary of the community of Mammoth.

- Pursue reconstruction of Big Springs Campground at a location more suitable for the purpose.

Riparian

- Manage riparian areas to maintain high habitat quality for fish, especially in threatened and endangered species waters, wild trout waters, and the meadow reaches of the streams.

Timber

- Maintain plantation stocking at the greatest density acceptable to timber management where there are cover needs for deer (e.g., around meadows and along deer migration routes).

- Utilize existing roads for timber harvest where practical to minimize impacts on wildlife.

Visual Resources

- Develop corridor viewshed analysis and plans to include U.S. 395.

- Establish a crossing point for a major powerline route serving the potential geothermal area to the west of U.S. 395 at the least visually-sensitive point.

- Plan for additional powerline construction with the objective of eventually moving the existing 115KV line along U.S. 395.

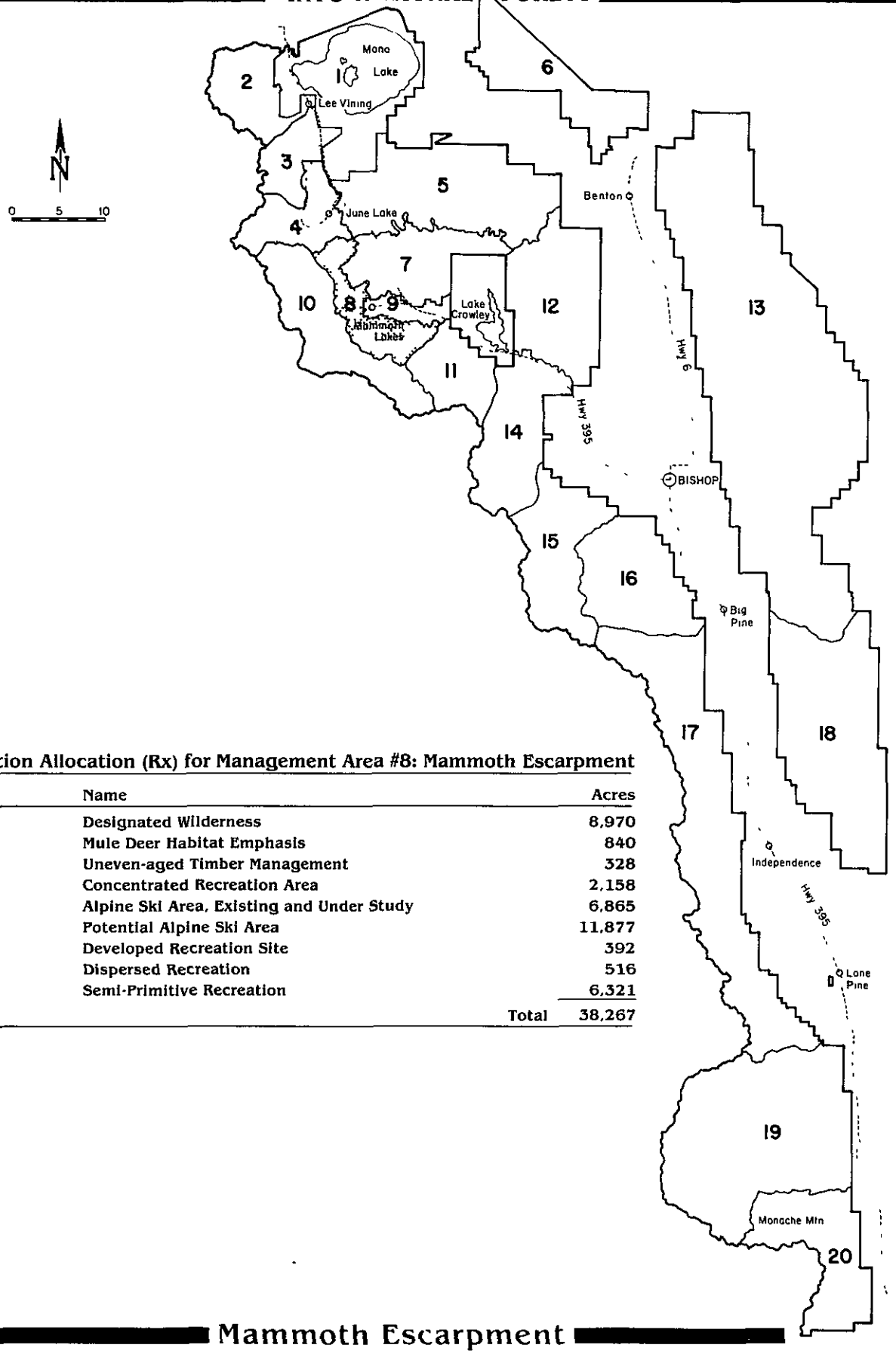
Wildlife

- Maintain the productivity of meadows for sage grouse.

- Allow management activities that do not significantly interfere with key sage grouse habitat.

- Maintain or enhance the integrity of key winter ranges, holding areas, migration routes, and fawning areas for mule deer.

INYO NATIONAL FOREST

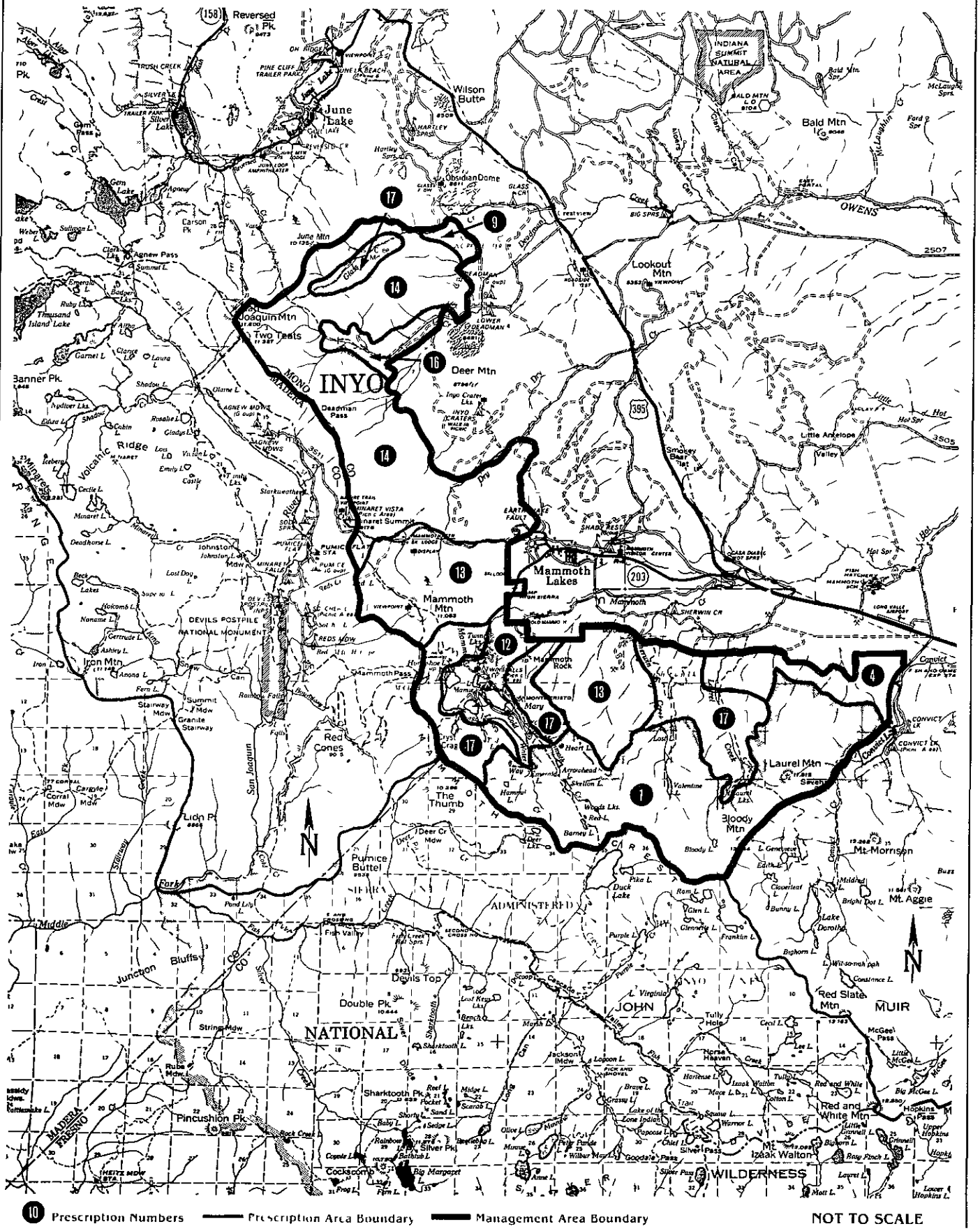


Prescription Allocation (Rx) for Management Area #8: Mammoth Escarpment

Number	Name	Acres
Rx 1	Designated Wilderness	8,970
Rx 4	Mule Deer Habitat Emphasis	840
Rx 9	Uneven-aged Timber Management	328
Rx 12	Concentrated Recreation Area	2,158
Rx 13	Alpine Ski Area, Existing and Under Study	6,865
Rx 14	Potential Alpine Ski Area	11,877
Rx 15	Developed Recreation Site	392
Rx 16	Dispersed Recreation	516
Rx 17	Semi-Primitive Recreation	6,321
	Total	38,267

Mammoth Escarpment

Mammoth Escarpment



10 Prescription Numbers — Prescription Area Boundary — Management Area Boundary

NOT TO SCALE

Mammoth Escarpment (#8)

Description

The Mammoth Escarpment Management Area stretches from San Joaquin Mountain on the northwest boundary southerly, bordering the Ansel Adams Wilderness, to Mammoth Mountain and along the Mammoth Crest to Bloody and Laurel Mountains on the southeast boundary. A small portion of the John Muir Wilderness is included at the south end of the Management Area. Prominent features are San Joaquin Mountain, Minaret Summit, Mammoth Mountain, Mammoth Lakes Basin, Mammoth Rock, the Mammoth Crest, and Bloody and Laurel Mountains. Private inholdings include a 1.5-acre tract adjacent to Lake Mary and a 3.75-acre parcel adjacent to the Valentine Reserve and Lake Mary Road.

Topography rises from gentle slopes along the lower reach of Sherwin Creek to very steep, often precipitous terrain along the Mammoth Crest. Elevations range from 7,200 feet at the eastern tip of the area to 12,544 feet at the crest of Bloody Mountain. The lands form a spectacular and important scenic backdrop from U.S. 395, a designated scenic highway.

Vegetation is characterized by sage/bitterbrush and mountain mahogany in the southern portion of the escarpment, and mixed fir and lodgepole pine stands in the north. Mountain mahogany, lodgepole, whitebark, and limber pines are found at higher elevations. Riparian areas support stands of aspen, water birch, and willow.

The Management Area has a few active mining claims.

Small portions of three grazing allotments extend into the Management Area.

Developed recreation is the primary use on the area. This Management Area has more recreation visitors than any other in the Forest Service. Mammoth Mountain Ski Area, the largest facility of its type in the United States, is located here. There is potential for additional alpine ski opportunities in the area.

The Mammoth Lakes Basin, a series of alpine lakes nestled in a bowl-shaped area immediately southwest of the Town of Mammoth Lakes is important for both summer and winter recreation purposes. It is also important as a watershed for domestic water use in the Town of Mammoth Lakes. The area includes numerous summer homes, lodges and resorts.

In addition to alpine skiing, many opportunities for nordic skiing are offered in the Mammoth Lakes Basin and in Mammoth Meadow. Although tracks are set in these areas, they are not formally designated as nordic ski areas. Because this area interfaces with the Town of Mammoth Lakes, its value for day-use activities and open space adjacent to the community must also be recognized.

Approximately 4,000 deer are dependent on this area for migration routes and summer range. The area is important to the Sherwin mule deer herd as a migration route in the fall and winter, with Solitude Canyon, Mammoth Pass and Deadman Pass serving as major migration corridors. The area east of Sherwin Creek is an important staging site in the spring as the deer herd

awaits the melting of snow. Glass Creek contributes to the Casa Diablo deer herd by providing fawning habitat.

Special uses in the area include electronic permits for sites on Mammoth and Lincoln Mountains, organization camps along Sherwin Creek, and permits to the Mammoth County Water District for domestic water and sewer activities in the Mammoth Lakes Basin. As a part of the permit agreement, dams in the Mammoth Lakes Basin are maintained by the Mammoth County Water District. Water use from the Lakes Basin is controlled by a Master Operating Agreement between the Forest Service and the Mammoth County Water District.

Management Area Direction

Cultural Resources

- Emphasize the interpretation of effects of recent volcanism on aboriginal life.

Facilities

- Conduct a cumulative effects study of the Mammoth/June area when a development proposal in this area requires an Environmental Impact Statement. The Mammoth/June area is defined by U.S. 395 on the east; Highway 203 on the south; the John Muir and Ansel Adams Wildernesses on the west; and the ridgeline of the June Lake complex on the north.

Fish

- Manage Glass Creek drainage above the campground to provide for recovery of the Lahontan cutthroat trout as approved by the Lahontan Cutthroat Trout Recovery Plan.

Geology

- Emphasize glacial and bedrock geology at interpretive sites within the Lakes Basin.

Lands

- Consider no land exchanges involving Sherwin Meadow until final decisions are made on the ski area proposed for Sherwin Bowl.

- Continue electronic site use on Mammoth and Lincoln Mountains consistent with existing development plans.

Minerals

- Limit access for exploration activities to methods not requiring road construction.

Recreation

- Develop recreation composite plans to inventory, coordinate, and program the full summer and winter recreation development potential in the area

in Prescription #12 (Lakes Basin). Construct programmed facilities as funds become available.

- Identify and program dispersed trail facilities in the areas in Prescriptions #12, #14 and #17. Include hiking and equestrian trail opportunities in all areas and bicycle trails in the area in Prescription #12. Include opportunities for mountain bike trails within the Management Area. Interface trail systems with the community.

- Maintain levels of reservoirs in Mammoth Lakes Basin to desirable levels for recreation use and scenic enhancement during the entire summer use season.

- Emphasize day-use activities within the Mammoth Lakes Basin by developing needed day-use facilities to complement overnight campgrounds.

- Limit expansion of resort capacity in the Mammoth Lakes Basin to 10 percent above 1985 levels.

- Encourage public transportation in the Mammoth Lakes Basin for summer and winter day-use.

- Emphasize development of front country trails, particularly those linking Mammoth to the Forest.

- Limit nordic capacity (Skiers At One Time) in Mammoth Lakes Basin to 1,200, unless a special study indicates an increased capacity is socially and environmentally acceptable.

- Maintain current use patterns and open space on National Forest System lands adjacent to Valentine Reserve.

Visual Resources

- Develop a corridor viewshed analysis and plan that includes State Route 203 and the Lake Mary Road.

- Develop special mitigation measures along State Route 203 from the Town of Mammoth Lakes to Base Lodge 1 to soften ski area impacts for the summer-oriented visitor. This locality has been developed as an elongated base area for Mammoth Mountain Ski Area and the designated VQOs may not have been met.

- Construct all ski area development in areas in Prescriptions #13 and #14 to meet the Retention VQO as seen from trails and use areas in Management Area #10 (wilderness).

- Encourage and work with the Town of Mammoth Lakes and Mono County to develop a scenic resource element, an architectural element, guidelines, and mitigation measures as a part of any local planning effort.

Water

- Allow development on National Forest System lands in the Mammoth/June area where adequate water is available after natural resource needs are met. Allow for the exploration and development of new water sources on National Forest System lands for community purposes only when such opportunities have been exhausted on private lands.

- Work with responsible agencies to assure compliance with provisions of the Water Management Plan for Mammoth Lakes Basin.

- Manage the Glass Creek watershed above the Crestview water supply intake, and Mammoth Lakes Basin above the Mammoth Lakes Community water supply intake with all the precautions needed to ensure that water is provided at a quality level consistent and compatible with State Basin Plan objectives for domestic supply.

- Recognize the value of maintaining undiminished streamflows in management decisions.

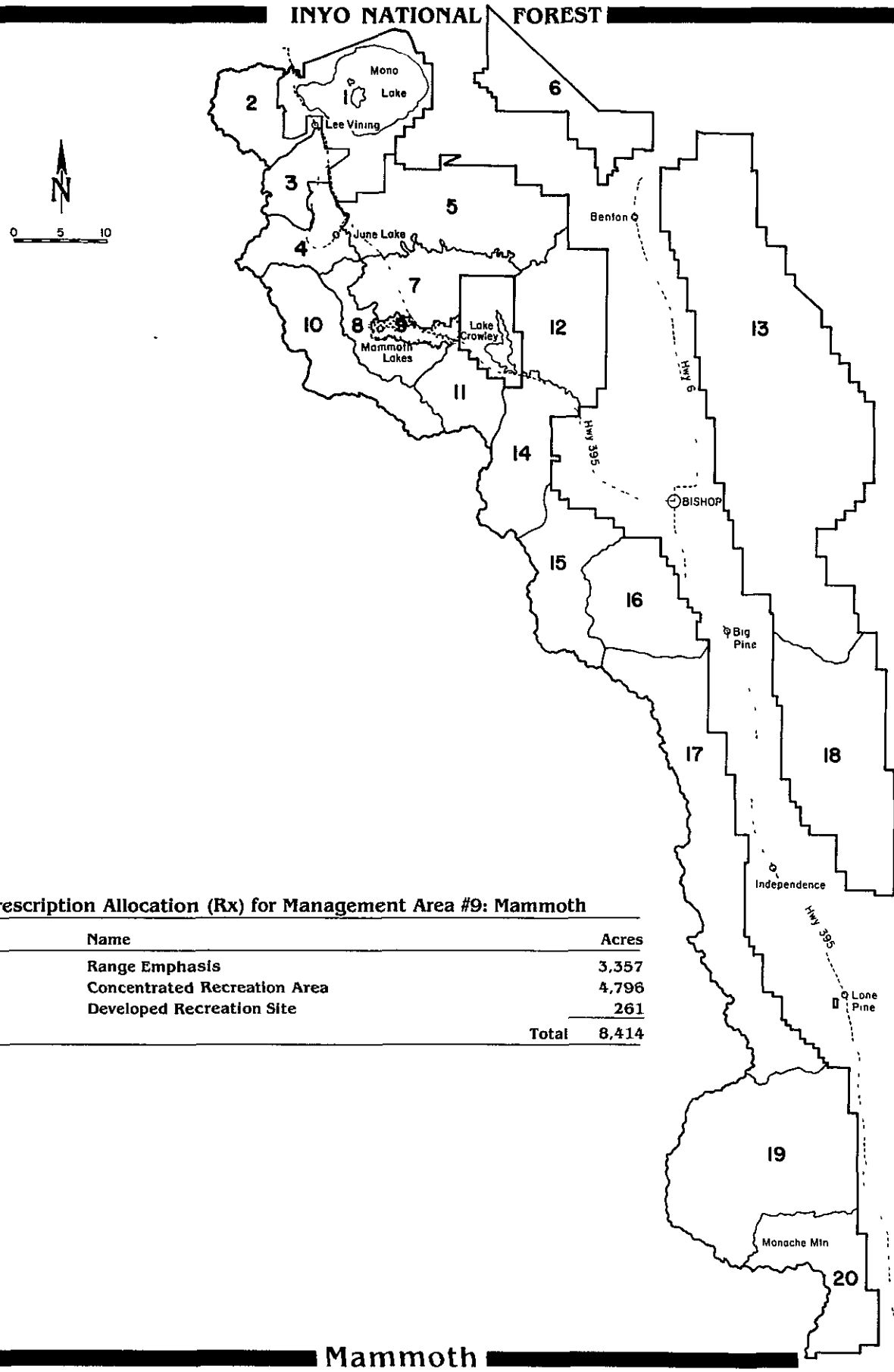
- Adhere to the Mammoth Mountain Ski Area Erosion Prevention Plan.

- Manage water resources within Mammoth Lakes Basin to provide adequate protection of natural resources, and to serve recreational demand along with water supply needs. Satisfy municipal water supply needs after natural resources needs are met.

Wildlife

- Maintain the integrity of key winter ranges, holding areas, migration routes, and fawning areas for mule deer.

INYO NATIONAL FOREST

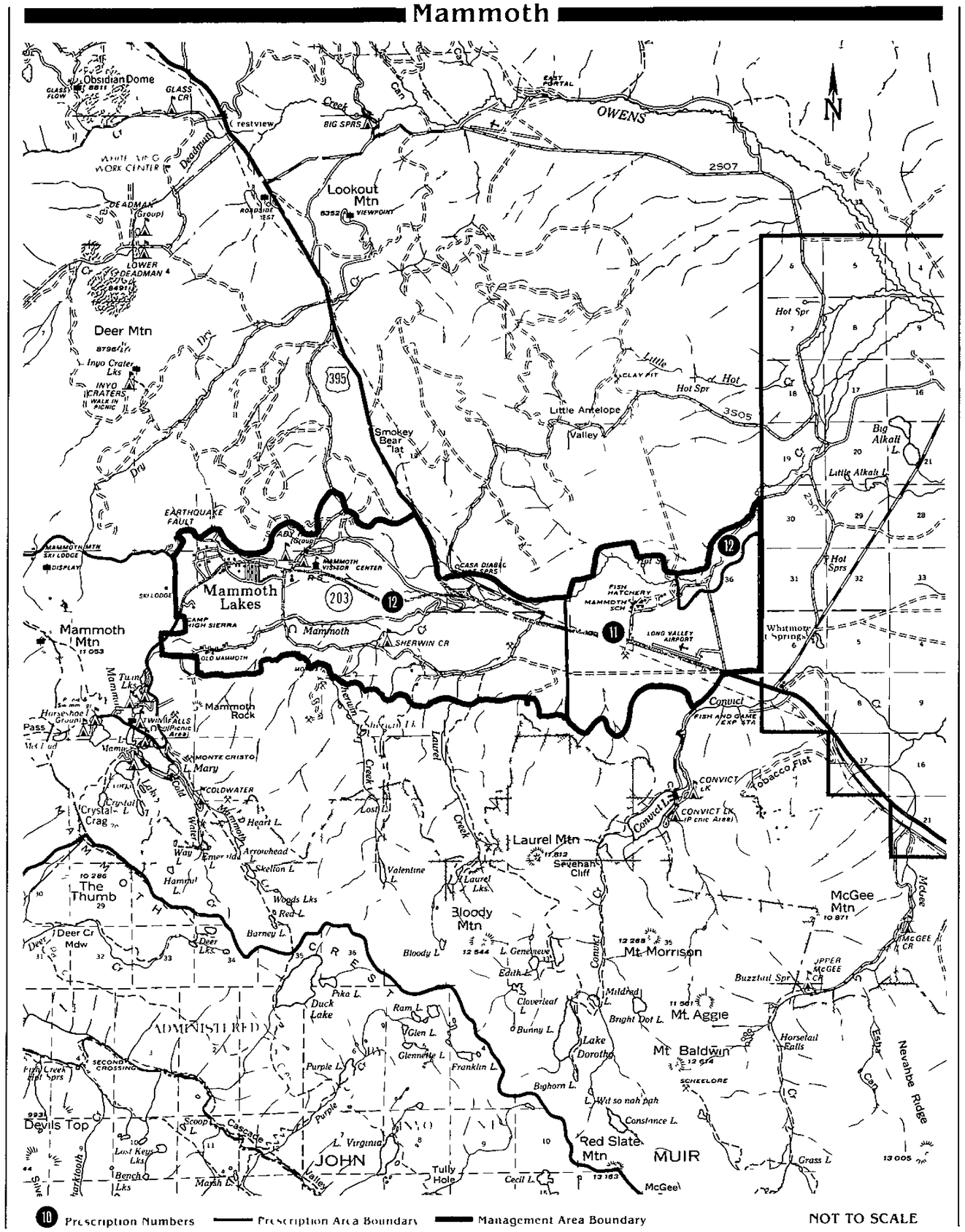


Prescription Allocation (Rx) for Management Area #9: Mammoth

Number	Name	Acres
Rx 11	Range Emphasis	3,357
Rx 12	Concentrated Recreation Area	4,796
Rx 15	Developed Recreation Site	261
	Total	8,414

Mammoth

Mammoth


Obsidian Dome
GLASS FLOW
GLASS CR
Crestview
BIG SPRS
EAST PORTAL
OWENS
N
2S07
WHITE MTN CC WORK CENTER
Deadman
DEADMAN (Group)
LOWER DEADMAN
Lookout Mtn
VIEWPOINT
Deer Mtn
Inyo Crater Lks
INYO CRATERS
395
Dry
Smokey Bear Flat
Little Antelope Valley
CLAY PIT
Little Hot Spr
Hot Spr
3S05
Big Alkali L.
Little Alkali L.
EARTHQUAKE FAULT
MAMMOTH MTN SKI LODGE
DISPLAY
SKI LODGE
Mammoth Lakes
MAMMOTH VISITOR CENTER
CASA DIABLO HOT SPRS
203
12
11
FISH HATCHERY
MAMMOTH SCH
LONG VALLEY AIRPORT
Hot Sprs
Whitmore Springs
Mammoth Mtn
11 053
CAMP HIGH SIERRA
OLD MAMMOTH
Mammoth
SHERWIN CR
Tum Lks
Mammoth Rock
Horseshoe Grounds
Pass
Twin Falls
MONTE CRISTO
L. Mary
COLDWATER
Crystal Crag
Crystal L.
Heart L.
Arrowhead L.
Skelton L.
Emerald L.
Hamhut L.
Woods Lks
Red L.
Barney L.
The Thumb
Deer Cr Mdw
Deer Lks
Laurel Creek
Lost L.
Valentine L.
Laurel Mtn
Sevehah Cliff
Laurel Lks
Bloody Mtn
Bloody L.
L. Genevieve
Edith L.
Cloverleaf L.
Bunny L.
Mt Morrison
Convict
FISH AND GAME EXP STA
CONVICT LK
CONVICT LK (Picnic Area)
Tobacco Flat
McGee Mtn
10 871
McGee CR
UPPER McGEE CR
Buzzhall Spr
Mt. Aggie
Mildred L.
Bright Dot L.
Lake Dorothy
Mt Baldwin
12 614
SCHEELORE
Horsetail Falls
Esha Can
Nevahbe Ridge
Pika L.
Duck Lake
Ram L.
Glen L.
Glennette L.
Franklin L.
Purple L.
Bighorn L.
L. Wit so nah pah
Constance L.
ADMINISTERED
SECOND CROSSING
Fish Creek Hot Sprs
Devils Top
Scoop L.
Cascade
L. Virginia
JOHN
Valley
Tully Hole
Red Slate Mtn
MUIR
Cecil L.
13 163
McGee
Grass L.
13 005
Lost Keys Lks
Bench Lks
Marsh L.
Sierra
Yarkhouth
10 Prescription Numbers
Prescription Area Boundary
Management Area Boundary
NOT TO SCALE

Mammoth (#9)

Description

The Mammoth Management Area contains private land within the Town of Mammoth Lakes, National Forest System land, and land owned by the City of Los Angeles. The Mammoth/June Lake Airport, Hot Creek Fish Hatchery, Hot Creek, and Sherwin Creek Campground are important features in this Management Area.

The area contains the administrative facilities of the Mammoth Ranger District. Facilities include a major visitor center and District Office complex, a warehouse building, a housing area with six government-owned houses and fifteen trailer pads for private house trailers, a grazing pasture and tack facilities.

Topography is predominately moderately rolling terrain in the Mammoth Creek drainage. The western portion of the area contains red fir and Jeffrey pine forest, with the eastern portion comprised primarily of a grass/bitterbrush/sage vegetative type.

Recent land exchange efforts have consolidated land ownership within the Town of Mammoth Lakes leaving only two parcels of National Forest System lands remaining in the Town. These lands are identified as the Shady Rest and Woodstock parcels. Land exchange efforts in the past have been oriented primarily toward consolidation of ownership and providing lands for community needs such as school and hospital sites, industrial park sites for community and private needs, and land for affordable housing development. Because of the current growth emphasis of the newly incorporated Town, it is anticipated that future land exchanges will be proposed by the community to seek to provide amenity facilities in support of the current destination resort philosophy.

Because of the proximity to the Town of Mammoth Lakes, many National Forest land uses are directly related to the support of this popular resort community. Uses include the facilities of the Mammoth County Water District, Southern California Edison major power transmission lines, the Mammoth/June Lake Airport, Continental Telephone communication facilities, a community park, and the Hot Creek Fish Hatchery operated by the State of California. In addition to the private land, the City of Los Angeles also owns several parcels in the eastern portion of the area.

The area contains portions of two grazing allotments.

The area is important as a mule deer migration route and staging area in the fall and spring.

Recreation use is heavy at Sherwin Creek Campground, Shady Rest and Old Shady Rest Campgrounds immediately adjacent to the Town of Mammoth Lakes, and at Earthquake Fault Interpretive Site. Heavy dispersed use also occurs along Mammoth Creek and on Forest lands immediately adjacent to private land in the Town. Hot Creek Interpretive Site, a popular day-use area, focuses on the interpretation of the geologic resource.

Base Lodge II and the proposed Base Lodge VII, important access points for the Mammoth Mountain Ski Area, are also located within the Management Area. Because of its proximity to the proposed Sherwin Bowl Ski Area, the western portion of the unit will play an important part in the development of base and other complementary facilities if Sherwin Bowl is developed.

The visual corridors along U.S. 395, a designated scenic highway, and State Route 203, the primary entry point for the Town of Mammoth Lakes, are important viewsheds to the traveling public.

Management Area Direction

Cultural Resources

- Maintain and enhance cultural resource interpretive sites such as Mammoth Creek cabin, VIS cabin, Indian Caves.

Facilities

- Allow development of new ski base areas commensurate with local transportation system planning.

Fish

- Maintain productivity of the Hot Creek fishery in Section 25, Township 3 South, Range 28 East.

- Maintain resources affecting Hot Creek Fish Hatchery.

- Study Laurel Pond for introduction of fish in coordination with California Department of Fish and Game.

- Manage according to Hot Creek Wild Trout Management Plan of 1986.

Geology

- Continue to cooperate with and coordinate geophysical exploration and research with the scientific community.

- Encourage continued geologic exploration and research relating to post-caldera formation, seismic and volcanic activity and the prediction of future seismic activity and volcanic eruptions.

- Where appropriate emphasize geothermal resources at interpretive sites or in guides that cover the area.

Lands

- Exchange Forest Service lands into the private sector for community expansion when:

    1. The most appropriate use of the National Forest lands over the long term is in the private sector;

2. State, county, local and Forest Service planning processes identify and support conveying ownership of the parcel from National Forest System status to the private sector; and

3. The use intended for the federal land being exchanged meets the intent of the current approved Community General Plan.

- Allow no federal land exchanges north of State Route 203 with the Mammoth Lakes community during this planning period.

- Present proposed developments on National Forest System lands to other governments for their comment when those governments have a vested interest in the proposal.

- Allow development on National Forest System land when it is clearly demonstrated that the infrastructure of a community can support the demands of the proposed development and benefits from development outweigh adverse impacts on the community.

Recreation

- Provide trail interface opportunities with the community of Mammoth Lakes.

- Maintain open-space areas adjacent to the Town of Mammoth Lakes for passive recreation use.

- Prohibit dispersed camping throughout the Management Area.

- Prohibit development of Shady Rest Park beyond existing perimeter roads, and north of the powerline rights-of-way.

- Allow development of Mammoth Creek Park by the Town of Mammoth.

- Identify and program the expansion potential of the Shady Rest and Sherwin Creek Campground complexes and develop as funds become available.

- Fully develop the interpretive potential of the Hot Creek geologic site as funds become available.

Visual Resources

- Develop a corridor viewshed analysis and plans that include State Route 203 and U.S. 395.

- Mitigate the visual impacts of existing major uses in the area seen from U.S. 395 and State Route 203 east of the Town, as this is the major gateway to the Mammoth area.

Water

- Allow development on National Forest System lands in the Mammoth/June area where adequate water is available after natural resource needs are met. Allow for the exploration and development of new water sources on

National Forest System lands for community purposes only when such opportunities have been exhausted on private lands.

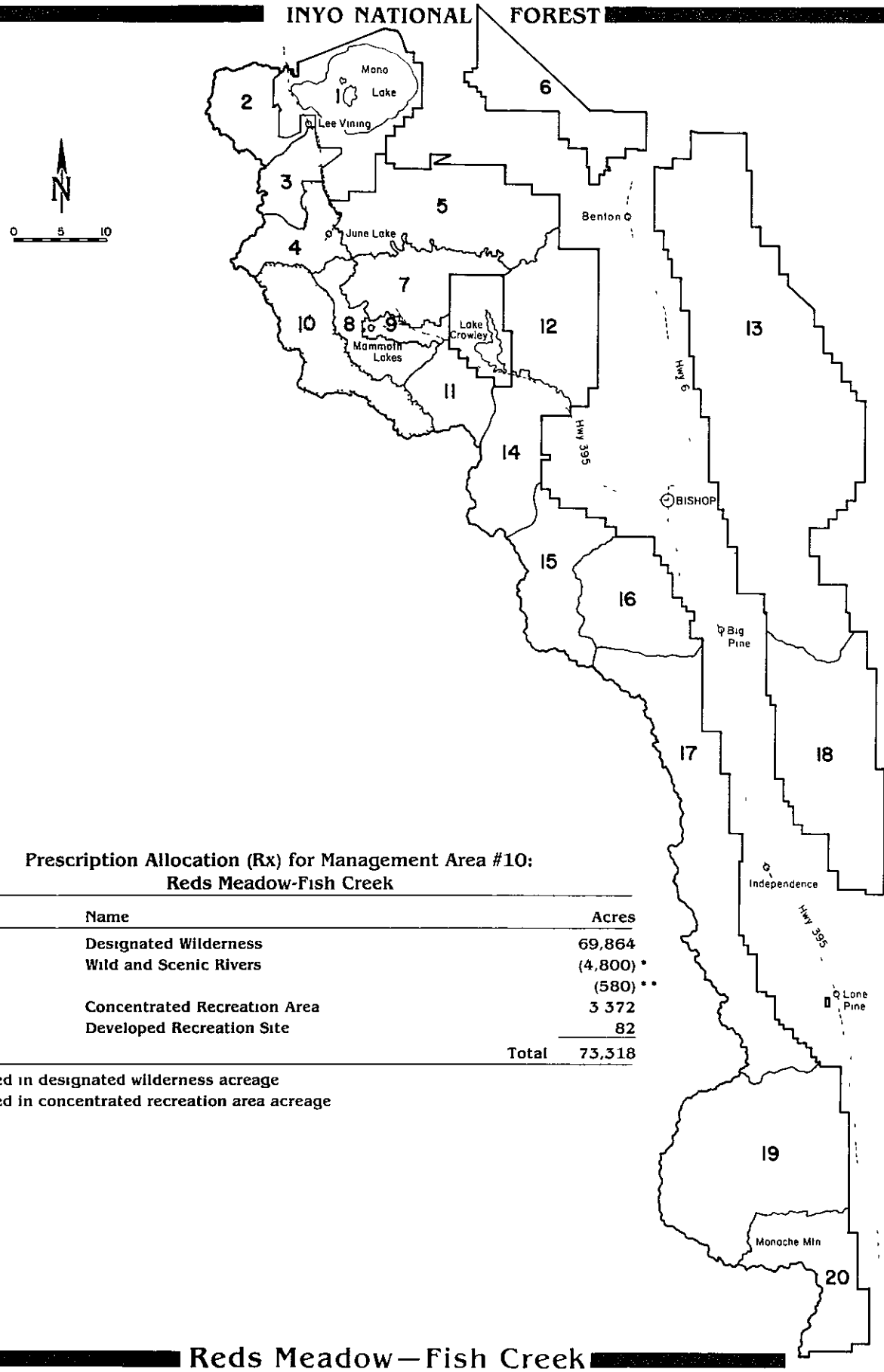
- Support state water quality control requirements and local ordinances to mitigate adverse impacts of urban runoff onto National Forest System lands.

Wildlife

- Continue to enhance and maintain waterfowl habitat at Laurel Pond.

- Maintain the integrity of key winter ranges, holding areas, migration routes, and fawning areas for mule deer.

INYO NATIONAL FOREST



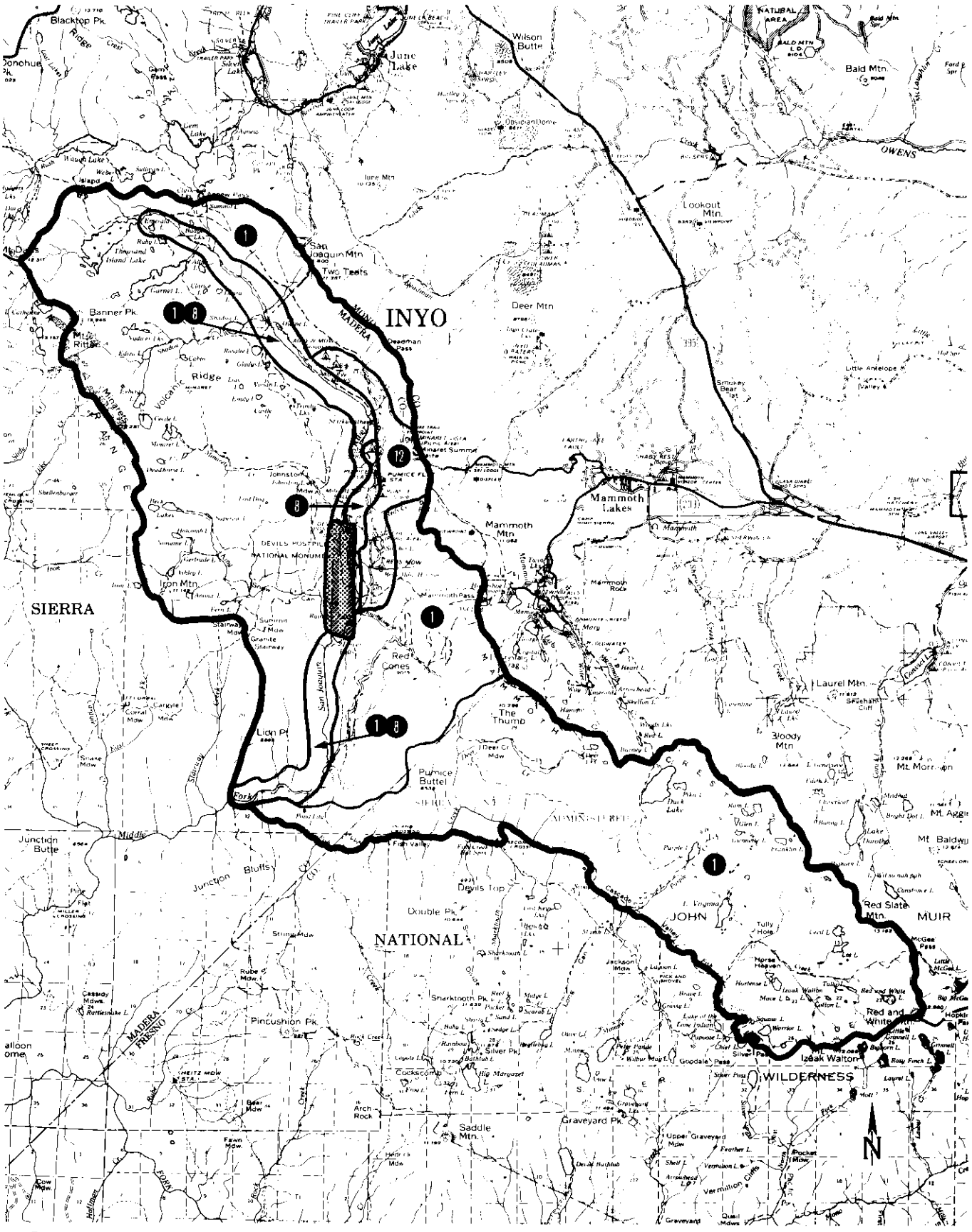
Prescription Allocation (Rx) for Management Area #10: Reds Meadow-Fish Creek

Number	Name	Acres
Rx 1	Designated Wilderness	69,864
Rx 8	Wild and Scenic Rivers	(4,800) *
		(580) **
Rx 12	Concentrated Recreation Area	3 372
Rx 15	Developed Recreation Site	82
	Total	73,318

*Included in designated wilderness acreage
**Included in concentrated recreation area acreage

Reds Meadow—Fish Creek

Reds Meadow—Fish Creek



10 Prescription Numbers — Prescription Area Boundary — Management Area Boundary

NOT TO SCALE

Reds Meadow-Fish Creek (#10)

Description

The Reds Meadow-Fish Creek Management Area includes Reds and Agnew Meadows, a portion of the Ansel Adams and John Muir Wildernesses, and that part of the Sierra National Forest in the John Muir Wilderness administered by the Inyo National Forest. Devils Postpile National Monument, administered by the National Park Service, is located in the center of the Management Area. Prominent features are the Minarets, a distinctive "needle-like" formation along the Ritter Range escarpment, the Reds Meadow Valley, Devils Postpile, Minaret Falls, the high country in the Wildernesses with their many major peaks and lakes, Fish Creek Gorge, and the headwaters of the Middle Fork of the San Joaquin River, a Wild and Scenic River candidate. There are no private land inholdings in the Management Area.

Topography is characterized by U-shaped valleys, steep to precipitous slopes, basaltic outcrops and cinder cones to 13,157 feet at the crest of Mt. Ritter.

Vegetation is as varied as the elevational differences, ranging from mixed chaparral/montane chaparral to pure lodgepole pine and red fir stands, to subalpine whitebark and limber pines.

There are no grazing allotments within the Management Area. There are two outfitter-guide pasture permits.

Recreation is the primary resource. The Reds Meadow Recreation Area, including the Devils Postpile National Monument, is an important developed recreation complex for day visitors, overnight campers and fishermen. Agnew Meadow and Reds Meadow serve as heavily used trailheads into the Ansel Adams and John Muir Wildernesses. A commercial facility provides a rustic resort experience with lodging and pack services for backcountry visitors. Day-use visitors are required to ride a public transportation system which is provided to reduce traffic congestion during the heavy use period (July to early September).

Management Area Direction

Geology

- Emphasize glacial, bedrock, and volcanic geology at interpretive displays and in guides that cover the area.

Recreation

- Develop a recreation composite plan to inventory, coordinate, and program the full summer recreation development potential in the area in Prescription #12 (Reds Meadow). Construct programmed facilities as funds become available.

- Expand transportation systems and access alternatives that de-emphasize the private auto. Look at shuttles and a wide range of trail opportunities such as walking, horses, and bicycles as a possible replacement to private auto use.

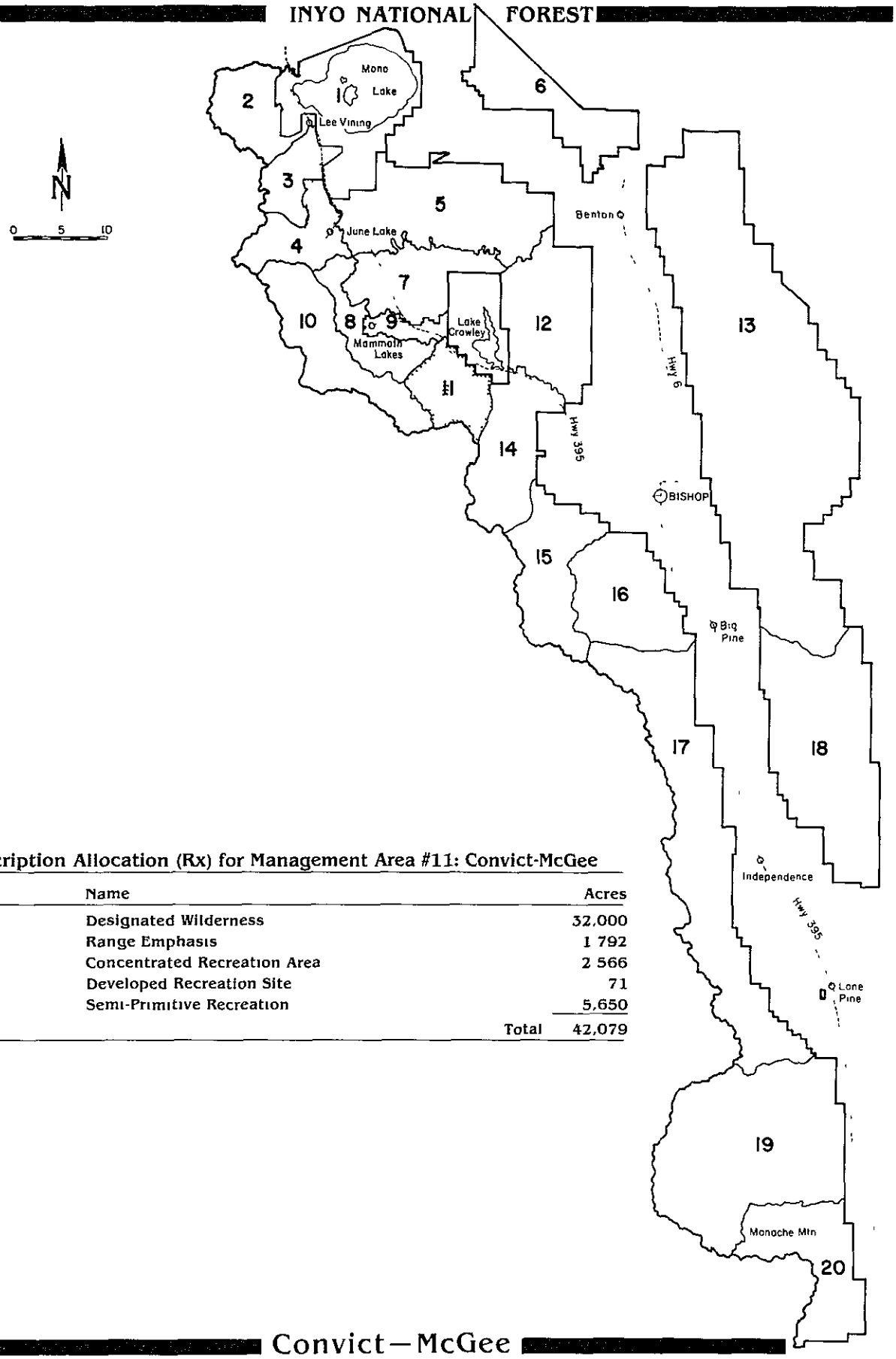
- Continue to coordinate with the National Park Service to share administrative and fiscal responsibility for the existing shuttle system.

- Manage to maintain primitive recreation experience opportunities during winter months.

Wild and Scenic Rivers

- Maintain the existing wild and scenic attributes of the Middle Fork of the San Joaquin River and allow no activities that would preclude this candidate river from wild and scenic designation.

INYO NATIONAL FOREST

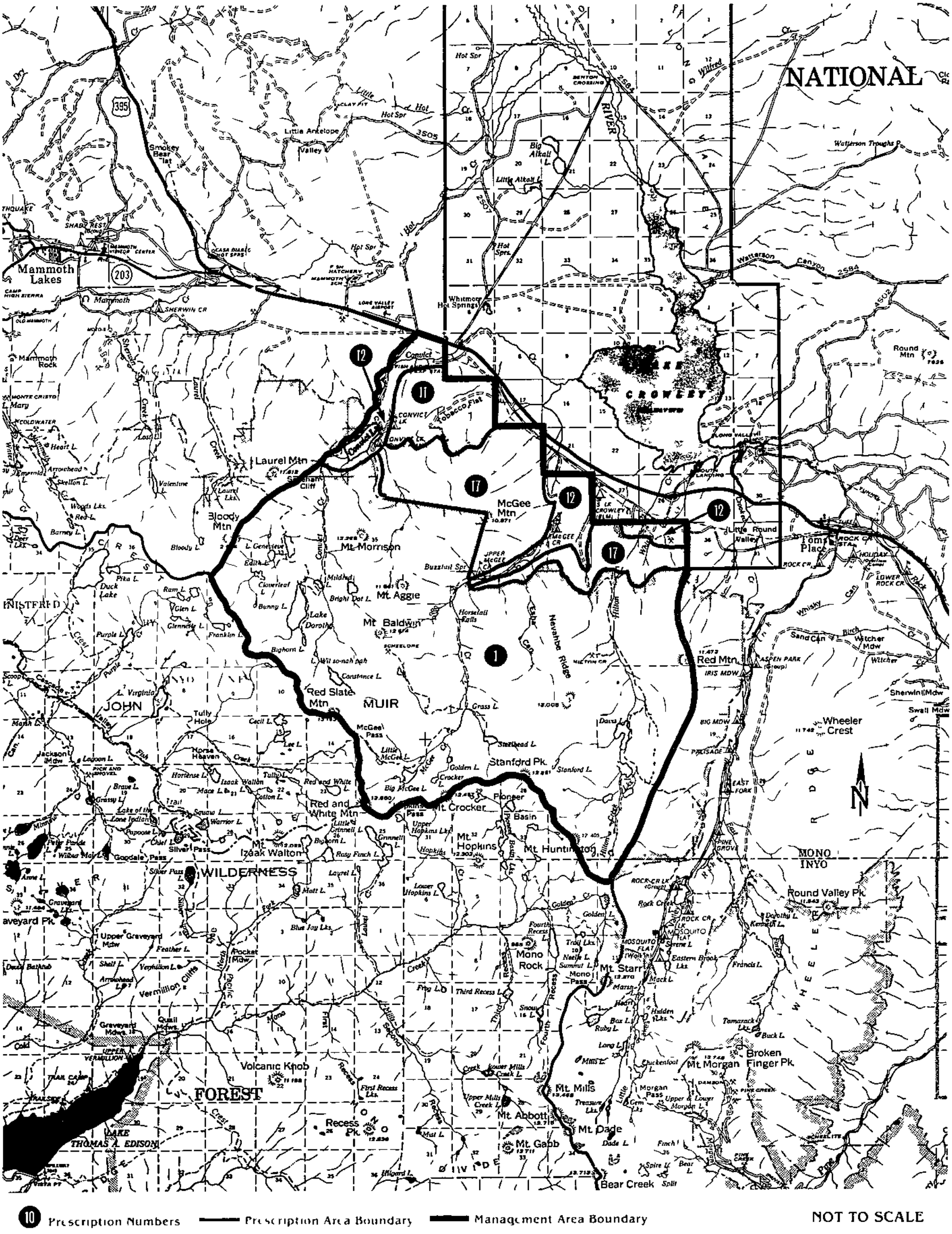


Prescription Allocation (Rx) for Management Area #11: Convict-McGee

Number	Name	Acres
Rx 1	Designated Wilderness	32,000
Rx 11	Range Emphasis	1 792
Rx 12	Concentrated Recreation Area	2 566
Rx 15	Developed Recreation Site	71
Rx 17	Semi-Primitive Recreation	5,650
	Total	42,079

Convict—McGee

Convict—McGee



10 Prescription Numbers — Prescription Area Boundary — Management Area Boundary NOT TO SCALE

Convict-McGee (#11)

Description

The Convict-McGee Management Area located southwest of Lake Crowley and U.S. 395 contains all of the Convict Creek, McGee Creek, and Hilton Creek drainages. Three-quarters of the management area is a part of the John Muir Wilderness. Prominent features are Convict Lake, Mt. Morrison, Bloody Mountain, Mt. Baldwin, Red Slate Mountain, Mt. Morgan, and Stanford Peak. Private land inholdings consist of 120 acres along Hilton and Whiskey Creeks, and 240 acres along Convict Creek owned by the City of Los Angeles.

Topography is rugged and steep. Moraines dominate the lower slopes, with the terrain rising to the Eastern Sierra Escarpment. Elevations range from 6,900 feet on lower Whiskey Creek to 13,163 feet on Red Slate Mountain.

Vegetation varies from the open sage/bitterbrush-dominated moraines and the pinyon pine/mountain mahogany-dominated intermediate slopes to patches of subalpine whitebark pine. Scattered pockets of aspen add to the vegetative diversity.

The Management Area contains two grazing allotments and a small section of a third.

The McGee Creek drainage includes several campgrounds and is a popular trailhead into the John Muir Wilderness. Outfitter and guide services are available from a pack station into the upper McGee Creek.

The area is important to the Sherwin-Buttermilk mule deer herd as a migration route in the fall and winter. This Management Area also includes the southern portion of the Sherwin deer herd staging area.

Management Area Direction

Geology

- Emphasize glacial and bedrock geology at interpretive displays and in guides that cover the area.

Recreation

- Pursue development of a loop path around Convict Lake that would tie into existing developed shoreline paths.

- Rehabilitate the trailhead area of McGee Creek.

- Provide shade in the newly constructed McGee Creek Campground.

- Develop a composite plan before expanding day-use and overnight capacity.

Visual

- Develop a corridor viewshed analysis and plans to include U.S. 395 within and adjacent to this Management Area.

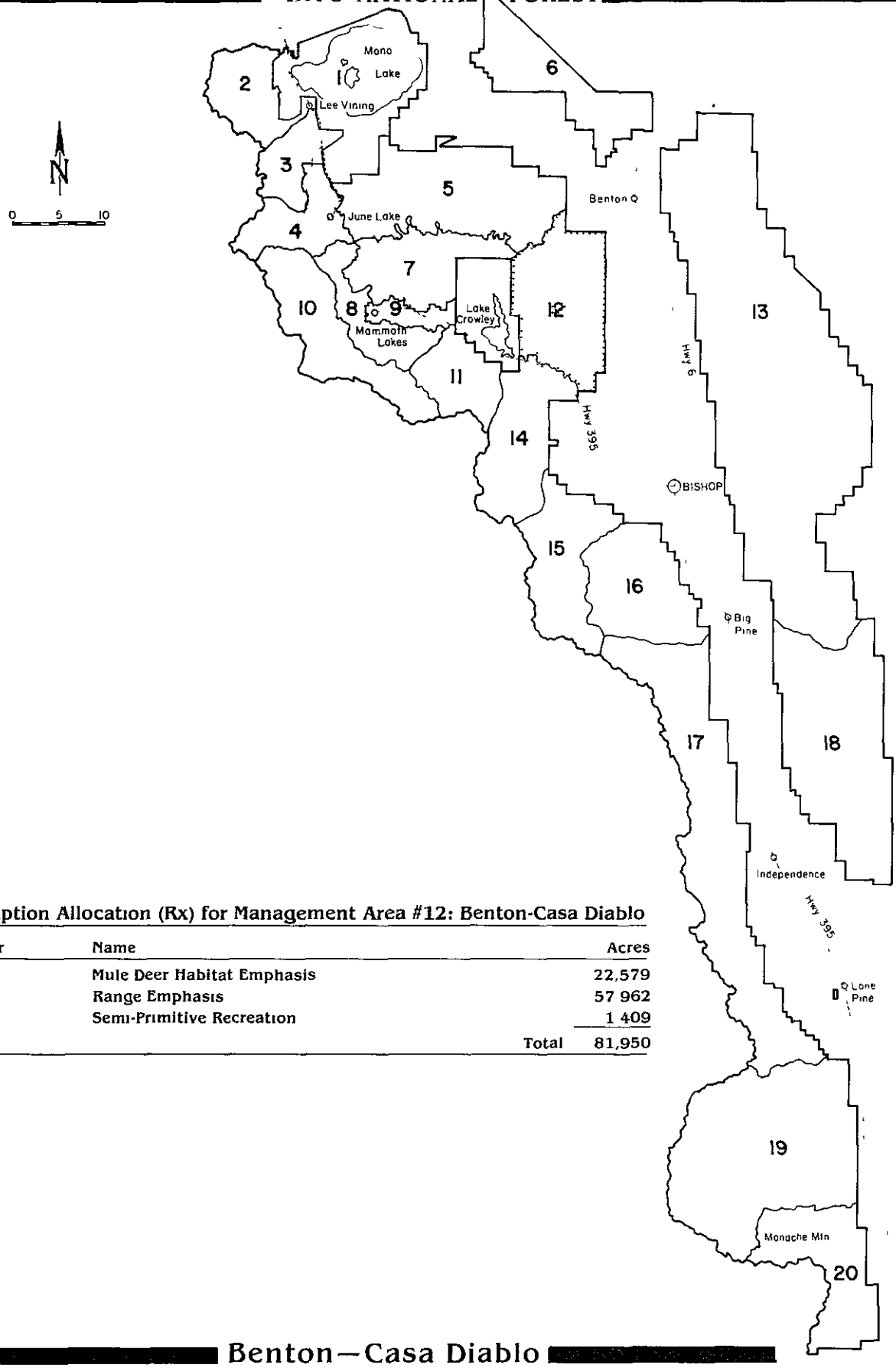
- Allow no new overhead lines to occupy existing utility routes as seen from U.S. 395. Relocate existing powerlines as opportunities arise.

- Reduce the visual impact of the Convict sewer plant facility by using vegetative screening.

Wildlife

- Maintain the integrity of key winter ranges, holding areas, migration routes, and fawning areas for mule deer.

INYO NATIONAL FOREST

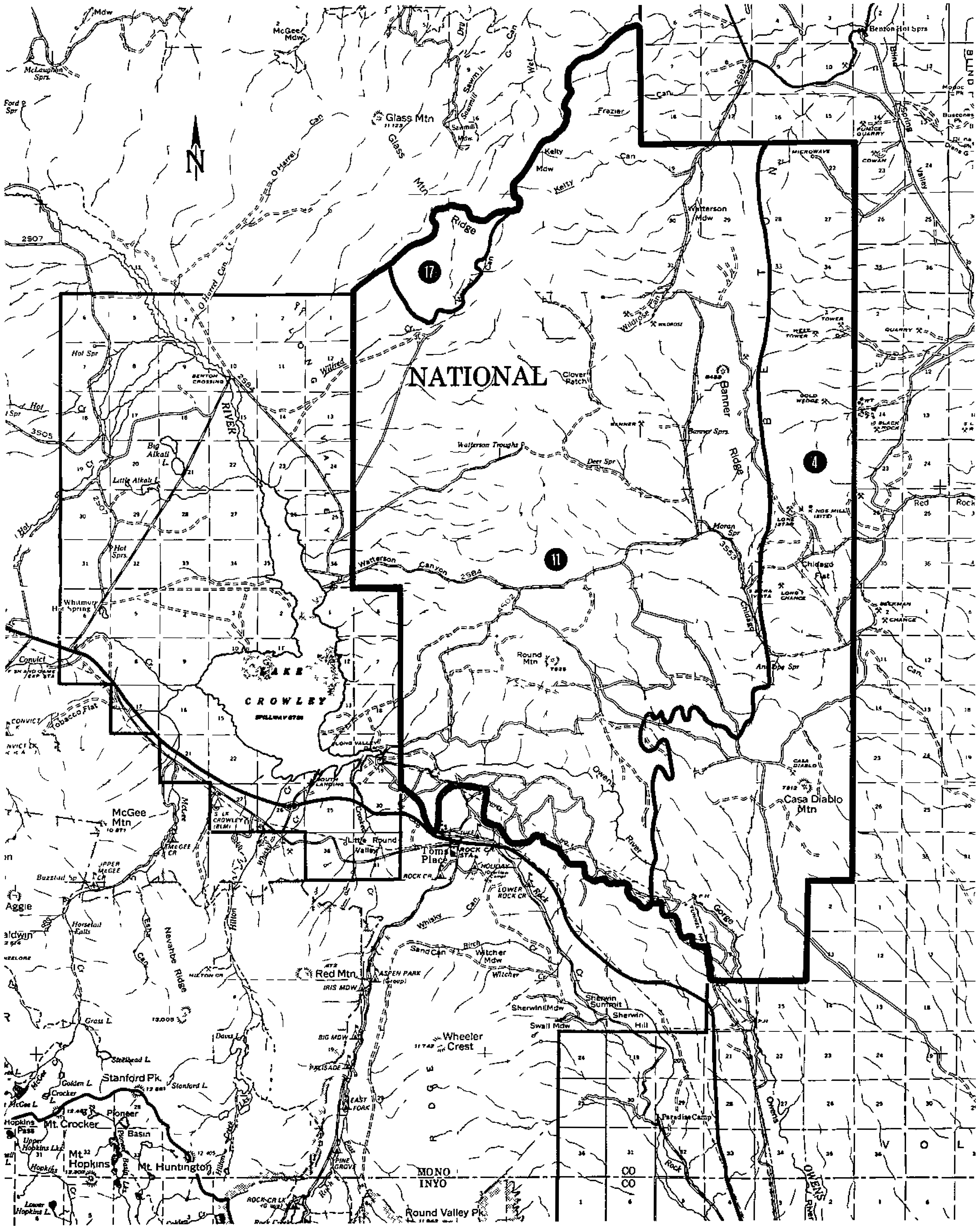


Prescription Allocation (Rx) for Management Area #12: Benton-Casa Diablo

Number	Name	Acres
Rx 4	Mule Deer Habitat Emphasis	22,579
Rx 11	Range Emphasis	57 962
Rx 17	Semi-Primitive Recreation	1 409
	Total	81,950

Benton—Casa Diablo

Benton—Casa Diablo



⑩ Prescription Numbers — Prescription Area Boundary — Management Area Boundary

NOT TO SCALE

Benton-Casa Diablo (#12)

Description

The Benton-Casa Diablo Management Area lies between Lake Crowley and Hammil Valley. Prominent features include Kelty Peak, Casa Diablo Mountain, Banner Ridge and Owens River Gorge.

The area is characterized by a broad volcanic tableland punctuated by mountain peaks of the Benton Mountain Range. The western portion of the area drains toward Lake Crowley, the southern portion toward the Owens River, and the eastern portion toward Chalfant Valley. Elevations range from 5,800 feet in the Owens River Gorge to 10,560 feet at Kelty Peak. The area has several dispersed parcels of private land inholdings, and several square miles of City of Los Angeles ownership in and around the Owens River Gorge.

Vegetation ranges from a sparse Jeffrey pine forest intermixed with mountain mahogany and pinyon pine to pinyon-juniper and sagebrush-bitterbrush scrub.

The Management Area is highly mineralized and contains many mining claims. It is also valued for livestock grazing and contains all or part of eight grazing allotments. Recreationists visit in light numbers for primitive camping, fishing, fuelwood gathering, and other dispersed uses. The area is well served by roads and trails. A small group of pronghorn (approximately twenty animals) migrate from winter habitat in Hammil Valley to the Crowley Lake Basin where they summer.

The majority of the winter range for the Casa Diablo deer herd, 1,500 animals, is located in this Management Area. A major migration corridor extends from the winter ranges around the south end of the Glass Mountains and then follows the base of the Glass Mountains paralleling the Owens River.

Management Area Direction

Range

- Consider placement and timing of water availability for deer and other wildlife when developing water sources for livestock.
- Utilize plant species that also benefit wildlife when revegetating rangeland.
- Maintain or develop a vegetative mosaic when regenerating range forage.
- Manage grazing to minimize effects on fish and wildlife.

Visual

- Utilize only existing powerline routes for the location of additional overhead lines. Do not create new routes through the area.

Water

- Negotiate with public utility entities to return water to portions of the Owens River Gorge.

Wildlife

- Develop water sources for deer and other wildlife where needed as identified in the deer herd management plan.

- Protect important sage grouse wintering grounds and strutting grounds/nesting complex from detrimental disturbance.

- Maintain the integrity of migration corridors used by pronghorn and mule deer between Long Valley and Hammil/Chalfant Valley.

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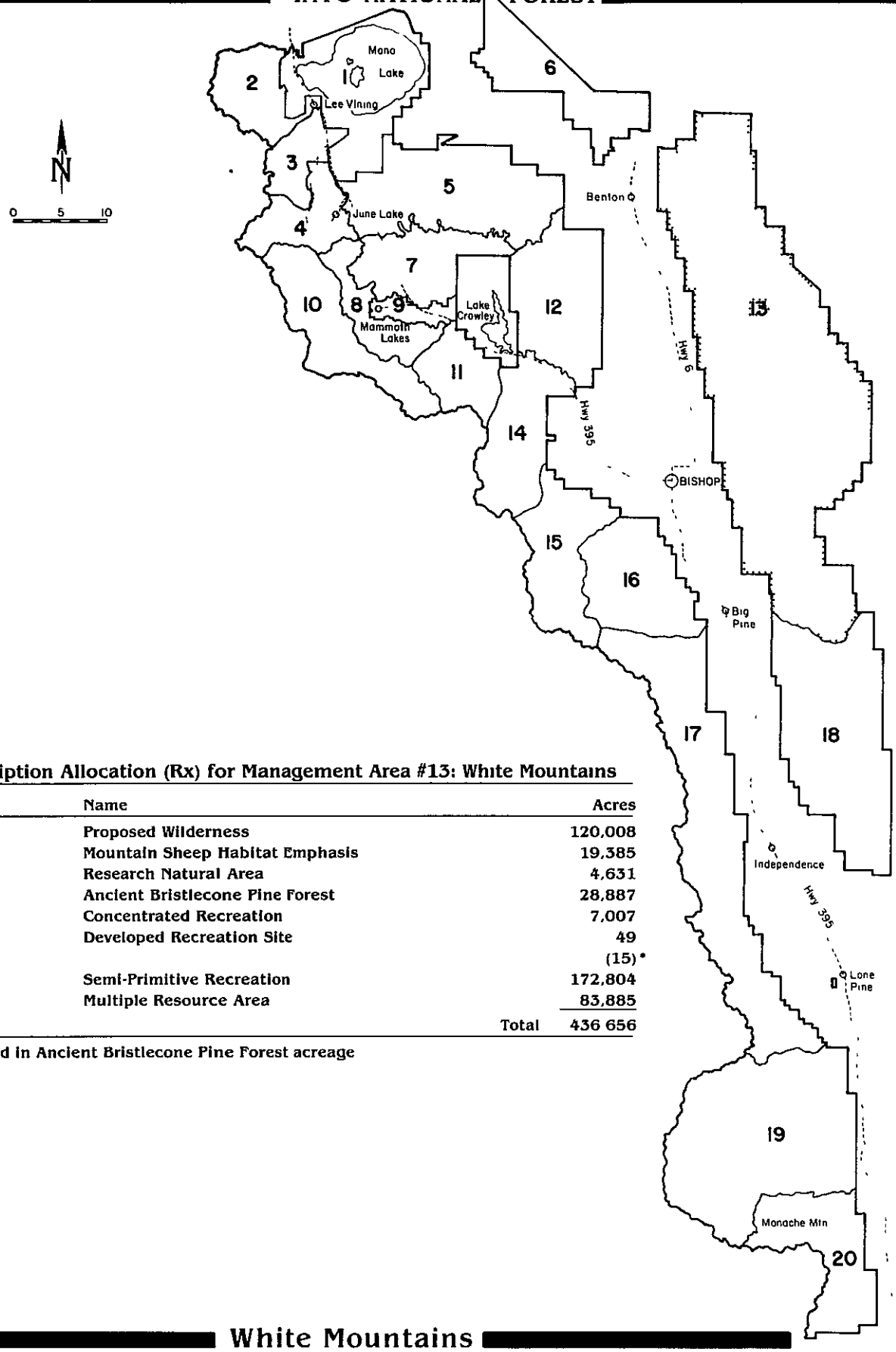
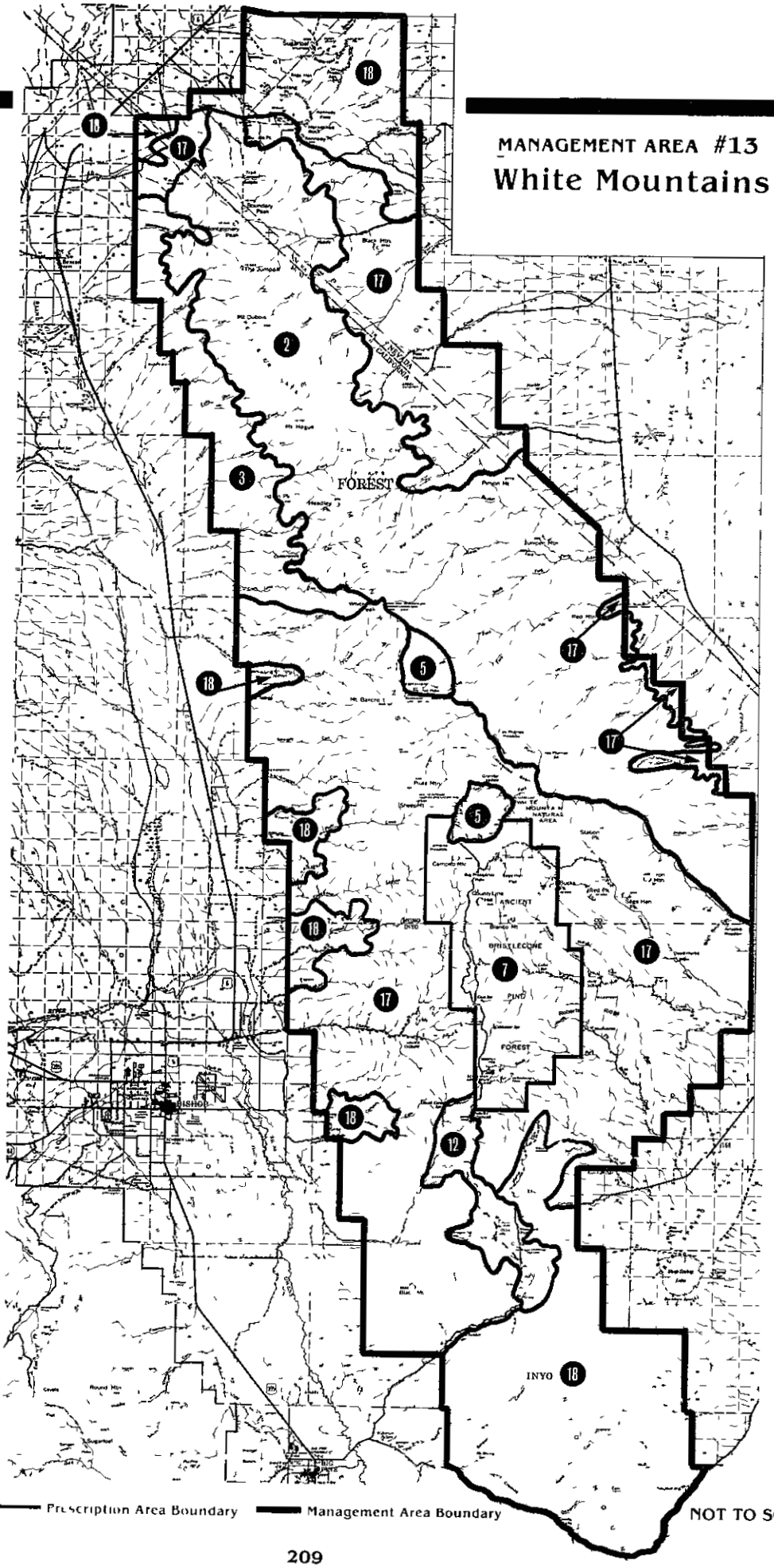


Prescription Allocation (Rx) for Management Area #13: White Mountains

Number	Name	Acres
Rx 2	Proposed Wilderness	120,008
Rx 3	Mountain Sheep Habitat Emphasis	19,385
Rx 5	Research Natural Area	4,631
Rx 7	Ancient Bristlecone Pine Forest	28,887
Rx 12	Concentrated Recreation	7,007
Rx 15	Developed Recreation Site	49
		(15)*
Rx 17	Semi-Primitive Recreation	172,804
Rx 18	Multiple Resource Area	83,885
	Total	436 656

*Included in Ancient Bristlecone Pine Forest acreage

White Mountains



10 Prescription Numbers — Prescription Area Boundary — Management Area Boundary

NOT TO SCALE

White Mountains (#13)

Description

The White Mountains Management Area straddles the California-Nevada border within the Great Basin Geographic Province. Prominent features include bristlecone pine (the oldest living trees), Boundary Peak (the tallest peak in Nevada at 13,140 feet), White Mountain Peak (14,248 feet), Paiute cutthroat trout (a threatened species), and desert mountain sheep (a special interest species). The vast majority of the area is National Forest System land with only a few scattered parcels of private land inholdings.

The area is characterized by an abrupt, steep escarpment on the west; high mountain peaks, plateaus, rugged canyons, and foothills on the east. Elevations range from 4,600 feet on the Waucoba Road at the Forest boundary to 14,248 feet at the summit of White Mountain.

Vegetation ranges from alpine fellfields to bristlecone and limber pine forests to pinyon-juniper woodland to sagebrush and scrub at the lower elevations.

The White Mountain wild horse herd ranges mostly in the canyons within the northeastern portion of the Management Area from Queen Canyon in the north to Indian Garden Creek in the south. Pronghorn antelope, transplanted in the vicinity of Hammil Valley in 1982, range the northwestern boundary of the Management Area.

The White Mountains are moderately mineralized with numerous unpatented claims. Recreational use focuses primarily on the Ancient Bristlecone Pine Forest, hunting, and to a limited extent trout fishing. The University of California maintains three high elevation research laboratories under permit. Livestock grazing is an important use. The Management Area contains all or part of ten grazing allotments. The area is largely unroaded and unaltered by human activities. There are occurrences of important prehistoric native American habitation sites. The scientific value of the remnant bristlecone pine wood is immeasurable.

The Management Area contains one established Research Natural Area (RNA) and one recommended for establishment. The White Mountain RNA was established in 1953 for its bristlecone pine community; the McAfee RNA is recommended for its alpine fellfield. The McAfee RNA is partially located in the White Mountain Scientific Area. This area was designated under a U-3 (Recreation) classification by the Regional Forester in 1971. This classification is no longer appropriate for the area under the regulations. Any road closures or other restrictions needed to protect the scientific values of the area are now under the jurisdiction of the Forest Supervisor.

A portion of this Management Area is being recommended for wilderness designation. It includes the White Mountains Further Planning Area, identified as having outstanding scenic attractions and recreational challenges.

Management Area Direction

Geology

- Emphasize the Great Basin Physiographic Province and sedimentary geology at interpretive sites and in guides that cover the area. Where appropriate, emphasize information on the White Mountain seismic gap, geology of the Bristlecone Pine Forest, history of local mining districts and the presence of important fossil groups.

Lands

- Continue efforts to resolve conflicts between continuous broadcast and intermittent broadcast users at the Silver Peak electronic site.

- Participate with the Bureau of Land Management in the study of existing and potential powerline corridors. Include in this study the need for additional north-south utility lines paralleling the existing Oregon-Sylmar HVDC transmission line and for new east-west corridor locations.

- Declassify the White Mountain Scientific Area. Protect the scientific values of the area under the authority of the Forest Supervisor.

Range

- Exclude portions of the Perry Aiken Flat allotment from cattle grazing to protect mountain sheep habitat.

- Issue no grazing permits for the road corridor along State Route 168 from the Forest boundary northeasterly through Westgard Canyon to the junction with the White Mountain Road (No. 4S01), and along White Mountain Road to Sierra View, in order to protect native plants and wildflowers for public viewing and enjoyment.

Recreation

- Coordinate management of the Poleta OHV Area with the Bureau of Land Management and the Los Angeles Department of Water and Power.

- Allow OHVs to travel anywhere in the Poleta OHV Area.

- Prepare or update a recreation composite plan for areas in Prescriptions #7 and #12 that would inventory, coordinate, and program their full summer recreation development potential. Construct new facilities as funds become available.

- If the White Mountains are designated as wilderness, consider minimizing trail construction so as to continue the existing limited access within the area.

- Manage the White Mountains to emphasize Primitive and Semi-Primitive Non-Motorized ROS class activities and opportunities except in areas designated as Prescription #18, which will emphasize Semi-Primitive

Timber

- Prohibit fuelwood gathering above 8,000 feet elevation in the White Mountains.

Visual

- Update the White Mountains sensitivity level mapping from trails and OHV routes.

Wilderness

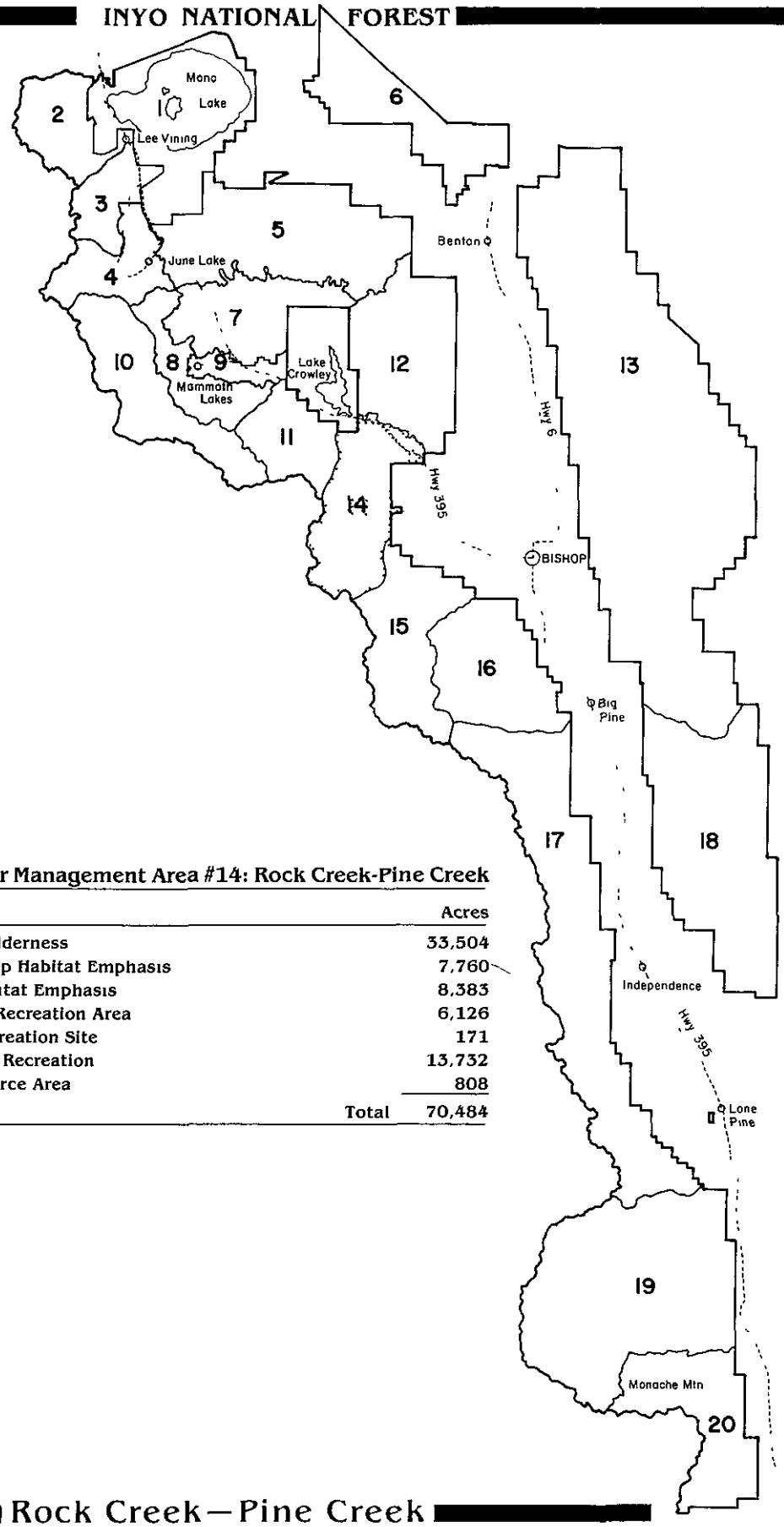
- Recommend 120,000 acres in the higher elevations of the White Mountains Further Planning Area for wilderness designation. This recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. Final decisions on wilderness designation are made by Congress. After designation by Congress, a wilderness management plan will be developed by the Forest.

Wildlife

- Examine the potential for habitat improvement on mountain sheep winter range using prescribed fire.

- Prepare a plan for the recovery and conservation of Nelson mountain sheep.

INYO NATIONAL FOREST

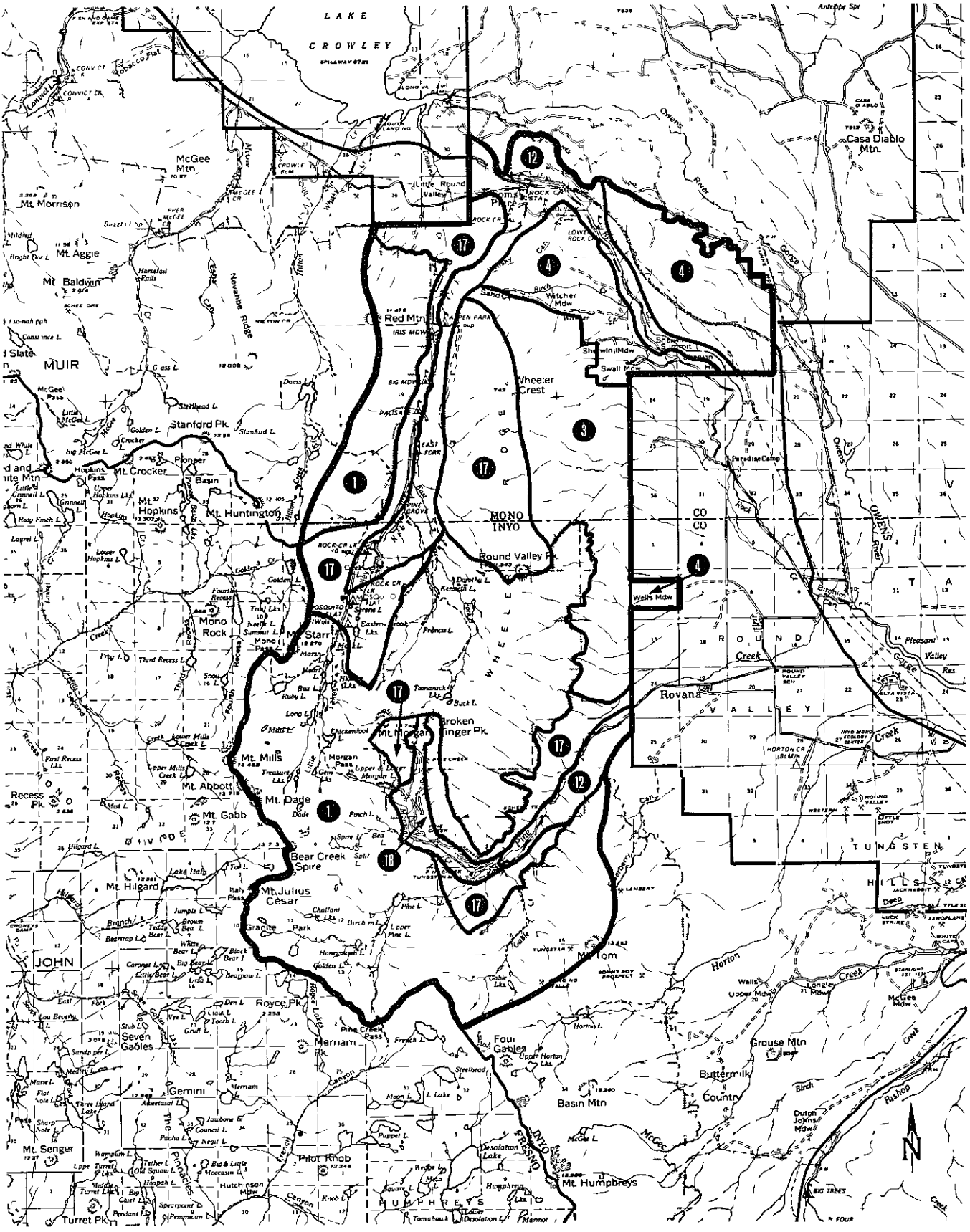


Prescription Allocation (Rx) for Management Area #14: Rock Creek-Pine Creek

Number	Name	Acres
Rx 1	Designated Wilderness	33,504
Rx 3	Mountain Sheep Habitat Emphasis	7,760
Rx 4	Mule Deer Habitat Emphasis	8,383
Rx 12	Concentrated Recreation Area	6,126
Rx 15	Developed Recreation Site	171
Rx 17	Semi-Primitive Recreation	13,732
Rx 18	Multiple Resource Area	808
	Total	70,484

Rock Creek—Pine Creek

Rock Creek—Pine Creek



10 Prescription Numbers — Prescription Area Boundary — Management Area Boundary

NOT TO SCALE

Rock Creek-Pine Creek (#14)

Description

The Rock Creek-Pine Creek Management Area straddles the Inyo-Mono County line and U.S. 395 from Sherwin Summit to Tom's Place. The rural communities of Sunny Slopes and Swall Meadows are located in this Management Area. About half of the Management Area is in the John Muir Wilderness. Prominent features are Wheeler Crest, Mt. Morgan, Mt. Abbott, Rock Creek Lake, and the concentrated recreation use facilities of Rock Creek Canyon.

The area is characterized by the rugged Eastern Sierra Escarpment, steep drainages, mountain meadows, and the Bishop tuff geologic formation. Elevations range from 4,860 feet near Round Valley to 13,748 feet atop Mt. Morgan. The area contains several dispersed parcels of private land and patented mining claims.

Vegetation ranges from subalpine forest, mixed coniferous forest, and pinyon-juniper to sagebrush and scrub.

One of the world's largest tungsten mines is located in the Pine Creek drainage. The mine has been inactive for the past few years and its status is uncertain at this time.

Summertime camping and fishing in Rock Creek Canyon are the most popular recreation activities. A resort under permit provides increasingly popular nordic ski and winter mountaineering services in Rock Creek Canyon. The area also contains most of one grazing allotment and supports key winter range for the Sherwin deer herd. A small band of Sierra mountain sheep have been reestablished at Wheeler Crest. Portions of this Management Area are extremely important as a winter range and migration corridor for several thousand deer of the Sherwin-Buttermilk deer herd.

Management Area Direction

Range

- Allow no increases in grazing where this would significantly degrade fish or wildlife habitat. Amend AMPs to include mitigation measures and take corrective action where grazing is significantly impacting wildlife habitat.

Recreation

- Review the future use determination decision for the area under permit to Rock Creek Lodge so that continued high quality nordic opportunities are provided to the public. Reexamine the future use determination for the Rock Creek Pack Station (Lot 13 Pine Grove Tract).

- Prepare a site plan for the day-use extension of the Tuff Campground.

- Fully identify and program dispersed trail facilities in the area in Prescription #12 (Rock Creek) and Lower Pine Creek from Rovana to Scheelite. Include hiking and equestrian trail facilities.

- Prepare site plans for Pine Creek Campground below Scheelite and for the trailhead area in Upper Canyon.

Visual

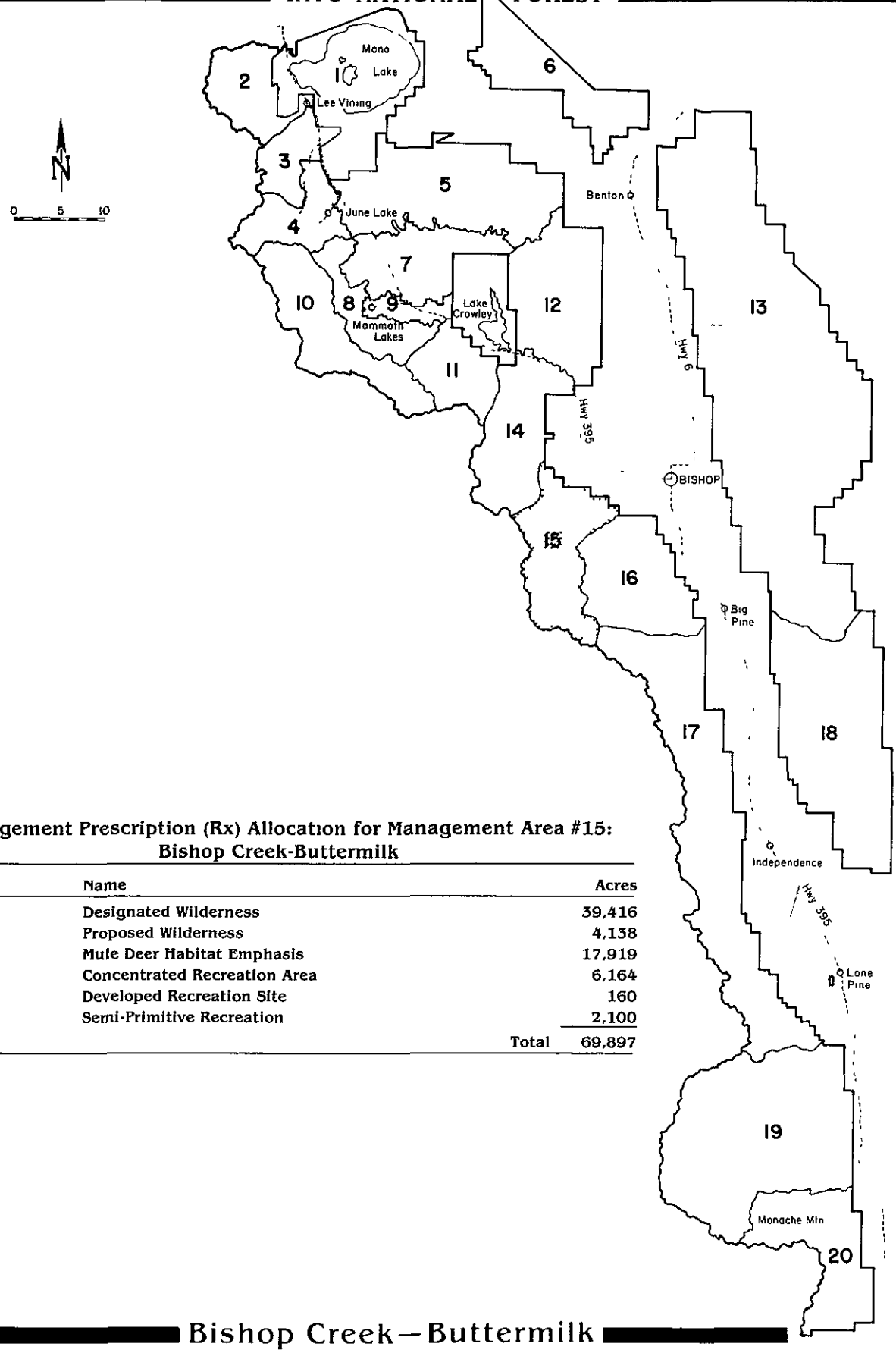
- Develop a corridor viewshed analysis and plan that includes U.S. 395.

- Allow no new overhead lines to occupy existing routes as seen from U.S. 395.

Water

- Manage the Rock Creek watershed above Tom's Place, the Paradise community water supply intake, and the Pine Creek watershed above the Rovana community water supply intake with all the precautions needed to ensure that water is provided at a quality level consistent and compatible with State Basin Plan objectives for domestic supply.

INYO NATIONAL FOREST

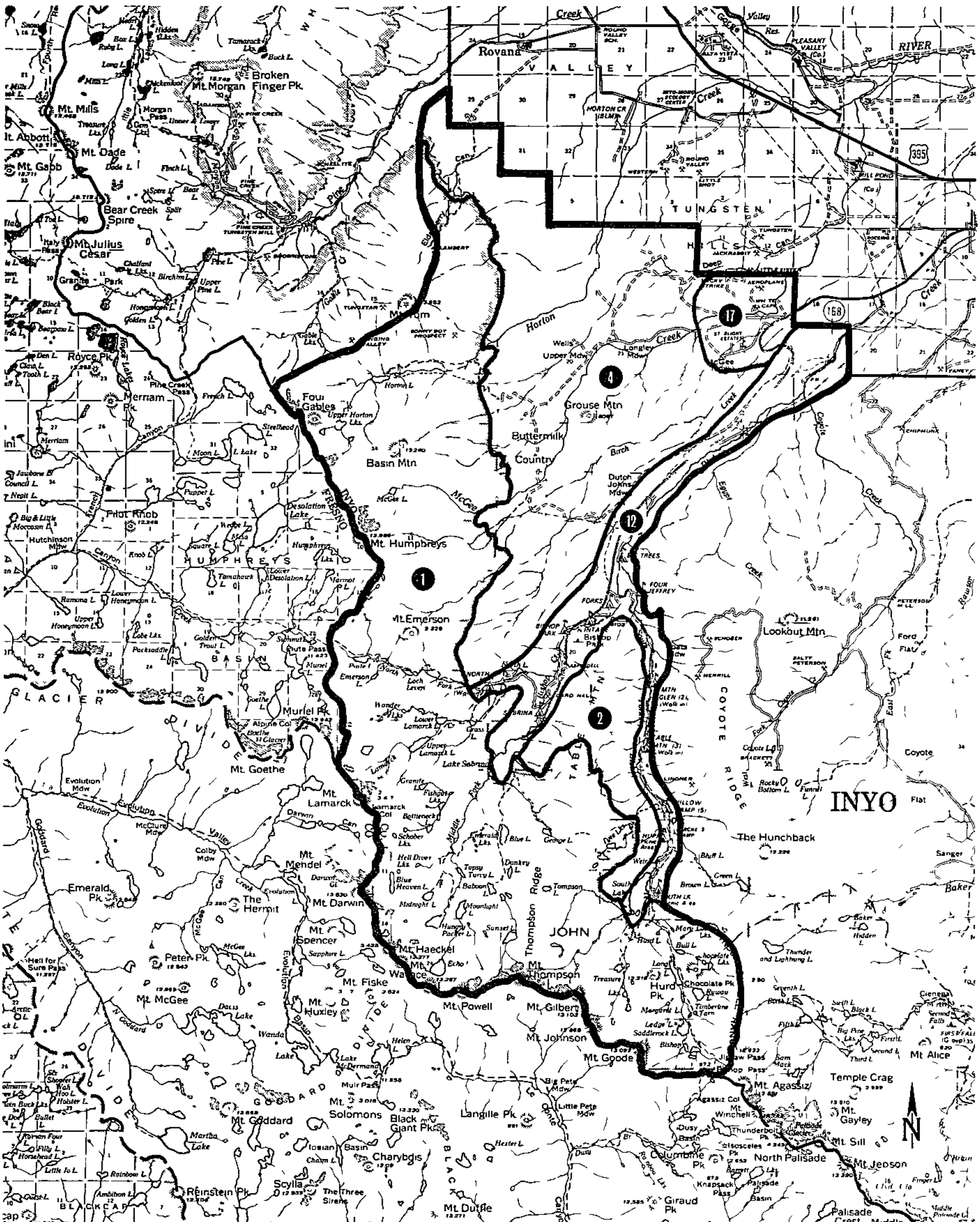


Management Prescription (Rx) Allocation for Management Area #15: Bishop Creek-Buttermilk

Number	Name	Acres
Rx 1	Designated Wilderness	39,416
Rx 2	Proposed Wilderness	4,138
Rx 4	Mule Deer Habitat Emphasis	17,919
Rx 12	Concentrated Recreation Area	6,164
Rx 15	Developed Recreation Site	160
Rx 17	Semi-Primitive Recreation	2,100
	Total	69,897

Bishop Creek—Buttermilk

Bishop Creek—Buttermilk



❿ Prescription Numbers — Prescription Area Boundary ▬ Management Area Boundary NOT TO SCALE

Bishop Creek-Buttermilk (#15)

Description

The Bishop Creek-Buttermilk Management Area includes a portion of the Sierra Escarpment and lies south and west of Bishop. More than half the area is in the John Muir Wilderness. Prominent features are Mt. Tom, Basin Mountain, Mt. Humphreys, Mt. Emerson, Mt. Darwin, Table Mountain, Lake Sabrina, South Lake, Bishop Creek, Horton Creek, and the Buttermilk country. The area contains many parcels of private land, including the rural communities of Starlite Estates, Aspendell, and Habeggers.

The area is characterized by steep, rugged mountains and canyons, mountain meadows and pristine lakes. Elevations range from 5,000 feet along lower Bishop Creek to 13,986 atop Mt. Humphreys.

A portion of the Management Area is being recommended for wilderness. The Table Mountain Further Planning Area was evaluated in the RARE II process as preserving the wilderness attributes of the region. It is contiguous to the John Muir Wilderness and currently provides wilderness-type recreation opportunities.

Vegetation ranges from subalpine forest to pinyon-juniper, sagebrush-bitterbrush, and desert scrub.

The area contains one grazing allotment and supports key winter range for the Buttermilk deer herd. Elderberry Canyon is a potential mountain sheep transplant site.

The Management Area contains the Bishop Creek concentrated use recreation area, making it best known for camping and fishing opportunities. Lake Sabrina and South Lake are large, man-made reservoirs which are the focal point for boat fishing. Thousands of visitors use this concentrated recreation use corridor annually.

Management Area Direction

Facilities

- Do not increase current standards for road access and maintenance within the area in Prescription #4.

Fish

- Consider the South Fork of Bishop Creek for a resident trout fishery.

Range

- Allow no increases in grazing where this would significantly degrade fish or wildlife habitat. Amend AMPs to include mitigation measures and take corrective action where grazing is significantly impacting wildlife habitat.

Recreation

- Develop a recreation composite plan to inventory, coordinate, and program the summer and winter recreation development potential in the area in Prescription #12 (Bishop Creek). Construct developed sites as funds become available.

- Identify and program dispersed trail facilities in the area in Prescription #12 to include hiking and equestrian opportunities.

- Close all roads to OHV motorized use above Wells Upper Meadow in the Buttermilk area between November 15 and April 15 to reduce adverse impacts on this key winter deer range.

- Emphasize Semi-Primitive Motorized and Semi-Primitive Non-Motorized activities and opportunities in the area in Prescription #4 from April 15 to November 15.

Visual

- Develop a corridor viewshed analysis and plan to include State Route 168 (Bishop Creek), the South Fork of Bishop Creek, and the North Lake Road within this unit.

- Work with CalTrans and Inyo County to reestablish vegetation on cuts and fills where feasible along major roads in Bishop Creek.

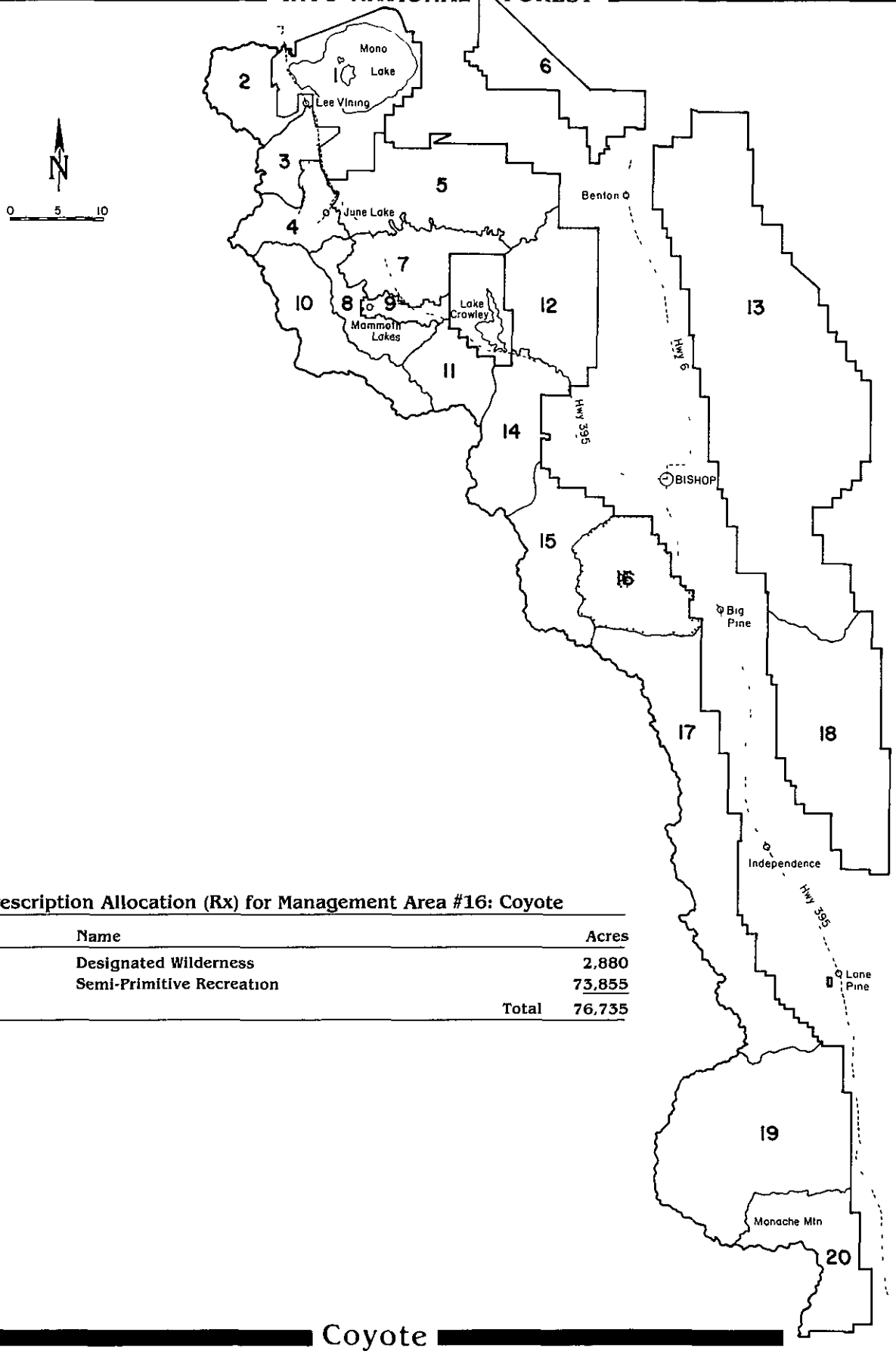
Water

- Manage Bishop Creek watershed above the Plant Four community water supply intake with all the precautions needed to ensure that water is provided at a quality level consistent and compatible with State Basin Plan objectives for domestic supply.

Wilderness

- Recommend the 4,138-acre Table Mountain Further Planning Area for wilderness designation. This recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. Final decisions on wilderness designation have been reserved by the Congress to itself. After designation by Congress a wilderness management plan will be developed as an amendment to the John Muir Wilderness Management Plan.

INYO NATIONAL FOREST

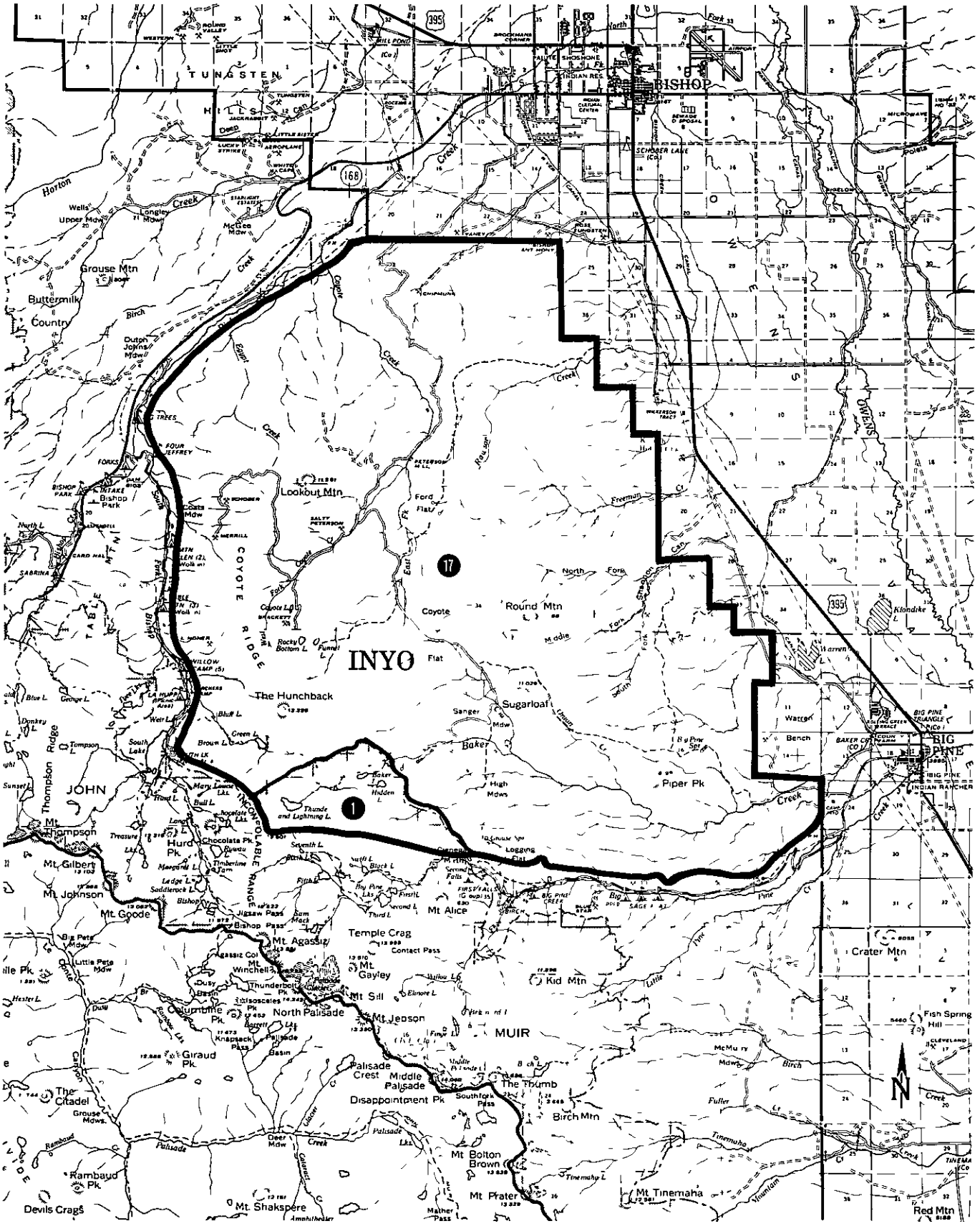


Prescription Allocation (Rx) for Management Area #16: Coyote

Number	Name	Acres
Rx 1	Designated Wilderness	2,880
Rx 17	Semi-Primitive Recreation	73,855
	Total	76,735

Coyote

Coyote



10 Prescription Numbers — Prescription Area Boundary — Management Area Boundary

NOT TO SCALE

Coyote (#16)

Description

The Coyote Management Area lies southwest of Bishop on the east slope of the Sierra Nevada. The area consists mostly of Coyote Flat. This is an ancient plain that was in existence prior to the uplifting of the Sierra mountain block. This ancient plain survived the uplift intact and now lies as a perched high plateau surrounded by precipitous, glaciated mountain and canyon topography. The area also includes a very small portion of the John Muir Wilderness in the southwestern sector. Other prominent features include Coyote Ridge, Lookout Mountain, the Hunchback, Round Mountain, Sugarloaf, a portion of the Inconsolable Range, and Baker and Coyote Creeks. Some parcels of private land inholdings are dispersed throughout the area.

Steep, rugged terrain and flat tableland topography characterize the area. Elevations range from 4,000 feet four miles northwest of Big Pine to 13,501 feet along the Inconsolable Range. Vehicle entry is via a single off-highway road. The area is largely unroaded and undisturbed by man's influences.

Vegetation is characterized by limber pine at the higher elevations, ranging into lodgepole-Jeffrey pine, pinyon-juniper, and sagebrush.

Some mining (primarily for tungsten) has occurred, and many mining claims are present.

Cattle grazing is an important use as the area contains four grazing allotments. The area is generally snowbound from December through April with little use except by an occasional cross-country skier.

Recreationists value the area for its off-highway accessibility and its primitive camping, fishing, and hunting opportunities.

Potential exists for a Sierra Nevada mountain sheep transplant into Shannon Creek. Lower portions of this management area are used as winter range by the Goodale deer herd.

Management Area Direction

Range

- Allow no increases in grazing where this would significantly degrade fish or wildlife habitat. Amend AMPs to include mitigation measures and take corrective action where grazing is significantly impacting wildlife habitat.

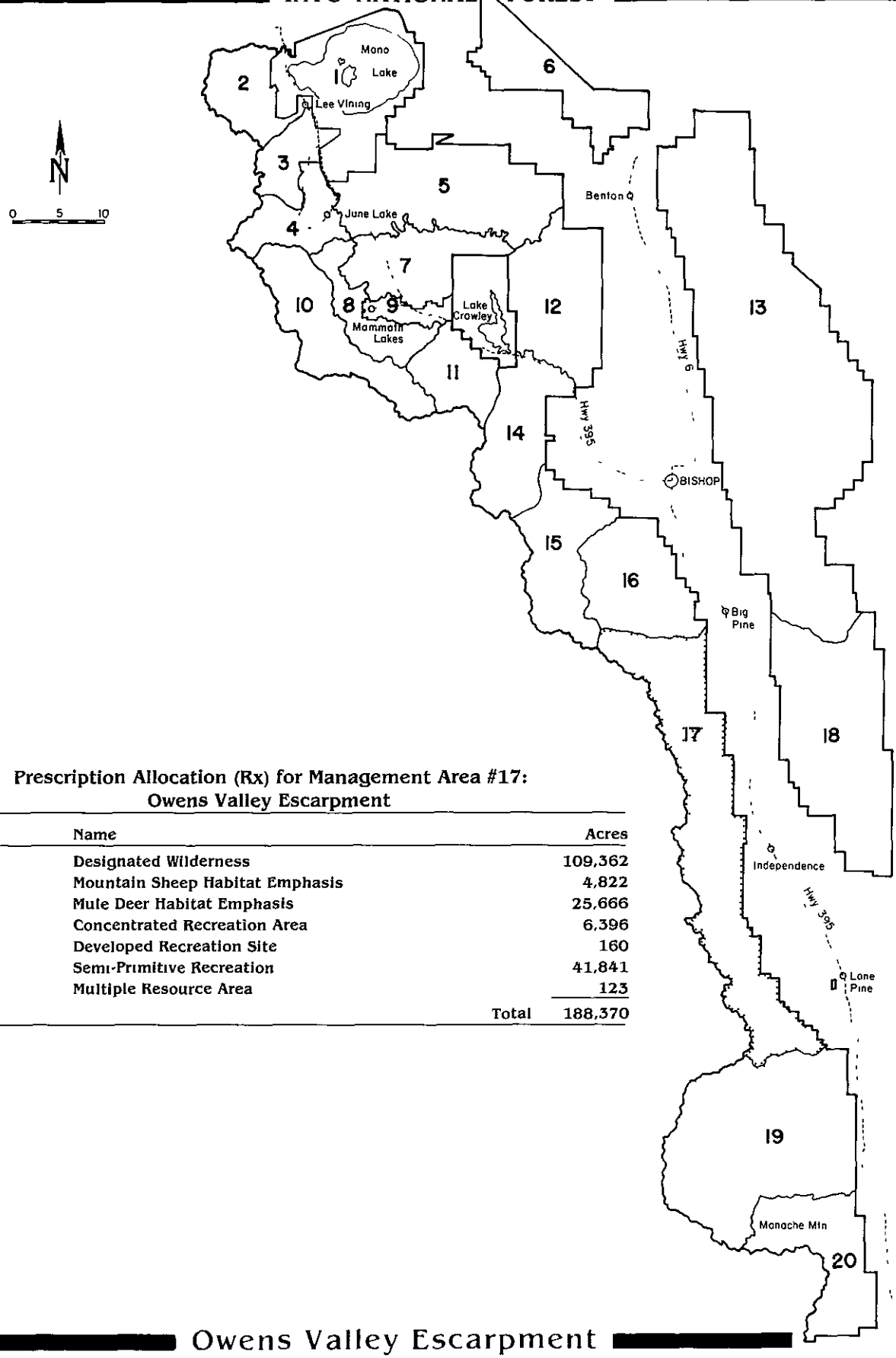
Recreation

- Emphasize Semi-Primitive Non-Motorized and Semi-Primitive Motorized activities and opportunities in the area in Prescription #17 (Coyote-Baker Creek). Develop a composite plan to include OHV opportunities, mountain bike and equestrian trails, locations of ROS classes, and limited overnight camping facilities to maintain a quality level of use with minimal resource damage.

Water

- Manage Coyote Creek watershed above the Plant Four community water supply intake with all the precautions needed to ensure that water is provided at a quality level consistent and compatible with State Basin Plan objectives for domestic supply.

INYO NATIONAL FOREST

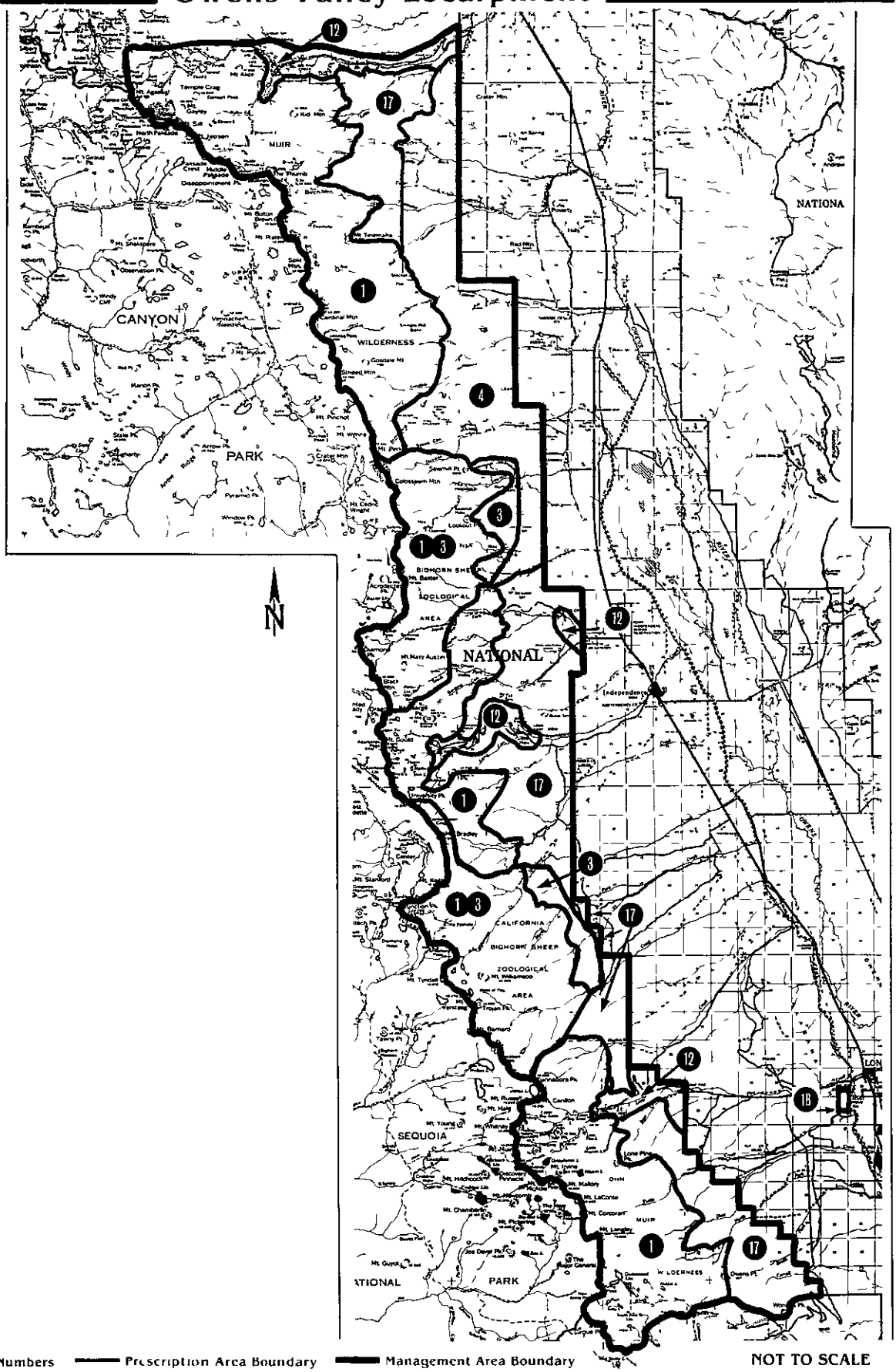


Prescription Allocation (Rx) for Management Area #17: Owens Valley Escarpment

Number	Name	Acres
Rx 1	Designated Wilderness	109,362
Rx 3	Mountain Sheep Habitat Emphasis	4,822
Rx 4	Mule Deer Habitat Emphasis	25,666
Rx 12	Concentrated Recreation Area	6,396
Rx 15	Developed Recreation Site	160
Rx 17	Semi-Primitive Recreation	41,841
Rx 18	Multiple Resource Area	123
	Total	188,370

Owens Valley Escarpment

Owens Valley Escarpment



Prescription Numbers — Prescription Area Boundary — Management Area Boundary

NOT TO SCALE

Owens Valley Escarpment (#17)

Description

The Owens Valley Escarpment Management Area extends from Big Pine Creek on the north to Wonoga Peak on the south. A large portion of the John Muir Wilderness is within the Management Area boundary. All of the area is within Inyo County. Prominent features are the Eastern Sierra Nevada Escarpment with its many peaks over 13,000 feet in elevation, and Mt. Whitney, the highest mountain in the contiguous United States. Several isolated parcels of private land inholdings occur at the lower elevations below the wilderness boundary.

The area is comprised of steep to precipitous rugged terrain in the canyons and moderate to gentle slopes on the alluvial fans and benches. Elevations range from 5,000 feet to 14,495 feet at the summit of Mt. Whitney. All of the drainage flows eastward into Owens Valley and is finally absorbed into the Los Angeles Aqueduct system.

Vegetation ranges from subalpine conifer forest with foxtail, limber, and whitebark pines in the higher elevations to juniper, pinyon pine, and the semidesert communities of sagebrush, shadscale, blackbrush, and bitterbrush in the lower elevations.

Riparian areas contain a mixture of water birch and willow with scattered pockets of black oak. The vegetative makeup provides key winter forage for deer, tule elk, and mountain sheep.

Five domestic cattle grazing allotments provide spring and early summer forage for local ranches.

Concentrated recreation use exists in Big Pine Creek, Oak Creek, Independence Creek, and Lone Pine Creek. Dispersed recreation use includes fishing, hunting, and hiking throughout the Management Area. Major trailheads that access the Wilderness are located in Big Pine Creek, and at Onion Valley and Whitney Portal.

From U.S. 395 the entire Management Area presents the scenic backdrop known as the "Sierra Escarpment."

This Management Area contains habitats important for the Mt. Baxter, Mt. Williamson and Mt. Langley mountain sheep populations, and includes the California Mountain Sheep Zoological Area. Lower portions of the Management Area are also important as winter range for the Goodale and Monache deer herds.

Taboose Creek is a potential site for reintroduction of Sierra Nevada mountain sheep.

Management Area Direction

Facilities

- Coordinate with Inyo County to minimize the vegetative disturbance on roadsides in the area in Prescription #12.

Fish

- Manage Tinemaha Creek watershed at and above the meadow reach to provide for recovery of Lahontan cutthroat trout as directed in the approved recovery plan.

Lands

- Maintain the 120-acre isolated parcel of National Forest System land in Sections 29 and 32, Township 15 South, Range 36 East for land exchange or Forest Service administrative use.

Range

- Allow no increases in grazing where this would significantly degrade fish or wildlife habitat. Amend AMPs to include mitigation measures and take corrective action where grazing is significantly impacting wildlife habitat.

Recreation

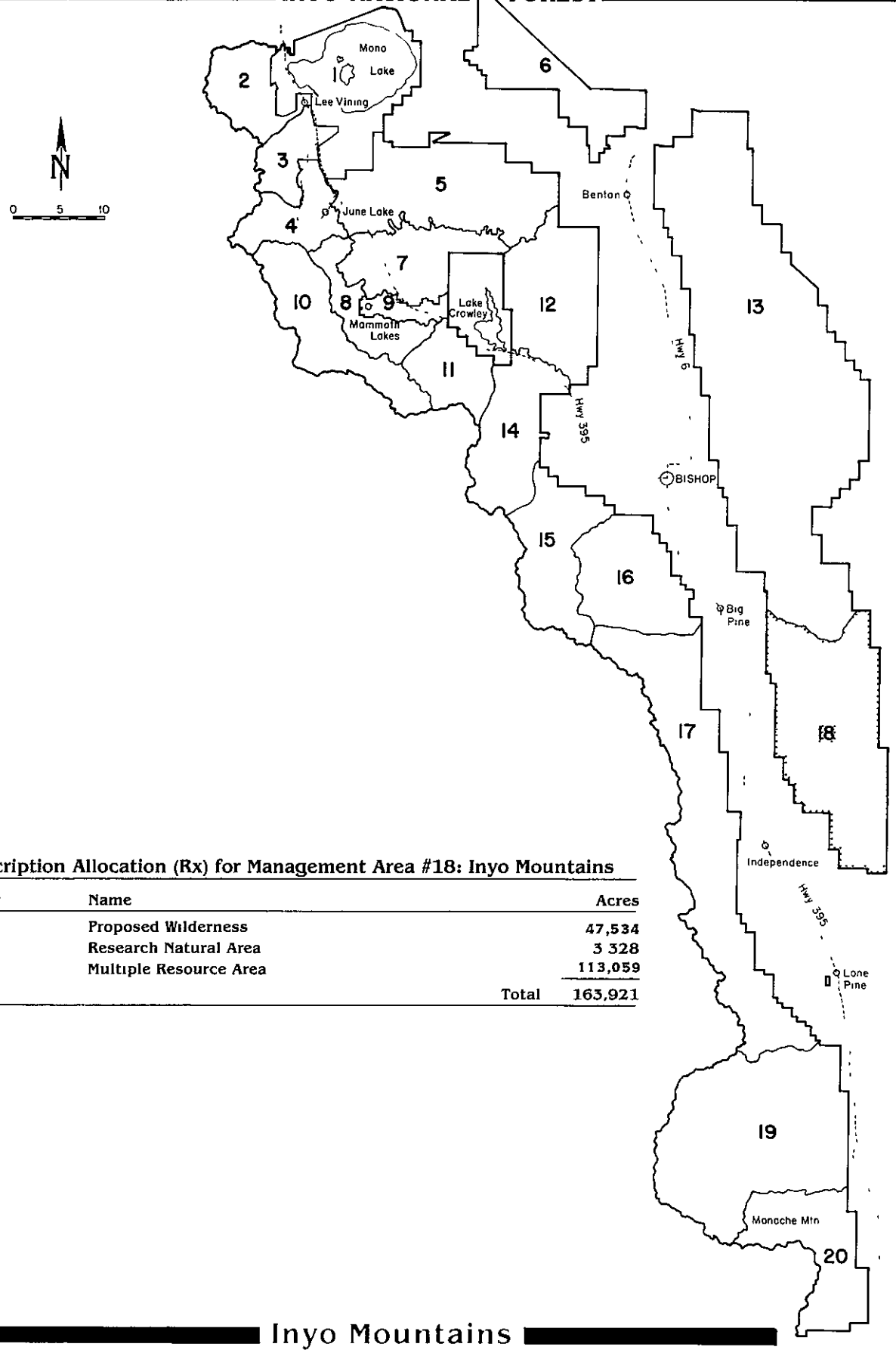
- Develop all overnight and day-use opportunities in the area in Prescription #12 (Big Pine, Independence, and Lone Pine Creek drainages).

- Develop a trail from Sage Flat Campground to Glacier Lodge in Big Pine Canyon for dispersed recreation.

Water

- Manage Big Pine Creek watershed above the Sage Flat and Big Pine community water supply intakes, Independence Creek watershed above the Seven Pines and Grey's Meadow Summer Home Tracts community water supply intakes, and the Lone Pine Creek watershed above the Forest boundary with all the precautions needed to ensure that water is provided at a quality level consistent and compatible with State Basin Plan objectives for domestic supply.

INYO NATIONAL FOREST

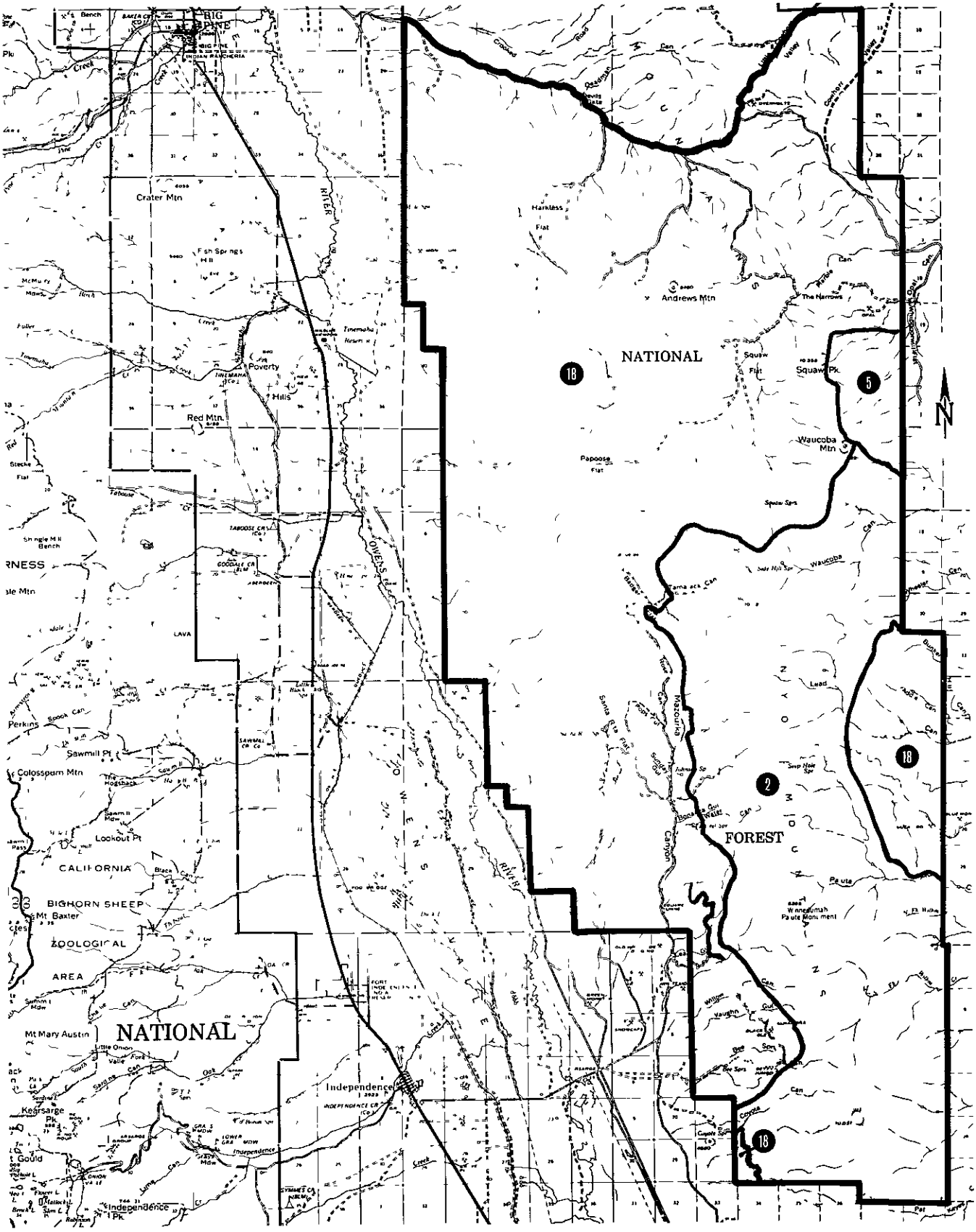


Prescription Allocation (Rx) for Management Area #18: Inyo Mountains

Number	Name	Acres
Rx 2	Proposed Wilderness	47,534
Rx 5	Research Natural Area	3 328
Rx 18	Multiple Resource Area	113,059
	Total	163,921

Inyo Mountains

Inyo Mountains



10 Prescription Numbers — Prescription Area Boundary — Management Area Boundary

NOT TO SCALE

Inyo Mountains (#18)

Description

The Inyo Mountains Management Area consists of a large, rugged mountain range located approximately eight miles east of Independence, California. The range runs north and south with slopes from the summit facing both Owens Valley and Saline Valley. Prominent features are Waucoba Mountain and Squaw Peak. The entire area is within Inyo County. There are no private land inholdings.

Both the east and west slopes of the mountain range are extremely steep and rugged. Lack of water is one of the most notable characteristics; there are no perennial streams. Elevations range from a low of 3,700 feet about five miles northeast of Independence to 11,123 feet on Waucoba Mountain.

Vegetation is typically semi-desert with sagebrush in the lower elevations giving way to pinyon pine in the higher elevations. A scattering of bristlecone and limber pine exists above 9,500 feet.

The Winnedumah Paiute Monument located in the southern part of the Management Area northeast of Independence is a striking monolithic landmark visible from Owens Valley.

Parts of the area are highly mineralized, and unpatented mining claim activity is prevalent, although no major production is evident.

The Saline Valley burro herd ranges in the foothills of the Inyo Mountains along the eastern boundary of the Management Area from Whippoorwill Flat south to the South Fork of Willow Creek.

There are two grazing allotments, one under permit and one vacant because of the lack of water.

Recreational activity is limited to dispersed camping, and no developed sites are proposed. A Research Natural Area for pinyon pine is proposed on the northeast slopes of Waucoba Mountain near Whippoorwill Flat.

Three surveys since 1981 in the southeastern portion of the Management Area have indicated a population of about thirty Nelson mountain sheep.

A portion of this area is being recommended for wilderness. The Paiute Roadless Area was evaluated in the RARE II process as having a high degree of natural appearance with unique features and many opportunities for solitude. There are few recreational opportunities because of rugged terrain, lack of access and little water.

Management Area Direction

Facilities

- Place the Waucoba, Papoose, Squaw Flat and Badger Flat roads on the Forest Road System to be maintained at Level 2 (low-level maintenance).

Facilities

- Participate with the Bureau of Land Management in the study of existing and potential powerline corridors. Include in this study the need for additional north-south utility lines paralleling the existing Oregon-Sylmar HVDC transmission line and for new east-west corridor locations.

Range

- Allow no increases in grazing where this would significantly degrade fish or wildlife habitat. Amend AMPs to include mitigation measures and take corrective action where grazing is significantly impacting wildlife habitat.

Wilderness

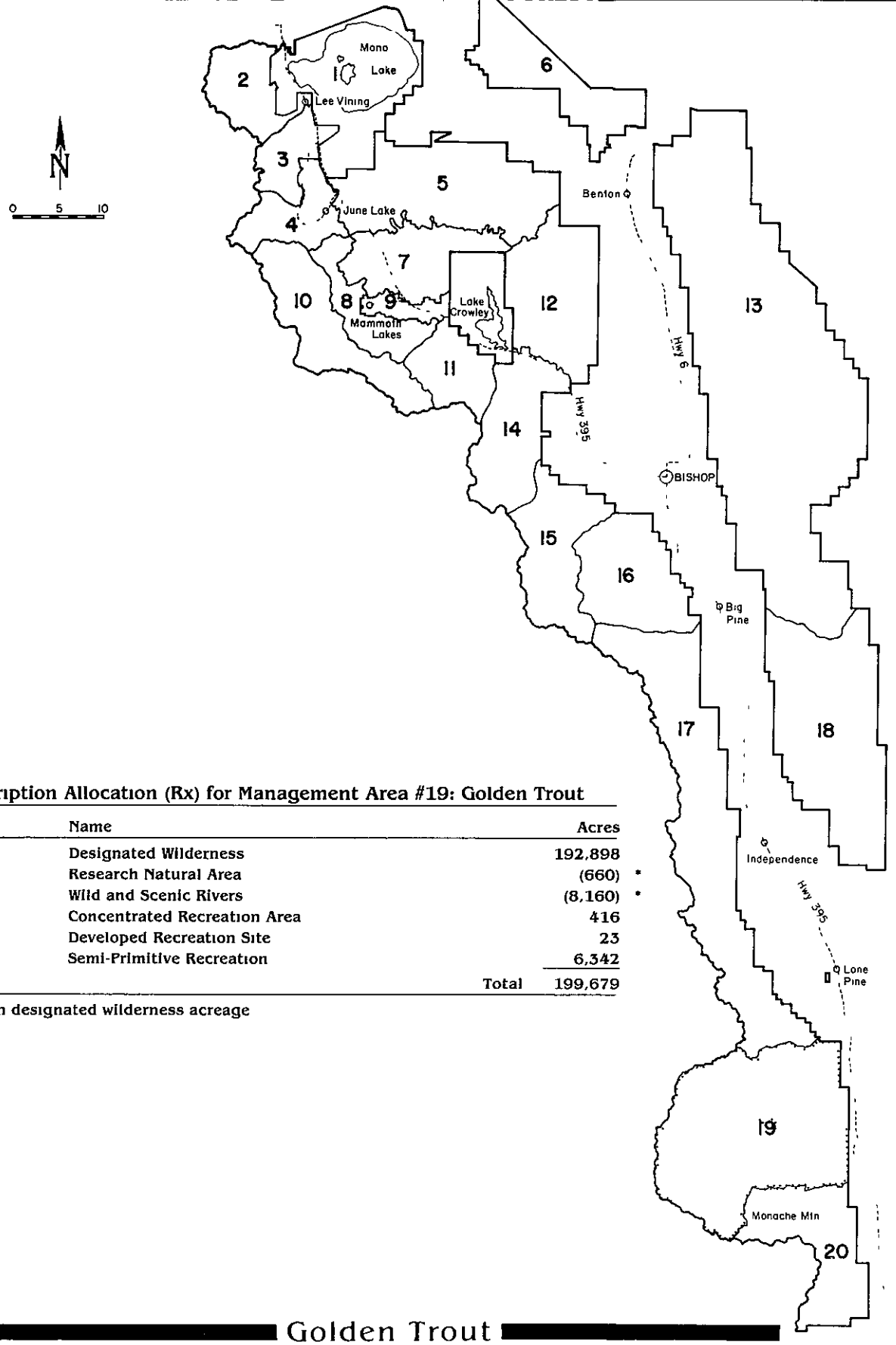
- Recommend 47,942 acres in the southeast corner of the Paiute-Mazourka Further Planning area for wilderness designation. This recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President of the United States. Final decisions on wilderness designation are made by Congress. After designation by Congress a wilderness management plan will be developed for the area.

Wildlife

- Prohibit overnight camping within 1/4 mile of spring water sources that are necessary for wildlife survival.

- Protect, maintain or develop water sources within the area for wildlife and vegetative diversity.

INYO NATIONAL FOREST



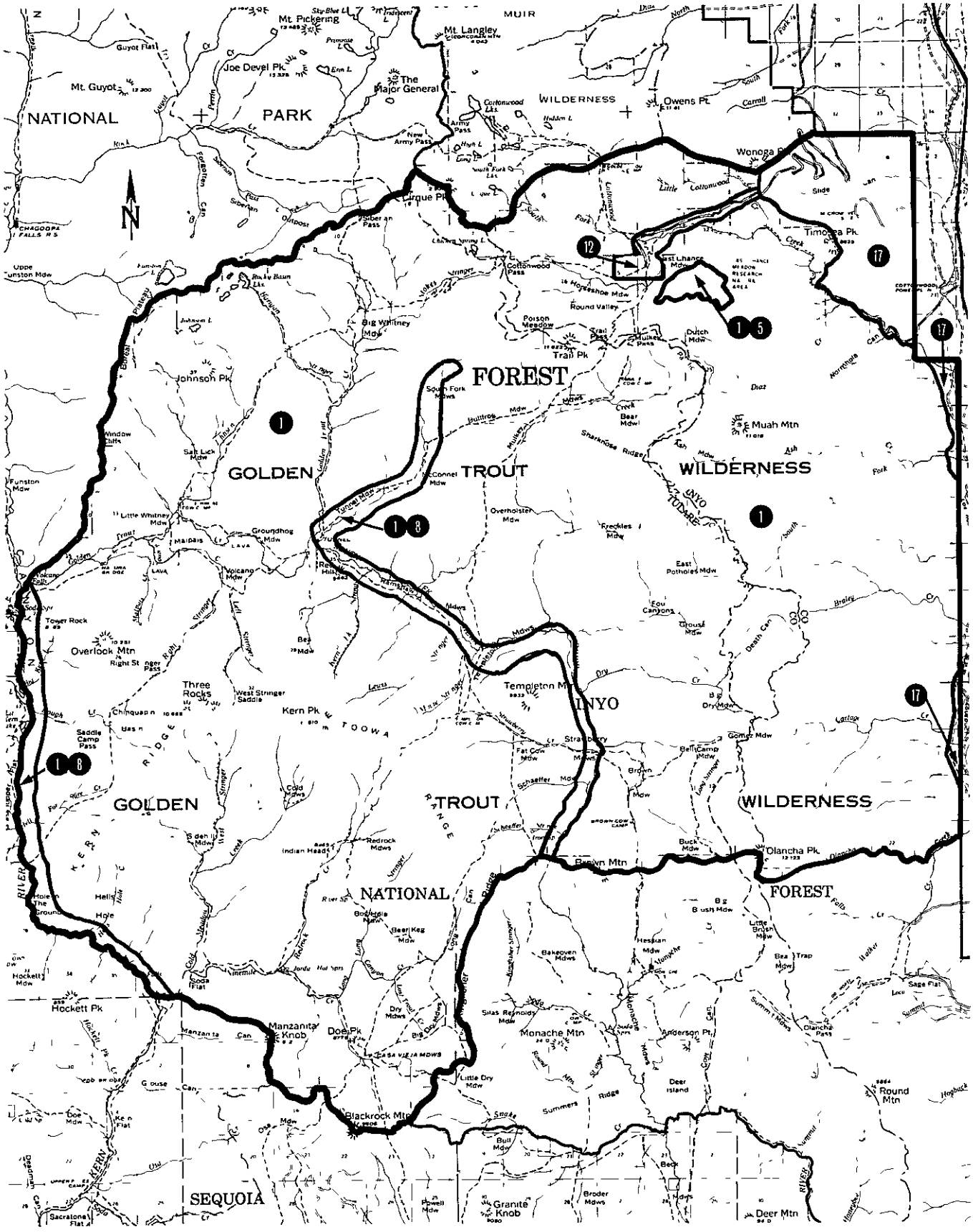
Prescription Allocation (Rx) for Management Area #19: Golden Trout

Number	Name	Acres
Rx 1	Designated Wilderness	192,898
Rx 5	Research Natural Area	(660) *
Rx 8	Wild and Scenic Rivers	(8,160) *
Rx 12	Concentrated Recreation Area	416
Rx 15	Developed Recreation Site	23
Rx 17	Semi-Primitive Recreation	6,342
	Total	199,679

*Included in designated wilderness acreage

Golden Trout

Golden Trout



Golden Trout (#19)

Description

The Golden Trout Management Area corresponds to the boundaries of the Golden Trout Wilderness on the Inyo National Forest and includes the Horseshoe Meadow enclave along with a corner of National Forest land outside the wilderness northeast of Timosea Peak. Prominent features are Wonoga, Cirque, Trail, Kern, and Olancha Peaks, Templeton Mountain, Golden Trout Creek, headwaters of the South Fork of the Kern River, and the North Fork of the Kern River gorge. Several isolated parcels of private land inholdings remain in the wilderness, and the City of Los Angeles owns some land in the Horseshoe Meadow enclave.

Topography is typical of the upper Kern Plateau country. Located mostly west of the Sierra Escarpment, the terrain is not so sharply defined, but is rolling and punctuated with evidence of volcanic activity (e.g., Templeton Mountain is a cinder cone), granitic peaks and outcrops, and many high-country meadows. Elevations range from 3,700 feet on the eastern boundary of the Management Area to 12,900 feet at Cirque Peak.

Vegetation is quite diverse. Ponderosa pine and Jeffrey pine dominate the lower montane coniferous forest below 6,500 feet. The upper montane coniferous forest is found between 6,000 and 10,000 feet and is comprised of three communities: the mixed conifer (white fir-sugar pine-incense cedar) forest, the red fir forest, and the mountain juniper woodland. The subalpine forests are dominated by lodgepole pine. Western white pine and limber pine are restricted to isolated pockets within the lodgepole pine forest. Foxtail pine is is found on the Kern Plateau and extends north to Onion Valley. The next population of this tree species lies over 300 miles north in the Klamath Mountains. This disjunct distribution is unique among subalpine tree species. Foxtail pine, which is closely related to bristlecone pine, also attains great age.

The chapparal community covers dry, rocky slopes usually where the conifers are absent. Common species of the chaparral communities are buckbrush, whitethorn, manzanita, mountain mahogany, antelope bush, and squaw currant. A large mountain meadow community of grasses, sedges, rushes, and forbs is important to deer, livestock, and pack stock. Alpine fellfields including perennial herbs forming cushions or mats, are found above timberline. East of the Sierra crest, the following four plant communities are present: pinyon-juniper, sagebrush scrub, shadscale scrub, and creosote bush.

The Golden Trout Wilderness is unique in being the native home of the golden trout, California's state fish.

All but a small portion of the Management Area is occupied by six grazing allotments for cattle.

Hiking, backpacking, and pack stock use are the primary dispersed recreation activities.

The Last Chance Meadow Research Natural Area supporting foxtail pine was established in 1982 and is located east of Horseshoe Meadow. The Management Area contains the headwaters and 20 miles of the South Fork of the Kern River,

and 11 miles of the North Fork of the Kern River. Both of these have been designated as Wild and Scenic Rivers.

This Management Area is the focus of intensified watershed restoration activities. Efforts were begun in 1933 to restore damaged stream channels. Since that time, approximately 800 erosion control structures have been installed, protecting about 500 acres of meadowland from gullying and accelerated erosion.

The area contributes significantly to both the summer and winter needs of the Monache deer herd.

Olancha Canyon has the potential as a site for Sierra Nevada mountain sheep transplant pending an environmental analysis.

Management Area Direction

Fish

- Strive to attain high quality habitat as defined in the Habitat Capability Model for all golden trout streams. Manage the habitat as the best that can be achieved given the incised conditions of stream channels as defined by quantitative methodologies such as GAWS, COWFISH, etc.

- Work with the Los Angeles Department of Water and Power to maintain a continuous water flow for fisheries in Cottonwood Creek below the penstock diversion.

Range

- Permit cattle entry on or about June 25, but make every effort to avoid encroachment on known fawning areas through mitigating measures shown in individual grazing allotment plans.

- Allow no increases in grazing where this would significantly degrade fish or wildlife habitat. Amend allotment plans to include needed mitigating measures and take corrective action where grazing is significantly impacting wildlife habitat.

Recreation

- In cooperation with the City of Los Angeles, close all roadside zones below the 320-acre trailhead area to off-road parking and use except for designated vista points or interpretive sites. Coordinate the closure with the development of a camping facility at the Horseshoe Meadow Trailhead.

Visual

- Continue to mitigate the negative visual impact created by Horseshoe Meadow Road with soil stabilization structures and vegetative measures.

Water

- Maintain existing meadows to arrest further degradation before initiating total watershed restoration projects.

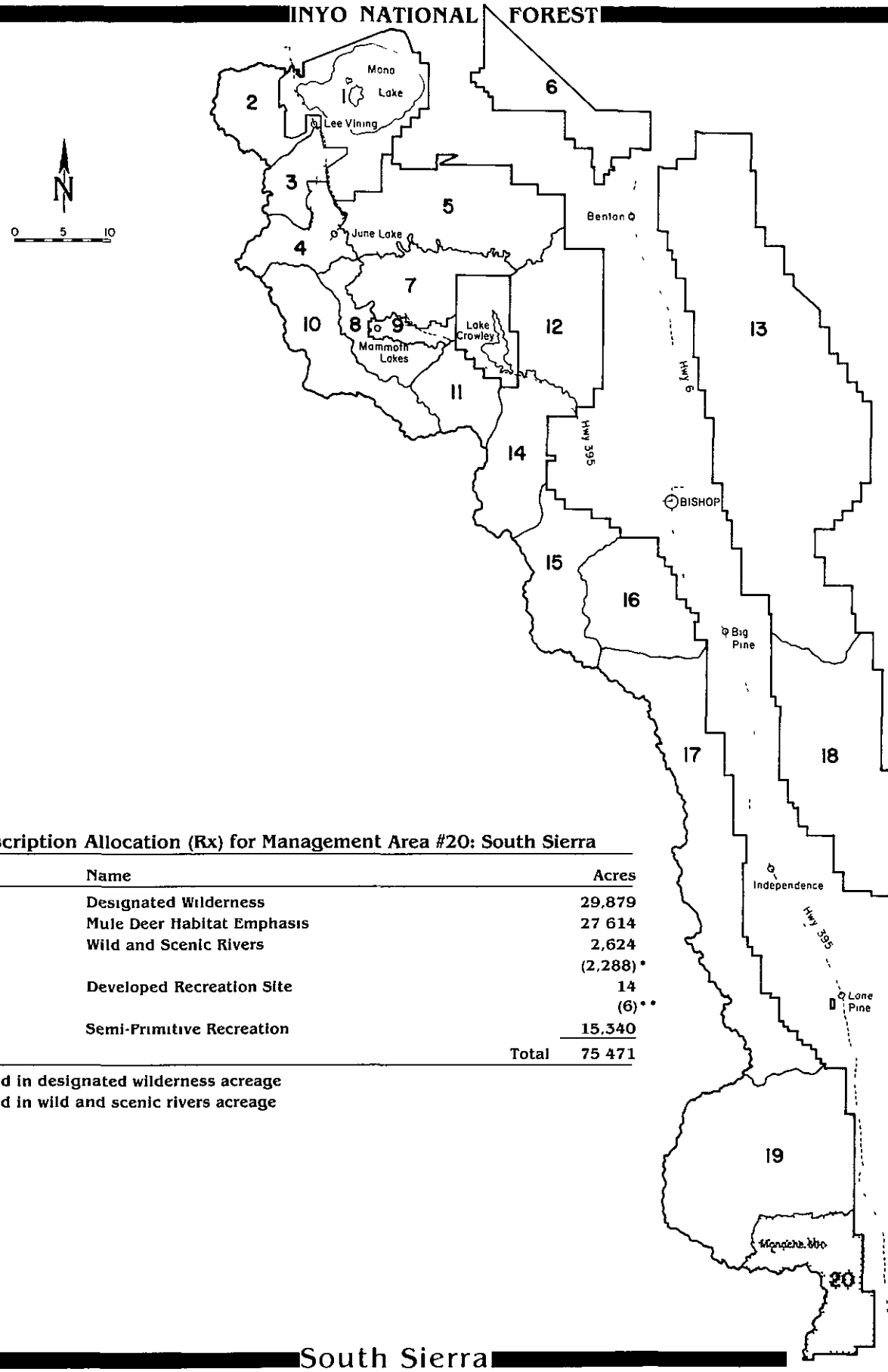
- Place watershed restoration priorities in areas where sediment reduction, fish habitat, and visual resources would receive the most benefit.

- Negotiate with public utility entities to return water to portions of Cottonwood Creek.

Wild and Scenic Rivers

- Manage the South Fork of the Kern and the North Fork of the Kern Wild and Scenic Rivers in accordance with final legislation. Prepare a river management plan for each designated river including final classifications and boundary descriptions.

INYO NATIONAL FOREST



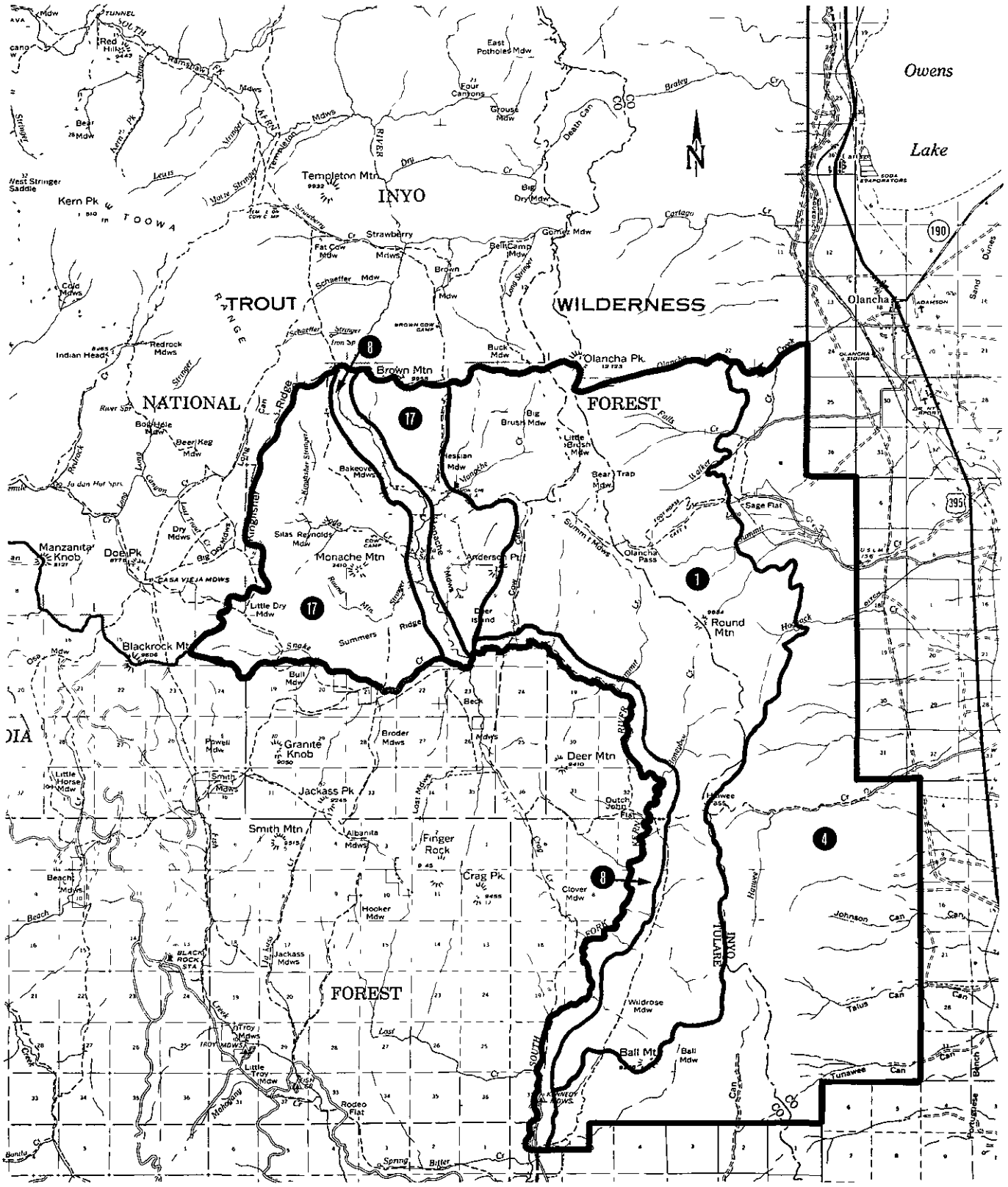
Prescription Allocation (Rx) for Management Area #20: South Sierra

Number	Name	Acres
Rx 1	Designated Wilderness	29,879
Rx 4	Mule Deer Habitat Emphasis	27 614
Rx 8	Wild and Scenic Rivers	2,624
		(2,288)*
Rx 15	Developed Recreation Site	14
		(6)**
Rx 17	Semi-Primitive Recreation	15,340
	Total	75 471

*Included in designated wilderness acreage
**Included in wild and scenic rivers acreage

South Sierra

South Sierra



10 Prescription Numbers — Prescription Area Boundary — Management Area Boundary

NOT TO SCALE

South Sierra (#20)

Description

The South Sierra Management Area is the southern extreme of the Inyo National Forest and is bounded on the north and west by the Golden Trout Wilderness. The south boundary adjoins the Sequoia National Forest. The area contains a little more than one half of the South Sierra Wilderness.

The county line running north and south between Inyo and Tulare Counties divides the area. Prominent features are Olancha Peak, Monache Mountain, Brown Mountain, the Sierra Escarpment, and broad, high-country meadows. Isolated parcels of private land inholdings occur at Bakeoven and Monache Meadows, and at Sage Flat.

Topography rises sharply from the Owens Valley to the Eastern Sierra Escarpment where it assumes more moderate slopes and rolling terrain westerly to large centrally located meadows. Monache Mountain is a cinder cone - dramatic evidence of volcanic activity. Elevations range from 4,240 feet in Owens Valley where Olancha Creek leaves the Forest boundary, to 12,123 feet at Olancha Peak.

Vegetation in the western portion of the area is characterized by old-growth ponderosa and Jeffrey pine and red fir on Kingfisher Ridge, lodgepole pine on the low flats, and sedge in the meadows. In the middle portion, containing part of the South Sierra Wilderness, vegetation is typically upper montane coniferous forest between 8,000 and 10,000 feet elevation. Eastward from the Sierra Escarpment isolated pockets of Jeffrey pine and white fir occur in the Haiwee Pass-Bald Mountain vicinity. These stands are not considered for commercial harvest due to their isolation. Pinyon pine on the upper slopes merges into semi-desert chaparral with greasewood and sagebrush on the lower slopes.

Industry has expressed considerable interest in the geothermal potential of the western portion of the Management Area.

Portions of three grazing allotments for cattle utilize the upper meadows and the lower slopes fronting Owens Valley.

Recreation opportunities consist of hiking and backpacking in the wilderness portion and off-highway use and cycling activities in the Monache Meadows area. No developed recreation facilities exist, but dispersed uses such as hunting, fishing, and camping are popular. In the Olancha Creek vicinity, activities are limited to hunting and a small amount of fishing.

The South Fork of the Kern River which transects the Management Area has been designated as a Wild and Scenic River.

The Monache Meadows portion of the Management Area is key to the Monache deer herd as a spring-fall holding range. Lower elevations fronting Owens Valley provide deer winter range. Several migration routes occur within the Management Area. Monache Meadow is also a critical, high-quality fawning area.

Management Area Direction

Range

- Permit cattle entry on or about June 25, but make every effort to avoid encroachment on known fawning areas through mitigating measures shown in individual grazing allotment plans.

- Allow no increases in grazing where this would significantly degrade fish or wildlife habitat. Amend AMPs to include mitigation measures and take corrective action where grazing is significantly impacting wildlife habitat.

Recreation

- Refer to the Monache OHV Environmental Assessment for management direction for OHV use in this area. This assessment also determines any increased road mileage in the area and takes precedence over any restrictions defined in Prescription #17.

- Emphasize dispersed recreation in Monache Meadows by limiting developed facilities.

- Restrict access to Monache Meadows by off-highway vehicles.

Wild and Scenic Rivers

- Manage the South Fork of the Kern Wild and Scenic River in accordance with final legislation. Prepare a river management plan for the river that includes classifications and boundary descriptions.

Wildlife

- Maintain the integrity of major migration corridors, fawning habitats and staging areas for mule deer.

CHAPTER V

Rocky Rockwell

Monitoring and Evaluation

CHAPTER V. Monitoring and Evaluation

Forest planning is a dynamic process that does not end with publication of the Plan. Monitoring and evaluation activities provide information to help determine whether or not Inyo National Forest programs are meeting the Plan's objectives. It is through this process that corrections and adjustments are made in management activities, the degree of implementation is assessed, and the need for change is determined.

Monitoring and evaluation are separate, sequential activities. Monitoring consists of collecting information from selected sources to measure the effects of Forest Service activities. This information will indicate whether programs are consistent with the objectives and costs projected in the Plan and whether they are adhering to the Plan's Standards and Guidelines and responding to the public's and management's expressed concerns.

In the evaluation stage, information obtained in monitoring is compared with Plan requirements. When differences are noted, their significance will be evaluated. The Plan can be amended at any time if monitoring results indicate that it is needed. An amendment would require an environmental analysis to determine whether the amendment represents a significant change from the Plan. If the proposed change from the Plan is significant, preparation of an Environmental Impact Statement and formal public involvement are required. If not, the kind of public involvement and the decision documentation that is needed will be determined by the type and magnitude of the proposed change.

The purpose of the Monitoring Plan is to assess the success of Plan implementation and determine whether the Plan needs to be amended or whether management activities need to be revised.

Monitoring Process

Results of monitoring and evaluation will be reported periodically as displayed in the Monitoring Plan Tables. Data sources for the monitoring plan include:

1. Management Reviews. General Management Review, Program Review and Activity Review.

2. *Ongoing Inventories and Monitoring Programs.* Soil productivity monitoring, water quality monitoring, forest inventory plots for timber, range utilization inventories, threatened and endangered species monitoring, etc.

3. Management Attainment Reports. Target accomplishment reports filed by Forest Supervisor's Staff and District Rangers three times per year and forwarded to the Regional Forester.

The Monitoring Plan is designed to monitor implementation of the Plan. It is not intended to replace ongoing detailed, resource specific monitoring. Results of the detailed current monitoring efforts will also be used to evaluate Plan implementation.

Monitoring will be performed by appropriate individuals throughout the Forest as follows:

1. Forest Staff. Each Staff Officer is responsible for preparing a more detailed resource monitoring plan for his/her respective function, with assistance from the District Rangers; providing technical advice and support in implementing the Monitoring Plan; periodically reviewing activities to ensure implementation of monitoring plans; and assembling the monitoring results at the close of each Fiscal Year.

2. District Rangers. Each District Ranger is responsible for assisting the Forest Staff Officers in preparing more detailed monitoring plans for each resource; monitoring the annual work plans of resource specialists reporting to him/her; ensuring that monitoring is carried out according to the plans, and submitting the results of monitoring to the appropriate Staff Officer.

3. Land Management Planning Staff Officer. At the close of each Fiscal Year, the Land Management Planning Staff Officer will incorporate all monitoring information, evaluate the results with the Forest Staff, and formally report findings and recommendations to the Forest Supervisor.

Evaluation Process

The Monitoring Evaluation Process displayed on the next page illustrates the steps necessary for an effective monitoring and evaluation plan. Based on the results of this process, need for further action is recommended to the Regional Forester.

Evaluation of the results of the site-specific monitoring program will be documented and available for public review. The significance of the results of the monitoring program will be analyzed by the Forest Supervisor. Based on the evaluation, there may be a need for further action. Management actions are a result of the monitoring and evaluation process can include:

1. No action needed. Monitoring indicates Plan Goals, Objectives, and Forest-wide Standards and Guidelines are achieved.

2. Refer recommended action to the appropriate line officer for improvement of application of Standards and Guidelines, Prescriptions, or Management Area Direction.

3. Modify portions of the Plan as a Plan Amendment.

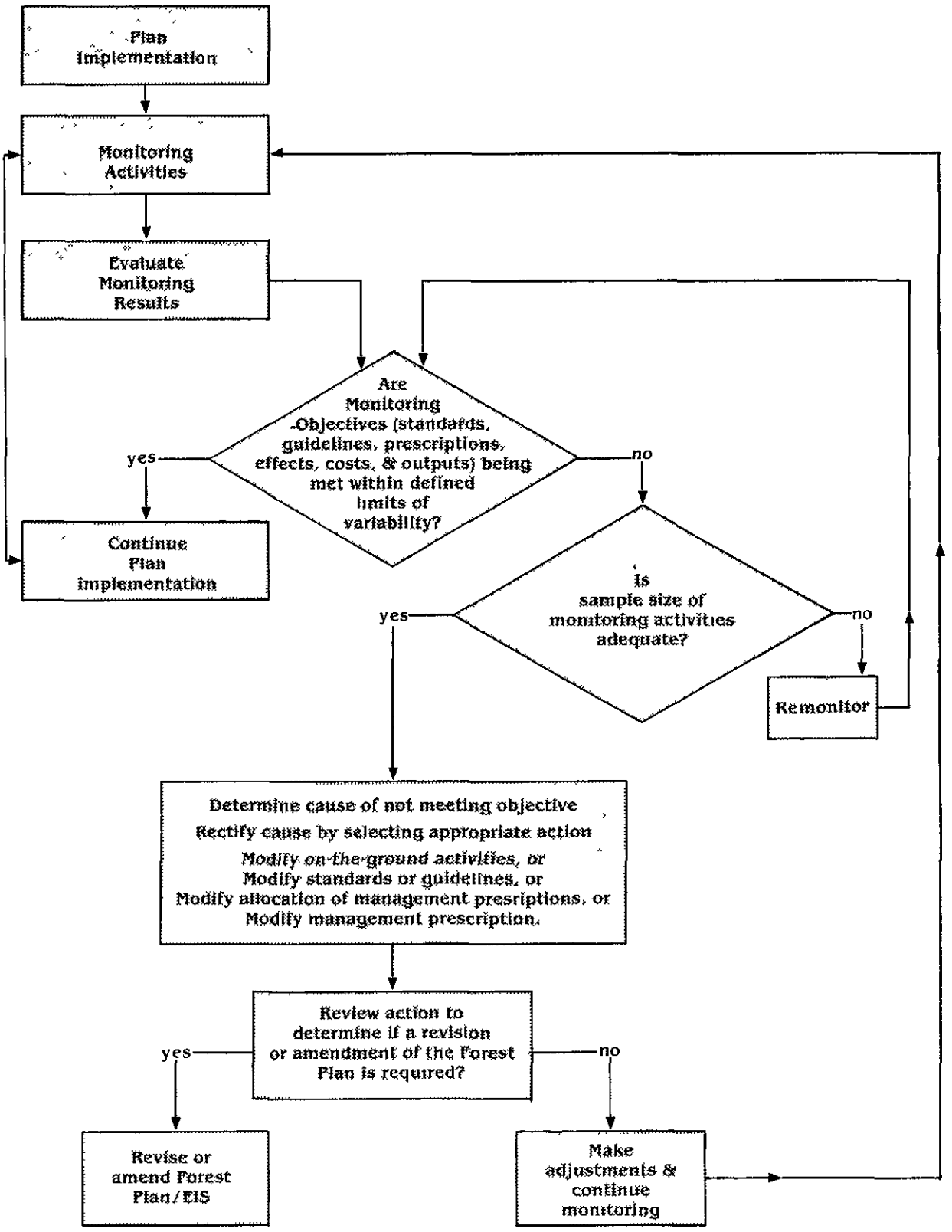
4. Modify Prescription boundaries as a Plan Amendment.

5. Revise the projected schedule of outputs.

6. Initiate revision of the Plan.

Plan modification and/or revision will be made in accordance with the National Environmental Policy Act and National Forest Management Act regulations. Resource activities, practices or effects to be monitored are displayed in this section.

Monitoring Evaluation Process



MONITORING PLAN BY RESOURCE

The following tables display how the management activities on the Forest will be monitored. This information will be used to evaluate Plan implementation. The tables contain the following columns:

1. Activity to be Measured.

2. Monitoring Objective.

3. Monitoring Technique. A description of how the data will be gathered.

4. Expected Precision and Validity. Precision is the exactness or accuracy of measurement techniques. Validity is the expected probability that information acquired through sampling will reflect actual conditions. Both precision and validity are quantitatively rated as either high, medium, or low according to whether the maximum measurement is within 10%, 33%, or 50% of the sample mean, respectively.

5. Frequency and Reporting Period. The minimum frequency for data gathering; the minimum period for reporting the data.

6. Standard of Comparison and Variation from the Standard Requiring Further Action. The anticipated result, level, or status of the action, effect, or resource to be monitored and the expected variation of observations in relation to the standard. When this limit is exceeded, the cause of the variation must be rectified or the monitoring process modified, as appropriate.

8. Average Annual Cost. The Forest's best estimate of the annual cost of monitoring. This is cost is in addition to the annual appropriated functional costs. If the costs are shown as zero, they are included in the annual appropriated functional costs.

Inyo National Forest Plan Implementation Monitoring Program

Activity to be Measured	Monitoring Objective	Monitoring Technique	Expected Precision/ Validity	Frequency/ Reporting Period	Standard of Comparison and Variation from Standard Requiring Further Action	Additional Annual Cost (*)
APPLIES TO ALL RESOURCE ELEMENTS (Responsible Official Forest Supervisor)						
Implementation of Management Direction and Management	Ensure compliance with Forest Plan direction	Sample project plan and Environmental Assessments for compliance	High	Ongoing/ Annually	Any deviation from Plan direction	$14,500
	(Responsible Official	Land Management Planning Staff Officer)				
Cost and Benefits of Implementing the Forest Plan	Validate predicted versus actual Plan Implementation costs	Analyze expenditure and allocation	High	Annually/ 5 years	10% difference between predicted and actual costs of Implementing the Forest Plan	U (**)
	Determine the economic effects of Plan Implementation	Review cost/ benefit comparisons in project records	Medium	5 years/ 5 years	33% variation from benefit/cost ratios predicted in Forest Plan	U (**)
Resource Output attainment	Compare actual vs predicted outputs	Attainment reports	High	Annually/ Annually	10% deviation from predicted outputs over a five year period	U (**)
AIR QUALITY	(Responsible Official	Watershed Staff Officer)				
Air Quality	Evaluate compliance with State and Federal Air Quality standards in designated Class I and Class II airsheds	Monitor AQRV indicators by photography, measurement, analysis, and recordation	Varies with Technique	Continuous Monitoring/ 5 years	California Air Resources Control Board standards Any deviation from designated federal and state standards	$ 5,000

Inyo National Forest Plan Implementation Monitoring Program

Activity to be Measured	Monitoring Objective	Monitoring Technique	Expected Precision/ Validity	Frequency/ Reporting Period	Standard of Comparison and Variation from Standard Requiring Further Action	Additional Annual Cost (*)
CULTURAL RESOURCES	(Responsible Official	Recreation Staff Officer)				
Mitigation and protective measures	Assess effectiveness of protective measures taken to achieve "no effect" status on cultural resources from land use projects and other resource management activities	On-site inspection photography, measurement, and recordation	Medium	Annually/ 5 years	Protective measures are effective on less than 90% of sites samples per year	$ 3,000
	Assess target to complete a total Culural Resource Inventory's by the year 2030	Monitor status of inventory	High	Annually/ Annually	10% deviation from target to inventory 40,000 acres per year	$ 500
	Determine the occurence and extent of vandalism effectiveness of cultural resources public awareness, interpretation, and enforcement programs	Signing sites, periodic on-site inspection, photography, measurement, and recordation	High High/Medium	Annually, or in response to reports of damage/ annually.	Standard is the pre-vandalized condition, as shown on site survey records or other documents	$ 6,000

Inyo National Forest Plan Implementation Monitoring Program

Activity to be Measured	Monitoring Objective	Monitoring Technique	Expected Precision/ Validity	Frequency/ Reporting Period	Standard of Comparison and Variation from Standard Requiring Further Action	Additional Annual Cost (*)
DIVERSITY	(Responsible Official	Wildlife Staff Officer)				
Vegetative Diversity	Ensure that the Forest-wide distribution of all successional stages meet Forest Service Guidelines & Prescriptions, that spatial and structural diversity is maintained in riparian areas, and that the prescribed quantity, quality and distribution of snags and down woody material is maintained	Compare existing and longterm minimum levels Sample range, recreation, timber and prescribed burn projects to determine the cumulative effects on successional stage, spatial and diversity	Low	5 years/ 10 years	20% change in the expected acreage of successional stages of major vegetation types as a result of forest management activities	$ 6,000
FISH	(Responsible Official	Wildlife Staff Officer)				
Threatened and Endangered Fish	Ensure compliance with recovery plan Forest-wide Standards and Guidelines	GAWS inventory of existing and potential habitats Population inventories coordinate with California Fish and Game for existing and reintroduced populations	Medium/High	3 years/ 3 years Project EAs, EISs, and reports	Existing population censuses, recovery plan criteria	$ 4,000

Inyo National Forest Plan Implementation Monitoring Program

Activity to be Measured	Monitoring Objective	Monitoring Technique	Expected Precision/ Validity	Frequency/ Reporting Period	Standard of Comparison and Variation from Standard Requiring Further Action	Additional Annual Cost (*)
FISH (CON'T)	(Responsible Official	Wildlife Staff Officer)				
Trout Streams	Monitor habitat condition of resident trout Ensure that the integrity and productivity of trout streams are *maintained or enhanced* through the protection of such trout habitat factors as streambanks stability, bank and stream cover, riparian vegetation, and channel bottom composition	Conduct stream surveys in cooperation with CDSG where possible Sample *project EAs and* conduct field project reviews	Medium	Project by project basis Annually, with 5 year trend evaluation	Activities that cause deviation from Forest Service Guidelines require an environmental analysis	$13,000
PEST MANAGEMENT	(Responsible Official	Forest Integrated Pest Management Coordinator, State and Private Forestry, and Forest Pest Management)				
Damage and Populations	Early detection and evaluation of pest related problems on commercial timber lands and other Forest lands	Aerial and ground surveys, surveillance, timber stands examinations and other resource-specific examinations	Medium	Annually/ As needed	Pest related damage levels must not interfere with the attainment of Management Goals and Objectives	U (*)

Inyo National Forest Plan Implementation Monitoring Program

Activity to be Measured	Monitoring Objective	Monitoring Technique	Expected Precision/ Validity	Frequency/ Reporting Period	Standard of Comparison and Variation from Standard Requiring Further Action	Additional Annual Cost (*)
PROTECTION	(Responsible Official	Fire Management Staff Officer)				
Fire Suppression	Validate predictions of acres burned by wild-fire for next Forest Plan update	From fire report compare actual acres burned with predictive tables	High	5 years/ 10 years	Variation - 50% between actual and predicted acres burned within a Management Area	U (*)
RANGE	(Responsible Official	Range Staff Officer)				
Range Utilization	Ensure proper level of forage utilization in riparian areas and meadows and others AOP compliance	Conduct sample field surveys	Medium	Annually/ 5 years	15% deviation from standards as expressed in allotment management plans or Range Management Handbook	$56,000
Range Forage Improvement	Determine effectiveness of browse release pro-jects	Conduct field surveys follow-ing browse re-lease projects	Medium	Annually/ 5 years	50% deviation from predicted results	$ 500 per project
Range Condition and Trend	Determine the effects of grazing levels on the range resource Update AMPs as per Manual and Plan	Permanent and paced transects	Medium	5 years/ 5 years	Downward trend in soils or vegetation on range allotments	$38,000
Wild Horse and Burro	Determine effectiveness of wild horse manage-ment	Monitor wild horse numbers & sex ratios and vegetative con-diton of habitat	High	Annually/ 10 years	Downward trend in soils or vegetation Decline in wildlife or wild horse conditions	$14,000

Inyo National Forest Plan Implementation Monitoring Program

Activity to be Measured	Monitoring Objective	Monitoring Technique	Expected Precision/ Validity	Frequency/ Reporting Period	Standard of Comparison and Variation from Standard Requiring Further Action	Additional Annual Cost (*)
RECREATION	(Responsible Official	Recreation Staff Officer)				
Recreation Use	Determine total recreation use check coefficients by ROS class	RIM system and other sampling techniques	Medium	Annually/ 5 years	10% variation between actual and predicted RVDs by ROS class	$ 7,000
OHV use on land and other Resources	Determine if adverse effects on natural resources are occurring or likely to occur	Photograph and/ or field measurement	Medium	Annually/ 3 years	25% deviation from standard prescribed in the OHV monitoring plan	$10,000
RIPARIAN	(Responsible Official.	Watershed Staff Officer)				
Protection and Diversity	Ensure that management prescriptions and Forest Service Guidelines adequately protect meadows and riparian areas and their associated values Ensure that spatial and structural vegetative diversity is maintained in riparian areas	Field surveys	Medium	5 years/ 10 years	Activities that cause deviation from Forest Service Guidelines require an environmental analysis	$ 1,000
Protection and Mitigation	Determine whether mitigation measures for small hydro projects & geothermal development are sufficient & effective in maintaining riparian vegetation & other riparian dependent resources	Field review of applied mitigation measures	Medium	5 years/ 10 years	20% deviation from Forest Service Guidelines	$ 5,000 Per Project

Inyo National Forest Plan Implementation Monitoring Program

Activity to be Measured	Monitoring Objective	Monitoring Technique	Expected Precision/ Validity	Frequency/ Reporting Period	Standard of Comparison and Variation from Standard Requiring Further Action	Additional Annual Cost (*)
SENSITIVE PLANTS	(Responsible Official	Wildlife Staff Officer)				
Sensitive Plant Species Habitat	Detect changes in key populations of each species and assess impacts on selected populations of occupied habitats Identify key populations that will be used for monitoring purposes	Population trend censuses, Baseline and past-project surveys for imput into EAs Use applicable techniques identified in Interim or Species Management Guides	High/High	Annually/ Annually for specific projects 3-5 Years/ 3-5 Years or according to Interim or Existing Management Guides	Forest Standards & Guidelines, Species Management Guides. Sensitive Plant Handbook/No new impacts to plant populations that do not have species management plan, unless recommended by the Forest Supervisor	$12,000
TIMBER	(Responsible Official	Timber Management Officer)				
Reforestation	Determination of success of regeneration practices	Described in FSH 2470 Includes sampling of species, survival, planting stock and density	High	1st & 3rd growing season after reforestation and maintained until fully certified as established/ 5 years	Described in FSH 2470 A trend in either mortality or growth inhibiting factors that indicated minimum stantards will not be met at some future time	$ 5,000
Suitability for Timber Production	Determine if lands classed as not suited for timber production are suitable	Project evaluation and timber inventory	High	Annually for projects examined & at least every 10 years for all lands	Lands identified as unsuited for any reason are determined suited and are 10% of current suitable lands	U (*)

Inyo National Forest Plan Implementation Monitoring Program

Activity to be Measured	Monitoring Objective	Monitoring Technique	Expected Precision/ Validity	Frequency/ Reporting Period	Standard of Comparison and Variation from Standard Requiring Further Action	Additional Annual Cost (*)
TIMBER (CON'T)	(Responsible Official·	Timber Management Officer)				
Annual Programmed Sale Quantity Acres and Volume Offered and Harvested by Prescription and Forest Type	Ensure implemenatation of the timber sale programmed is consistent with the Plan	Management Reviews Programmed Harvest Statement Timber Sale EAs	High	Annually/ 10 years	30% of acres and 10% of allowable sale quantity volume for a decade, by prescription, or by forest type	$ 1,000
VISUAL RESOURCES	(Responsible Official	Recreation Staff Officer)				
Visual Condition of Forest	Determine if VQOs are being met as per Plan	Field reviews & photo points	High	Annually/ 10 years	VQO and EVC as defined in FSM 2380 5% failure to achieve the planned VQO on total projects	$ 2,000
Trend of Visual Character	Determine if desired character stated in plan is being approached or maintained	Field reviews with landscape control point photo method	High	5 years/ 5 years	Plan and PSW-91 of 1973 Indication of trend away from the stated goal	$ 2,500
Visual Resource Improvement	Determine if an active program of visual resource improvement is being carried out	Field reviews and photo point	Medium	Annually/ Annually	Plan and Planning records and FSM 2380 Less than 50% accomplishment of visual resource improvement projects in any year	$ 500
WATERSHED: SOILS AND WATER	(Responsible Official	Watershed Staff Officer)				
Soil Productivity	Verfiy adequacy of Prescriptions, Standard and Guidelines in maintaining and improving soil productivity	Observations & measurements, and validate the use of BMPs in project activity	Medium	Annually/ 5 years	Improvement and maintenance measures 90% successful, 90% of prescribed BMPs are implemented	$14,000

Inyo National Forest Plan Implementation Monitoring Program

Activity to be Measured	Monitoring Objective	Monitoring Technique	Expected Precision/ Validity	Frequency/ Reporting Period	Standard of Comparison and Variation from Standard Requiring Further Action	Additional Annual Cost (*)
WATERSHED: SOILS AND WATER (CON'T)		(Responsible Official	Watershed Staff Officer)			
Water Quality Management	Assess compliance with BMP direction, and to continue to evaluate the effectiveness of BMP	Review of prepared EAs, review of contract provisions, field activity reviews, water quality analysis field observations	High	Ongoing as part of EA and contract review process, and as field trips are taken Annual activity review	Implementing documents for three projects are found to be missing needed water quality mitigation measures Water quality objectives violated Two field reviews identify mitigation measures are not being implemented	$12,000
Watershed Improvement	Evaluate effectiveness of watershed improvement measures	Observations and measurements	Medium	Annually/ 5 years	80% survival rate of project over a 10 year period	$ 5,000
WILDLIFE	(Responsible Official	Wildlife Staff Officer)				
Goshawk	Ensure project compliance with Forest-wide Standards and Guideline Determine population & habitat trends	Survey all known nest sites within areas managed for timber annually Survey 50% of known nest sites outside of areas managed for timber annually	Medium	Annually/ Annually Specific project EAs or reports	Forest-wide Standards and Guidelines and habitat capability models	$ 3,000

Inyo National Forest Plan Implementation Monitoring Program

Activity to be Measured	Monitoring Objective	Monitoring Technique	Expected Precision/ Validity	Frequency/ Reporting Period	Standard of Comparison and Variation from Standard Requiring Further Action	Additional Annual Cost (*)
WILDLIFE (CON'T)	(Responsible Official	Wildlife Staff Officer)				
Mule Deer	Insure compliance with California Fish & Game Deer herd management plans, Forest-wide Standards and Guidelines, Management Area Direction	Coordinate compliance counts with California Fish and Game, evaluate habitat for specific proposed project	Medium	Annually/ Annually Specific EAs and reports	Previous census information, Forest-wide Standards and Guide lines, Management Area Direction state deer herd plans, deviation from standards of these documents +/- 10% change in population levels over 5 years	$ 8,000
Peregrine Falcon Recovery	Verify nesting and reproductive success of peregrine falcons Implement recovery plan Two nesting pairs	Field surveys of historic nest areas and high potential nest sites	Medium/ High	Annually/ Annually	Establishment of two nestings pairs Comparison of sightings from year to year No active site in 5 years or decline in sightings over 5 years	$ 2,000
Sierra Nevada and Nelson Mountain Sheep	Insure compliance with Forest-wide Standards & Guidelines, and recovery plans	Conduct herd composition counts with California Fish and Game, of existing populations, will be inventoried every other year	Medium/ High	Annually/ 2 years	Recovery plan objectives, Forest-wide Standards and Guide lines, previous censuses, +/- 10% change in population levels over a 5 year period or or deviation from above documents	$ 8,000
Winter Bald Eagle Habitats	Implement recovery plan Evaluate trends of habitats delineated to to meet recovery goals Determine trend of winter populations	Survey known winter areas,survey capability of of delineated habitats for specific proposed projects	Medium/ High Winter areas High/High Specific projects	Annually/ Annually Specific EAs or reports	Forest-wide Standards and local recovery plans, and Habitat Capability Models and Forest-wide Standards and Guidelines, deviation from the above or +/- 25% change in population levels	$ 2,000

Inyo National Forest Plan Implementation Monitoring Program

Activity to be Measured	Monitoring Objective	Monitoring Technique	Expected Precision/ Validity	Frequency/ Reporting Period	Standard of Comparison and Variation from Standard Requiring Further Action	Additional Annual Cost (*)
WILDLIFE (CON'T)	(Responsible Official	Wildlife Staff Officer)				
Other State listed or sensitive species as afffected by specific projects Sierra Nevada red fox, pine marten, fisher wolverines, and spotted owl, great gray owl	Ensure protection provided by Forest-wide Standards and Guideline and Habitat Capability Models	Appropriate survey methods Application and development of Habitat Capability to delineate habitats on project areas	Medium	Project Basis/ Project Basis	Past population surveys, Habitat Capability Models, Forest-wide Standards and Guidelines, or lowers habitat capability for species	$ 8,000
Threatened Endangered and Sensitive Species *Management*	Ensure that management activities afford protection of all Threatened Endangered and Sensitive species as prescribed in Plan	Sample EAs and conduct field surveys of completed project	Medium	Annually/ Annually	Any detectable decline in population	$ 4,000
Trends of Habitat Capability for Management Indicator	To ensure that habitat capability trends for MIS are consistent with Plan direction.	Field surveys and office review of projects to determine habitat capability for MIS	Medium	Annually/ 5 years	20% variation in expected change in habitat capability, or habitat capability is 10% above viable levels	$ 6,000

Inyo National Forest Plan Implementation Monitoring Program

Activity to be Measured	Monitoring Objective	Monitoring Technique	Expected Precision/ Validity	Frequency/ Reporting Period	Standard of Comparison and Variation from Standard Requiring Further Action	Additional Annual Cost (*)
WILDLIFE (CON'T)	(Responsible Official	Wildlife Staff Officer)				
Quantity and Distribution of Snags and Downed Logs	Ensure minimum quanity, quality, and distribution of snags, dead and down woody material	Review EAs and conduct field surveys of completed projects; monitor MIS group	Medium	Annually/ 5 years	Any detectable decline in snags and downed logs from shown in Forest-wide Standards and Guidelines	$ 2,000
Relationship between MIS and Represented species	To validate that maintenance of MIS habitat capability maintains habitat for the species they represent	Field survey to determine if represented species are present	Medium	Annually/ 5 years	70% of species represented are present	$ 6,000
WILDERNESS	(Responsible Official	Recreation Staff Officer)				
Actual Use Compared to Planned (established) Desired Conditions	Measure changes and compare with limits of acceptable change and evaluate associated environmental effects	Remeasure campsite condition class, record changes according to FSM2323 1 R-5 supp #145	Medium	Annually/ 5 years	Any decline in campsite condition Class below Class III	$20,000

VI. GLOSSARY

A

AMB: The Forest Plan Alternative which emphasizes wildlife habitat with a secondary emphasis on expansion of developed recreation.

AMC: This is a Forest Plan Alternative which has been eliminated. It recommends all Further Planning Areas for wilderness designation.

AMN: See Amenities Alternative.

AMP: See Allotment Management Plan.

AMS: See Analysis of the Management Situation.

AOP: See Annual Operating Plan.

APCD: Air Pollution Control District.

AQRVs: See Air Quality Related Values.

ASQ: See Allowable Sale Quantity.

AUM: See Animal Unit Month.

Acre-foot: The amount of water or sediment that would cover one acre to a depth of one foot (43,560 cubic feet; 326,000 gallons).

Administrative Cost: Costs of required general administration which are prorated over fixed, variable, and investment costs.

Administrative Facilities: Those facilities, such as ranger stations, work centers, and cabins, which are used by the Forest Service in managing the National Forest.

Age Class: One of the intervals, usually 10 to 20 years, into which the age range of vegetation is divided for classification or use.

Air Quality Related Values (AQRVs): A feature or property of an area that is affected in some way by air pollution. Identified values are visibility, odor, flora, fauna, soil, water, geologic feature, and cultural resources.

Allotment: See Range Allotment.

Allotment Management Plan (AMP): A cooperative plan between the Forest Service and the range permittee which sets forth the agreed upon management scheme for the allotment. Besides grazing activities, the plan can cover other resources, such as soil, wildlife, fisheries, and riparian areas.

Allowable Sale Quantity (ASQ): The maximum quantity of timber that may be sold from land capable, available, and suitable for timber production for a time period; usually expressed on an average annual basis.

Alluvial Fan: A geologic feature consisting of rock and soil deposited by running water at the base of a steep slope in the shape of an inverted cone.

Amenity (Amenity Value): A resource for which monetary market values have not been (or cannot be) established; also called a non-priced value.

Amenities Alternative (AMN): The Forest Plan Alternative which maximizes amenities with little regard for the effects on commodity outputs. Wilderness, wildlife, and primitive and semi-primitive dispersed recreation are emphasized.

Analysis of the Management Situation (AMS): A step in the Forest planning process in which the Forest's ability to supply goods and services in response to society's demand for those goods and services is determined.

Animal Unit Month (AUM): The amount of forage required to support a mature cow for one month. (Region 5 uses 1000 lbs./month or 26 lbs./day.)

Annual Operating Plan (AOP): The cooperative plan between the Forest Service and the grazing permittee which sets forth the agreed upon management of the allotment on a seasonal basis.

Arterial Roads: See Roads.

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 by consumers. In Forest planning the term assigned values 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.

B

BACTs: See Best Available Control Techniques.

BLM: Bureau of Land Management, U.S. Department of Interior.

BMPs: See Best Management Practices.

BSS: See Base Sale Schedule.

Background Level (Background, Natural Background): The ever-present environmental conditions or effects above which a phenomenon must manifest itself in order to be detected.

Base Sale Schedule (BSS): The timber sale schedule in which 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. This planned sale and harvest for any decade must not be not greater than the long-term sustained yield capacity of the land.

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: The total value of an output or other outcome.

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 the present time. (Also see Discounting.)

Best Available Control Techniques (BACTs): An emission limitation for air quality subject to the regulations of the Clean Air Act.

Best Management Practices (BMPs): Management actions that are designed to maintain water quality by preventive rather than corrective means.

Bitterbrush: A species of shrub considered palatable and nutritious for both mule deer and domestic livestock.

Board Foot: The amount of wood contained in an unfinished board one inch thick, twelve inches long, and twelve inches wide.

C

CAS: Capable, Available and Suitable land for timber production.

CDF: California Department of Forestry.

CDFG: California Department of Fish and Game.

CEE: See Cost-Efficiency Alternative.

CEQ: See Council on Environmental Quality.

CEQA: See California Environmental Quality Act.

CFR: Code of Federal Regulations. Detailed documentation of federal laws.

CMAI: See Culmination of Mean Annual Increment.

CNDDB: California Native Diversity Data Base.

CNPS: California Native Plant Society.

COWFISH: A computer model designed to analyze the condition of riparian areas in relation to past and current livestock grazing management and to estimate the compatibility of grazing with associated aquatic resources.

CRP: See Coordinated Resource Planning.

CUR: See Current Program.

Caldera: A bowl-shaped geologic feature representing the collapse of a volcanic mountain after an eruption.

California Environmental Quality Act (CEQA): Following the passage of NEPA, the California State Legislature passed an Act in 1970 to declare state policy which will ensure the long-term protection of the environment. The Act will encourage the development and maintenance of a high quality environment now and in the future; provide the people of California with clean air and water, enjoyment of aesthetic, natural, scenic, and historic environmental qualities, and freedom from pollution; and prevent the elimination of fish or wildlife species due to man's activities.

Canopy: The more or less continuous cover of leaves and branches collectively formed by the crowns of adjacent trees in a shrub stand or forest.

Capability: The potential of the land to produce resources and supply goods and services under a set of management practices and at a given level of management intensity. Capability depends upon site conditions such as climate, soils, and geology, as well as the application of management practices such as siviculture.

Capital Investment: Investment in facilities such as roads and structures with specially appropriated funds.

Class I Properties: Archaeological or historic sites that have been determined eligible for or nominated to the National Register of Historic Places.

Class II Properties: Archaeological or historic sites that have not been evaluated against the eligibility criteria (36 CFR 604) for inclusion on the National Register of Historic Places.

Class III Properties: Archaeological or historic sites that have been found to be not eligible for inclusion on the National Register of Historic Places.

Clearcutting: Harvesting of all trees in one area for the purpose of creating a new, even-aged stand. The area harvested may be a patch, stand, or strip.

Collector Roads: See Roads.

Commercial Species: Tree species suitable for industrial wood products.

Commodity (Commodity Value): A resource product for which a monetary value has been established; also called a priced benefit.

Compartment: A unit of forested land, usually between 3,000 and 15,000 acres in size, defined by natural and manmade features and used to facilitate timber planning.

Concentrated Recreation Area: A land area that currently recieves, or could (if developed) potentially receive high-density recreation use.

Condition Class: Description of the existing forest in terms of size, stock density, and age.

Confinement: Restricting fire within determined boundaries established either prior to the fire, during the fire, or in an escaped fire situation analysis. The normal tactic is surveillance only.

Constraint: A limitation; action which cannot be taken or which must be taken.

Consumptive Use: Use of a resource that reduces the supply.

Containment: Surrounding a fire, and any spot fires therefrom, with control line, as needed, which can reasonably be expected to check the fire's spread under prevailing and predicted conditions. The normal tactic is indirect attack and burn to human-made or natural barrier with little or no mop-up.

Contingency Level: A priority setting and decision-making method which takes into account fire situation factors that may significantly affect national, Regional, or Forest fire situations or individual fire response actions.

Control: To complete the control line around a fire, any spot fires therefrom, and any interior islands to be saved, burn 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. The normal tactic is direct attack on the fire, if possible, and mop-up.

Coordinated Resource Planning (CRP): A process that involves all agencies, special interests or individuals concerned with the management of a specific project, resource or issue.

Corridor: A linear strip of land in which existing or planned transportation and utility facilities are or will be located.

Cost: The price paid or what is given up in order to acquire, produce, accomplish, or maintain anything. (See Economic Cost.)

Cost-Effective: Achieving a specified level of outputs under given conditions for the least cost.

Cost-Efficiency Alternative: This Forest Plan Alternative maximizes cost efficiency with a mix of land allocations and management practices available on the Inyo National Forest.

Cost-Efficiency: A measure of how productive an input is in producing outputs. Measured by Present Net Value (PNV) in Forest planning. (See Economic Efficiency.)

Council on Environmental Quality (CEQ): An advisory council to the President established by the National Environmental Policy Act of 1969. The CEQ reviews federal programs for their effect on the environment, conducts environmental studies, and advises the President on environmental matters.

Cover: Vegetation used by wildlife for protection from predators and weather conditions, especially during reproduction.

Cubic Foot: The amount of timber equivalent to a piece of wood measuring one foot by one foot by one foot (6.5 board feet on the Inyo National Forest).

Cubic Foot per Second (cfs): Unit measure of streamflow or discharge, equivalent to 449 gallons per minute or about two acre-feet per day.

Culmination of Mean Annual Increment (CMAI): The point where the average annual growth of a stand of timber no longer increases.

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 to sites, structures, buildings, districts, and objects associated with or representative of people, cultures, and human activities and events.

Current Program (CUR): The No Action Alternative. This Forest Plan Alternative represents the condition expected to exist in the future if current managemment direction continued unchanged.

D

DBH: See Diameter Breast Height.

DEIS: Draft Environmental Impact Statement. (See Environmental Impact Statement.)

DWP: City of Los Angeles, Department of Water and Power.

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.

Dependent Species: A species for which a habitat element (snags, vegetative type) is deemed essential for the species to occur regularly or to reproduce.

Developed Recreation Site: A relatively small, distinctly defined area where facilities are provided for concentrated public use (campgrounds, picnic areas).

Development Scale: A predetermined scale for recreation site development which guides the degree of site modification and kind of facilities to be installed as shown below:

Recreation Opportunity Spectrum Class	Development Scale	Levels of Site Modification
Primitive	1	Minimum site modification. Rustic or rudimentary improvements designed for protection of the site rather than comfort of the users. Use of synthetic materials excluded. Minimum controls are subtle. No obvious regimentation. Spacing informal and extended to minimize contacts between users. Motorized access not provided or permitted.
Semi-Primitive Motorized and Non-Motorized	2	Little site modification. Rustic or rudimentary improvements designed primarily for protection of the site rather than the comfort of the users. Use of synthetic materials avoided. Minimum controls are subtle. Little obvious regimentation. Spacing informal and extended to minimize contacts between users. Motorized access provided or permitted. Primary access over primitive roads. Interpretive services informal, almost subliminal.
Roaded Natural and Roaded Modified	3	Site modification moderate. Facilities about equal for protection of site and comfort of users. Contemporary and rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about 3 family units per acre. Primary access may be over high standard roads. Interpretive services informal, but generally direct.
Rural	4	Site heavily modified. Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials. Extensive use of artificial surfacing of of roads and trails. Vehicular traffic control usually obvious. Primary access usually over paved roads. Development density 3-5 family units per acre. Plant materials usually native. Interpretive services often formal or structured.
Urban	5	High degree of site modification. Facilities mostly designed for comfort and convenience of users and usually include flush toilets; may include showers, bathhouses, laundry facilities, and electrical hookups. Synthetic materials commonly used. Formal

walks or surfaced trails. Regimentation of users is obvious. Access usually by high-speed highways. Development density 5 or more family units per acre. Plant materials may be foreign to the environment. Formal interpretive services usually available. Designs formalized and architecture may be contemporary. Mowed lawns and clipped shrubs not unusual. This category applies to private lands.

Diameter Breast Height (DBH): The diameter of a tree measured 4.5 feet from the ground.

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.)

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 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 between benefits and costs occurring at different points in time.

Dispersed Recreation: Outdoor recreation which occurs outside of constructed and maintained recreational facilities (scenic driving, hunting, backpacking, nordic skiing).

District Ranger: The official responsible for administering the National Forest System Lands on a Ranger District.

Diversity: The distribution and abundance of different plant and animal communities and species within an area.

Diversity Index: A mathematical expression of the relative degree of wildlife habitat diversity per unit of area: $DI = \frac{TP}{2 / \overline{A \times pi}}$

where TP is the total perimeter of an area, plus any browsable edge within the area in meters or feet, A is the area in square meters or square feet, and pi is 3.1416.

E

EA: See Environmental Assessment.

EIC: See Ending Inventory Constraint.

EIS: See Environmental Impact Statement.

EPA: Environmental Protection Agency.

EPP: See Erosion Prevention Plan.

EVC: See Existing Visual Condition.

Economic Cost: Total fixed and variable costs for inputs, including costs incurred by other public and private parties, opportunity costs, and cost savings.

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.

Endangered Species: Plant or animal species identified by the Secretary of the Interior and listed in the Federal Register as in danger of extinction throughout all or a significant portion of its range.

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.

Environmental Analysis: An analysis of alternative actions and their predictable short- and long-term environmental consequences.

Environmental Assessment (EA): A concise public document required by the regulations implementing the National Environmental Policy Act that briefly provides sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.

Environmental Consequences (Effects or Impacts): The physical, biological, social, and economic results of implementing a given alternative.

Environmental Impact Statement (EIS): A statement of the environmental effects which would be expected to result from proposed alternative management actions.

Erosion: The detachment and movement of soil from the land surface by wind, water, or gravity.

Erosion Prevention Plan (EPP): An integrated erosion plan which states the Best Management Practices necessary to protect the soil and water resources on ski areas. The techniques, the scheduling of work, and the priorities for treatment are all addressed in the plan.

Escarpment: A steep land form characterized by a face abruptly terminating high lands.

Even-Aged Management: Management of forest stands that results in trees of essentially the same age growing together. The following methods produce even-aged stands:

Clearcutting: The removal, in a single cut, of all trees in a stand larger than seedlings.

Shelterwood Cutting: The removal of all trees in a series of two or more cuts over a period of not more than 20 years.

Seed Tree Cutting: Similar to clearcutting, except that a few of the better trees of the desired species are left scattered over the area to provide seed for regeneration.

Even-Aged Stand: A forest stand composed of trees having no or relatively small differences in age.

Existing Visual Condition (EVC): A description of the degree to which the natural landscape has already been altered.

F

FEIS: Final Environmental Impact Statement (See Environmental Impact Statement.)

FERC: Federal Energy Regulatory Commission.

FIL: See Fire Intensity Level.

FLPMA: Federal Land Policy and Management Act.

FLW: The benchmark which maximizes Present Net Value (PNV) for non-market resources.

FPA: Further Planning Area. (See Further Planning.)

FSH: Forest Service Handbook.

FSM: Forest Service Manual.

FVC: See Future Visual Condition.

FY: Fiscal Year--October 1 through September 30.

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.

Fire Intensity Level (FIL): A number on a scale of one to six (one being the lowest), which reflects the rate of heat release (BTU/second) per unit of fire front (in feet).

Fixed Cost: A cost committed for the planning period. In Forest planning, the total cost of the minimum level benchmark.

Forage: All browse and herbaceous plants that are available to feed livestock or wildlife.

Forb: Any herbaceous plant other than grasses or grass-like plants.

Foreground, Middleground, Background:

Foreground - the portions of a view between the observer and up to 1/4 or 1/2 mile distance.

Middleground (middle distance) - the space between the foreground and the background; the area located from 1/4-1/2 to 3-5 miles from the viewer.

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.

Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA): An Act of Congress requiring the preparation of an assessment of the nation's renewable resources and a program for their management. Forest planning is a part of this national planning process.

Forest Highways: A designated forest road under the jurisdiction of, and maintained by, a public authority that is subject to the Highway Safety Act. Forest Highways are designated, as such, where the use and development of National Forest System lands affect the public road system necessitates Federal investments to ensure these roads are safe and adequate.

Forest Supervisor: The official responsible for administering the National Forest System lands in a Forest Service administrative unit (one or more National Forests).

FORPLAN: A linear programming model used for developing and analyzing Forest planning alternatives.

Fuels: Any material capable of sustaining or carrying a forest fire, usually natural material both live and dead.

Fuelwood: Wood cut into short lengths for burning.

Further Planning: A category into which certain roadless areas on the Forest were placed by the RARE II study and in which they were retained by the California Wilderness Act of 1984. Recommendations for the management (wilderness or nonwilderness) of Further Planning Areas will be made in the Forest plan.

Future Visual Condition (FVC): Describes the projected appearance of the landscape (from natural to altered) under each alternative by the fifth decade.

G

GAWS: See General Aquatic Wildlife System.

Game Species: See Harvest Species.

General Aquatic Wildlife System: A combined aquatic data base and information system. It is the quantitative method used to inventory, monitor, describe, and predict fisheries habitat condition and vulnerability from existing to potential land uses.

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 may not have a specific date for completion.

Goods and Services: The various outputs, including onsite uses, produced by forest and rangeland renewable resources.

Grazing: Consumption of forage by animals; typically used to describe domestic livestock use (under permit) of National Forest land.

Grazing Allotment: See Range Allotment.

Grazing Permittee: See Range Permittee.

Groundwater: Subsurface water in the part of the ground that is wholly saturated.

Group Selection: The cutting method in which trees are removed periodically in small groups resulting in openings that do not exceed an acre or two in size. The result is an uneven-aged stand.

H

H2O: The benchmark which maximizes water yields for five decades.

HVDC: High Voltage Direct Current.

Habitat: The sum of environmental conditions of a specific place that is occupied by an organism, a population, or a community.

Habitat Capability Model: A set of habitat factors determined necessary to support a given wildlife species or group of species.

Hacking: A method of gradually releasing birds of prey into the wild.

Harvest Species: Species of animals or fish that are hunted or fished for human consumption.

Herbicide: A substance used to inhibit or destroy plant growth.

Holding Area: See Staging Area.

I

ID Team: See Interdisciplinary Team.

IPM: See Integrated Pest management.

Inputs: Land, labor, and capital required to produce outputs. Inputs are generally represented by activity costs.

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 wherein pests, their impacts, and management are considered an integral part of resource management planning and decision-making.

Intensity Level: See Fire Intensity Level.

Interdisciplinary Team (ID Team): A group of individuals with different training who solve a problem or perform 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 Streams: Streams that do not contain water year-round.

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.

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.

K

K-V Funds: Funds collected from timber sales under the Knutson-Vandenberg Act of 1930 to be used for reforestation, timber stand improvement, and to protect and improve the future productivity of renewable resources on timber sale areas.

KGRA: Known Geothermal Resource Area: On the Inyo, this term refers to the Mono-Long Valley KGRA located on the northern part of the Forest, north and east of Mammoth Lakes and south of Mono Lake.

Key Fawning Area: An area important for mule deer during the fawning season (early summer). It typically includes good vegetative cover to hide fawns from predators and protect them from severe weather.

Key Winter Range: An area important for mule deer during the winter months. It typically includes palatable and nutritious shrub species on lands mostly free of snow during the winter.

L

LBU: This Forest Plan Alternative was eliminated. It estimates the expected outputs and services that could be provided in the future if the 1982 budget were cut by 25%.

LTSYC: See Long-term Sustained Yield Capacity.

Landline Location: To locate, survey, mark, and post the boundaries of National Forest System lands.

Landownership Adjustment: The transfer of the ownership of lands by land exchange, land purchase, donations or other methods.

Lease Blocks I and II: Land units that have been leased for geothermal exploration and development; located north of Mammoth and south of June Lake, both east and west of Highway 395. (See map in Chapter III of the EIS under Minerals: Leasable.)

Lek: Sage grouse strutting grounds used during the mating season for courtship displays.

Lifestyle: The characteristic way people live, indicated by consumption patterns, work, leisure, expressed values, and other behavior.

Local Roads: See Roads.

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 intensity of management consistent with multiple-use objectives.

Low Standard Service: A level of recreation management (including maintenance and services) prescribed when recreation costs are reduced in an alternative.

M (MM): As a prefix to a unit of measure, M indicates thousand; MM indicates million. Common examples are:

MAUM - thousand animal unit months

MBF (MMBF) - thousand (million) board feet

MCF (MMCF) - thousand (million) cubic feet

MRVD (MMRVD) - thousand (million) recreation visitor days

M(MM)$ - thousand (million) dollars

M acres - thousand acres.

MA: See Management Area.

MBNFSA: Mono Basin National Forest Scenic Area.

MCWD: Mammoth County Water District.

MIS: See Management Indicator Species.

MIR: See Minimum Implementation Requirements.

MKT: A Forest Plan Alternative which was eliminated. It emphasized high level outputs of market resources.

MKV: The benchmark which maximizes Present Net Value (PNV) for market value resources.

MLV: The benchmark which emphasizes Minimum Level Management.

MMR: See Minimum Management Requirement.

Mammoth/June: The geographic area bounded by U.S. 395 on the east; State Route 203 on the south; the John Muir and Ansel Adams Wildernesses on the west; and the ridgeline of the June Lake complex on the north.

Management Area (MA): A contiguous area of land used in planning, to which one or more prescriptions are applied. Management areas do not vary between alternatives; however, the prescriptions applied to them do vary.

Management Concern: A management problem requiring resolution.

Management Direction: A statement of multiple use and other goals and objectives, the management prescriptions, and the associated standards and guidelines for attaining them.

Management Emphasis: The primary focus of a multiple-use management prescription or of an alternative.

Management Indicator Species (MIS): A wildlife species whose population and trend in a certain habitat type indicates the population and trend of other species that are also dependent on that habitat type.

Management Intensity: The management practice or combination of management practices and their associated costs designed to obtain different levels of goods and services.

Management Prescription: Management practices selected and scheduled for application on a specific area to attain multiple-use benefits and other goals and objectives.

Market Outputs: Outputs normally exchanged in markets as evidenced by transactions. Timber, range, developed recreation, and minerals are market outputs produced on the Inyo.

Maximum Modification (VQO): See Visual Quality Objectives.

Mean Annual Increment: The average yearly growth of a tree, calculated by dividing the volume of the tree by its age.

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.

Mineral Production: Extraction of 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.

Minerals, Leasable: Minerals which are developed (explored, mined, extracted, etc.) by a permit or lease, in contrast with mineral 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, and deposits of sulfur in Louisiana and New Mexico. Locatable minerals on acquired land are leasable.

Minerals, Locatable: Minerals on public domain lands which are mined and processed to recover intrinsically valuable substances such as gold and copper and 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. Developed through a claims location and patent process. Locatable minerals on acquired land are leasable.

Minerals, Salable: Minerals that occur in high-volume, low-unit-value deposits and have no distinct or special economic value over similar materials. Disposal is authorized through a sales system, by the Materials Act of 1947. Examples are sand, gravel, stone, and common clay.

Minimum Implementation Requirements (MIR): The management requirements which are necessary to ensure a minimum level of public acceptance.

Minimum Management Requirements (MMR): Constraints or activities necessary to maintain viable wildlife populations and to prevent permanent impairment of the productivity of the land.

Mining Claims: That portion of the public estate held for mining purposes in which the right of exclusive possession of locatable mineral deposits is vested in the locator of a deposit.

Mitigate: Actions to avoid, minimize, reduce, eliminate, or rectify the adverse impacts of a management practice.

Modification (VQO): See Visual Quality Objectives.

Monitoring and Evaluation: The periodic evaluation on a sample basis of management practices prescribed by the Forest plan, to determine how well objectives have been met, how closely management standards have been applied, and whether actual environmental consequences are similar to those predicted.

Multiple Use: The management of all 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.

N

NPB: See Net Public Benefit.

NEPA: See National Environmental Policy Act.

NFMA: See National Forest Management Act.

NFMAS: See National Fire Management Analysis System.

NFS: See National Forest System Land.

NON: The benchmark which maximizes Present Net Value (PNV) with a recommendation that no Further Planning Areas become wilderness.

NNL: National Natural Landmarks. (See National Registry of Natural Landmarks.)

NRT: See National Recreation Trail.

National Environmental Policy Act (NEPA): The 1969 Act of Congress that represents a basic national charter for protection of the environment.

National Fire Management Analysis System (NFMAS): A broad process to assist fire managers in fulfilling their planning and analysis roles. The system consists of: (1) Fire Management Analysis, and (2) Budget analysis.

National Forest Management Act (NFMA): A 1976 Act of Congress that amends the 1974 Forest and Rangeland Renewable Resources Planning Act (RPA). NFMA requires the preparation of Regional and Forest plans and guides their development.

National Forest System (NFS) Land: Lands administered by the U.S. Department of Agriculture, Forest Service.

National Recreation Trail (NRT): A trail designated by the Secretary of the Interior or the Secretary of Agriculture under the National Trails System Act. National recreation trails are designed to provide a variety of outdoor recreation uses in or reasonably accessible to urban areas.

National Register of Historic Places: A listing maintained by the U.S. Department of Interior, National Park Service of areas that have been designated as historically significant. The National Register includes places of local and state significance, as well as those of value to the nation in general.

National Registry of Natural Landmarks: A register of areas possessing such exceptional values or qualities for illustrating or interpreting the natural heritage of our nation that they are considered to be of national significance. Some examples are significant natural landforms, land or aquatic ecosystems, and geologic formations.

National Wild and Scenic River System: Rivers with outstanding scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values and 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 (1964) and subsequent wilderness designations irrespective of the department or agency having jurisdiction.

Net Public Benefit (NPB): The overall 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.

Nondeclining Yield: Timber scheduled for harvest so that any given decade's production does not fall below the previous decade's production.

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, water. Although not normally exchanged in markets, the Forest Service calculates and assigns monetary values to these outputs for analysis purposes.

O

OHV: See Off-Highway Vehicle.

OSV: See Over-Snow Vehicle.

Objective: A time-specific statement of measurable results that respond to pre-established goals.

Objective Function: A term used in linear programming referring to the item to be maximized (or minimized) in the problem's solution; such as maximize PNV, maximize timber.

Off-Highway Vehicle (OHV): Vehicles that can be operated off of constructed roads. Examples include 4-wheel drives, dune buggies, and some motorcycles.

Over-Snow Vehicle (OSV): Over-snow tracked or ski vehicle.

Older Seral Stages: Age classes of trees or shrubs that have passed the period of young, vigorous growth. Many wildlife species are dependent on the older seral stages of forested environments; these stages include large trees generally exceeding 50 feet in height with a total tree canopy of 40 percent or greater. Commercial timber stands are typically harvested before reaching older seral stages.

Opening: An area of land from which timber has been harvested (generally using even-aged management). The maximum size of openings is 5 to 40 acres for forest types on the Inyo. 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.

Outputs: Goods, services, or on-site uses produced from forest and rangeland resources.

Overstory: That portion of the trees in a forest which forms the upper or uppermost layer.

P

P: Primitive. (See Recreation Opportunity Spectrum.)

PAOT: See Persons-At-One-Time.

PILT: Payment in Lieu of Taxes.

PNV: See Present Net Value.

PRO: An Alternative which has been eliminated from the Forest Plan. This Alternative's objective was to determine the Forest's ability to meet timber targets from the Region's high-productivity Alternative.

PRF: See Preferred Alternative.

PSD: See Prevention of Significant Deterioration.

PSW: Pacific Southwest (Region 5 of the Forest Service)

Partial Retention (VQO): See Visual Quality Objectives.

Perennial Stream: A stream that flows throughout the year and from source to mouth.

Permittee: An individual or organization that conducts activities on National Forest land under the stipulations of a Forest Service permit. Examples of permitted activities are grazing, ski area operation, resort operation, and hydroelectric plant operation.

Persons-At-One-Time (PAOT): The unit of measure for recreation capacity defined as the number of people that can use a facility or area at one time.

Physiographic Province: A region having a particular pattern of relief features or land forms that differs significantly from that of adjacent regions. The Inyo National Forest lies in two physiographic provinces--the Sierra Nevada and the Great Basin.

Piagi: The larval or caterpillar stage of the Pandora moth during which time it defoliates Jeffrey pine trees by eating the needles. Piagi is one of the native foods of the Paiute/Shoshoni People.

Planning Period: One decade. The time interval within the planning horizon that is used to show incremental changes in yields, costs, effects, and benefits.

Planning Records: A system that documents data collections, analyses, interdisciplinary team decisions, and activities that result from the process of developing a Forest Plan, revision, or significant amendment.

Plantation: A stand of trees resulting from planting or artificially seeding an area.

Preferred Alternative (PRF): The Forest Plan Alternative which emphasizes a mixture of commodity and amenity resource outputs to optimize Net Public Benefit (NPB).

Prescribed Fire: Intentional use of fire under predetermined weather and fuel conditions to achieve specific objectives such as rejuvenating or type-converting vegetation.

Prescription (Rx): The set of management practices applied to a specific area to attain specific objectives. Region 5 distinguishes between FORPLAN prescriptions and management prescriptions. FORPLAN prescriptions are sets of "pure" management activities without spatial allocation or standards and guidelines. Management prescriptions are written as a result of allocating FORPLAN solutions to specific lands areas (Management Areas) and imposing standards and guidelines. (See also Management Areas.)

Present Net Value (PNV): The difference between the value of discounted benefits derived from all outputs to which monetary values or established market prices are assigned and the total discounted costs of managing the planning area.

Preservation (VQO): See Visual Quality Objectives.

Prevention of Significant Deterioration (PSD): A planning and management process of the Clean Air Act for allocation and use of air resources.

Productive Reserved: A category of land that is capable of producing commercial timber products but has been removed from the managed timber base by congressional or administrative designation (such as Wilderness or Research Natural Areas).

Public Issue: A subject or question of widespread public interest identified through public participation relating to management of National Forest System lands.

R

R: Rural. (See Recreation Opportunity Spectrum.)

RARE II: See Roadless Area Review and Evaluation II.

REA: Rural Electric Association.

RGN: The benchmark which maximizes domestic livestock grazing for five decades.

RIM: See Recreation Information Management.

RM: Roaded Modified. (See Recreation Opportunity Spectrum.)

RN: Roaded Natural. (See Recreation Opportunity Spectrum.)

RNA: See Research Natural Area.

ROS: See Recreation Opportunity Spectrum.

RPA: The Forest and Rangeland Renewable Resources Planning Act of 1974. Also refers to the national assessment and recommended program developed every five years to fulfill the requirements of the Act.

RPA Program: The national direction (under RPA) for long-range management of renewable resources on National Forest System lands. This direction serves as the basis for the Regional targets assigned to each Forest.

RVD: See Recreation Visitor Day.

Rx: See Prescription.

Range:

Primary range - includes areas which are readily accessible, have available water and will be used before livestock significantly graze other areas.

Secondary range - areas less preferred by livestock which will ordinarily not be grazed significantly until the primary range has been used.

Suitable - land that is or can be made accessible to livestock, that produces forage or has inherent forage-producing capabilities, and that can be grazed on a sustained yield basis under given management goals.

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 (such as trees) not suitable for livestock consumption.

Unsuitable - area that should not be grazed by livestock because of unstable soils, steep topography, or inherent low potential for forage production.

Range Allotment: An area designated for grazing a prescribed number and kind of livestock.

Range Permittee: An individual who has been granted written permission (a grazing permit) to graze livestock for a specific period on a range allotment.

Ranger District: An administrative unit of a National Forest supervised by a District Ranger who reports to the Forest Supervisor.

Rare Species: One that, although not presently threatened with extinction, is in such small numbers throughout its range that it may be endangered if its environment worsens; the "rare" category is a State category, not a federal one.

Reach: A continuous unbroken stretch of a stream with homogeneous characteristics; an extremity of a stream; a specified portion of a stream.

Recovery: The achievement of viable populations of threatened or endangered plant or animal species.

Recreation Experience Level: A classification (using a scale of 1 for primitive to 5 for modern) of the level of development in camp and picnic sites pertaining to the types of recreation opportunities and modifications in the environment that can be expected.

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 three miles or more from conventional (two-wheel drive) roads, generally 5,000 acres or more in size, with an essentially unmodified natural environment. Users will probably experience a high degree of isolation, closeness to nature, tranquility, and self-reliance.

b. Semi-Primitive Non-Motorized (SPNM) - An area more than 0.5 mile but less than 3 miles from conventional roads, 2,500 to 5,000 acres in size, with only subtle modifications of an otherwise natural setting. Users will have experiences similar in kind (but to a lower degree) to those found in the Primitive ROS class.

c. Semi-Primitive Motorized (SPM) - Same as Semi-Primitive Non-Motorized but with motorized use of primitive roads and trails. Users would have experiences similar to those in the SPNM class, with the addition of motor vehicles.

d. Roaded Natural (RN) - An area accessible by conventional roads; resource modifications and structures are evident but harmonize with the natural environment. Users would experience isolation and interaction with other parties in roughly equal proportions.

e. Roaded Modified (RM) - Same as Roaded Natural, except that resource modifications and structures are more evident and the probability of interaction with other parties would be much higher.

f. Rural (R) - The setting is accessible by conventional road and substantially modified with structures or other cultural modifications. Users would experience much interaction with others; there would be little opportunity for isolation.

g. Urban (U) - The setting is strongly dominated by structures, highways and streets. Users would not consider this setting attractive for conventional forest recreation. This category applies to privately-owned land on the Forest.

Recreation Visitor Day (RVD): Twelve hours of recreation use in any combination of persons and hours such as one person for twelve hours or three persons for four hours.

Recruitment: Replenishment. In terms of wildlife biology, to achieve successful reproduction or to replenish a supply of habitat elements, such as snags or down logs.

Reforestation: Reestablishing a crop of trees on forest land by natural or artificial methods.

Regeneration: Same as reforestation.

Regeneration Cutting: Harvesting timber stands so that new crops can be planted. This method is usually applied to stands which cannot economically be managed for commercial production because of poor stocking, health, thrift, quality, or species composition.

Region 5: The Pacific Southwest Region of the Forest Service, including primarily the National Forests in California, with small additional acreage in Oregon and Nevada.

Regional Forester: The official responsible for administering a single Region of the Forest Service.

Regulation Classes:

Regulation Class I silvicultural prescriptions are even-aged management prescriptions for existing timber stands with full timber yields expected. These represent harvest regimes on lands not otherwise constrained that result in optimum timber production in volume and/or value. Practices in this class are:

a. Clearcutting without thinning (nonintensive harvest in FORPLAN)

b. Shelterwood without thinning (nonintensive harvest in FORPLAN)

c. Clearcutting with thinning(s) prior to harvest.

Regulation Class II silvicultural prescriptions address "special conditions" for existing timber stands. Reduced timber yields would be expected. These represent harvest regimes on lands designated to meet nontimber objectives that result in a mean rotation longer than optimum for timber production. Generally other values are accounted for by constraints on harvest rates, not by modifications to yield tables; the exceptions are group selection (item e) and specialized prescriptions (item f). Practices in this class are:

a. Clearcutting without thinning (nonintensive harvest in FORPLAN)

b. Shelterwood without thinning (nonintensive harvest in FORPLAN)

c. Clearcutting with thinning(s) prior to harvest

d. Shelterwood with thinning(s) prior to harvest

e. Group selection (harvest openings less than two acres in size) or single tree selection

f. Specialized prescriptions that contain unique yield tables and/or constraints on harvest rates such as deer winter range prescriptions with wider spacing and no release.

Regulation Class III prescriptions are for existing stands which are equivalent to the former "marginal timber yield" categorization. Timber outputs resulting from prescriptions in this class will be regulated as a separate, non-interchangeable component of the allowable sale quantity. Practices in this class are:

a. Removal of single trees or small groups of trees for sanitation, salvage, or hazard reduction (assume yields based on past 10-year experience)

b. Stand maintenance along zones to maintain the vigor of the stands; yields are often linked to other harvest in adjacent areas; generally this practice is used for streamside and highway zones if not otherwise managed by independent sales

c. Prescriptions for marginal productivity (lands producing less than 20 cubic feet per acre per year) and/or disputed regeneration

d. Group selection (clearcuts less than two acres in size or single tree selection.

Rejuvenation: The treatment of vegetation (by burning or chemical or mechanical means) so that vigorous, young growth is stimulated.

Relicted Land: The land that has been exposed by the declining level of Mono Lake and which lies between the elevation of 6,417 feet and Mono Lake as it varies from day to day.

Research Natural Area (RNA): An area established specifically to preserve a representative sample of an ecological community; primarily for scientific and educational purposes.

Resident Trout: Trout that live year-round and reproduce in a stream or lake (contrasted with trout raised in a fish hatchery, planted, and removed by anglers).

Retention (VQO): See Visual Quality Objectives.

Right-of-Way: 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.

Riparian Area: Geographically delineable areas with distinctive resource values and characteristics that are comprised of the aquatic and riparian ecosystems.

Riparian areas on the Inyo National Forest consist of: (1) as a minimum, areas that are a 100-foot horizontal distance from the edge of standing bodies of water, lakes, and perennial streams, and (2) all wetlands, including all ephemeral or intermittent streams which support riparian vegetation, wet meadows springs, seeps, and bogs. See Streamside Management Zones for ephemeral and intermittent streams not included in wetlands.

Riparian Area-Dependent Resources: Water-dependent vegetation, wildlife, fish (and other aquatic animals), soil, and water.

Roadless Area: As defined by the Roadless Area Review and Evaluation (RARE), 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.

Roadless Area Review and Evaluation (RARE) II: The assessment of roadless areas within the National Forests as potential wilderness areas as required by the National Wilderness Act. This refers to the second such assessment which was documented in the Final Environmental Impact Statement of the Roadless Area Review and Evaluation process, January 1979.

Roads: A general term denoting a route 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.

ROS Class: See Recreation Opportunity Spectrum.

Rotation Age: The length of time between the formation or regeneration of a tree stand and its final cutting.

S

SAOT: See Skiers-at-one-time.

SCE: Southern California Edison.

SHPO: State Historic Preservation Officer.

SIA: See Special Interest Area.

SMZ: See Stream Management Zone.

SPM: Semi-Primitive-Motorized. (See Recreation Opportunity Spectrum.)

SPNM: Semi-Primitive-Non-Motorized. (See Recreation Opportunity Spectrum.)

SRI: See Soil Resource Inventory.

SSR: See Stream Channel Stability Rating.

Salvage: Dead or deteriorating trees often cut before their timber becomes worthless.

Sanitation Harvest: The removal of dead, diseased, insect infested, damaged, or otherwise low vigor trees to minimize losses from pests.

Sediment: Solid material, both mineral and organic, that is suspended in or being transported by water.

Selection Cutting: See Group Selection and Single Tree Selection.

Sensitive Species: Species that have appeared in the Federal Register as proposed additions to the endangered or threatened species list, and those that are on an official state list or are recognized by the Regional Forester as needing special management in order to prevent them from becoming endangered or threatened.

Sensitivity Level: A particular degree or measure of viewer interest in the scenic qualities of the landscape.

Seral Stage: The developmental or successional stage of a biological community (related to age class).

Shelterwood Cutting: Cutting a timber stand in two or more stages. The first cutting leaves some mature trees which provide shade to help seedlings get established. The shelterwood system is a form of even-aged timber management.

Silviculture: Generally, the science and art of cultivating forest tree crops.

Silvicultural System: The entire process by which forest stands are tended, harvested, and replaced. A silvicultural system includes all cultural practices performed during the life of the stand such as regeneration cutting, fertilization, thinning, improvement cutting, and use of genetically improved sources of tree seeds and seedlings to obtain multiple-resource benefits. Silvicultural systems are classified as even- or uneven-aged.

Single Tree Selection: 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 Preparation: The preparation of an area for regeneration, involving the removal of slash and/or competing vegetation and usually the exposure of bare mineral soil.

Size Class: For purposes of Forest planning, size class refers to the three intervals of tree stem diameter used for classification of timber.

Seedling/Sapling: less than five-inch diameter.

Pole Timber: five to eight-inch diameter.

Sawtimber: greater than eight-inch diameter.

Skiers-At-One-Time (SAOT): A measure of ski area capacity represented by the number of skiers that can occupy the ski area at once.

Slash: The residue left on the ground after timber cutting or after other disruptions such as storms or fires. Slash includes unutilized logs, uprooted stumps, broken stems, branches, twigs, leaves, bark, and chips.

Small Game: Birds and small mammals normally hunted or trapped.

Snag: A standing dead tree from which the leaves and most of the branches have fallen.

Soil Productivity: The natural capacity of a soil to produce a specified plant species or sequence of species under a specified system of management.

Soil Resource Inventory (SRI)/Soil Survey: The systematic examination, description, classification and mapping of soils.

Soil Surveys: The systematic examination of soils in the field and laboratory, including description, classification, and mapping of soils, and the interpretation of soils according to their productivity and behavior under use and management.

Order I: Very intensive investigations used for site-specific work, such as individual building sites, experimental plots, and irrigation and drainage studies.

Order II: Intensive investigations used for project level work.

Order III: Intermediate level investigations used for forest planning purposes on lands subject to heavy recreational use or timber management.

Order IV: Broad reconnaissance investigations use for forest-wide planning.

Special Interest Area (SIA): Areas established and managed for their unique or outstanding natural values, such as botanical, geological, scenic, or historical features.

Special-Use Permit: A permit authorizing the occupancy and use of National Forest land in the manner specified.

Species: A fundamental category of plant or animal classification.

Staging Area/Holding Area: An area in which mule deer gather during migration, typically while waiting for weather to clear or snow to melt before moving to higher elevations.

Stand: A community of trees or other vegetation types that is sufficiently uniform in composition, constitution, age, spatial arrangement, or condition to be distinguishable from adjacent communities and to thus form a management entity.

Standard Service: Management of recreation facilities which provides for vegetation management, full maintenance of facilities, appropriate toilet cleaning and garbage pickup, and information and interpretive services for the recreation area.

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 fully utilize the growth potential of the land.

Stratum: A three-part timber category based on tree species, age class, and stocking level.

Stream Channel Stability Rating (SSR): A method for evaluating stream channel stability was developed to evaluate the resistance of mountain stream channels to the detachment of bed and bank materials and to provide information about the ability of streams to adjust to and recover from potential changes in flow and/or increases in sediment production. The system was developed to be used in conjunction with other hydrologic analyses to augment silvicultural prescriptions and improve watershed management. A brief description of the items rated and the modifications employed in this study area included below.

The stream channel stability evaluation procedure involves subjective field evaluation of fifteen items. The channel cross-section is divided into three components: upper banks, lower banks, and channel bottom. Upper banks are rated for slope, mass wasting, debris jam potential, and bank protection by vegetation. Lower banks are rated for channel capacity, bank rock content, obstructions, cutting, and deposition. Channel bottoms are rated for rock angularity, brightness, consolidation, scouring and deposition, and clinging aquatic vegetation.

Each item is given a rating value which is weighed in terms of its importance as an indication of streambank stability. For instance, scouring and deposition of the channel bottom, which is an important factor, is heavily weighted, ranging from 6 to 24. In contrast, channel capacity, rock angularity, brightness, and clinging aquatic vegetation are all less important, and have values ranging only from one to four.

After a stream reach has been rated, values for the items are totaled. A score of less than 38 is considered "excellent", indicating a stable, erosion-resistant stream. A score of 39 to 76 is considered "good"; a score of 77 to 114 is considered "fair", and a score of 115 to 142 is considered "poor". It is important to note that a low score indicates stable streambank conditions, while a high score indicates unstable, eroded streambanks.

Stream 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. May include floodplains and wetlands, riparian areas, inner gorges, perennial streams, and intermittent streams showing signs of recurrent annual scour or deposition.

Succession: The gradual changing of a biological community over time (including the replacement of one community by another) until that change comes to a halt and the climax community is reached.

Successional Stage: A phase in the gradual changing of a biological community (same as seral stage).

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 manage

Suitable Timber Land: See Tentatively Suitable Timber Land.

Suppression: Actions taken to extinguish or confine a fire.

Sustained Yield: See Long-term Sustained Yield Capacity.

T

TBR: The benchmark which maximizes timber production for one decade.

T&E: Threatened and endangered species. (See Threatened Species, Endangered Species.)

TSI: See Timber Stand Improvement.

Target: A statement used to express planned results to be reached within a stated time period.

Tentatively Suitable Timber Land: Lands tentatively considered suitable for commercial timber management must meet the following criteria:

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 five years after final harvest.

e. Where adequate information is available to project responses to timber management activities.

Term Permit: A grazing permit or a special-use permit issued for a specified period of time, but which has a termination date.

Thinning: Cutting timber to improve the quality and growth of the trees that remain. In commercial thinning, merchantable timber (timber of salable quality), is cut. In precommercial thinning, non-merchantable trees are cut.

Threatened Species: Any species which is likely to become an endangered species within the foreseeable future and which has been designated in the Federal Register as a threatened species.

Tiering: Refers to the practice of analyzing general alternatives and environmental consequences in broader Environmental Impact Statements and more detailed alternatives and consequences in site-specific environmental documents. The more specific environmental document is then tiered to the analysis found in the more general one.

Timber Production: The growing, tending, harvesting, and regeneration of regulated crops of trees to be cut into logs and bolts for industrial or consumer use. Does not include fuelwood.

Timber Stand Improvements (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.

Trade-off: The impact on an output or cost caused by changing another output or cost.

Trailhead: The parking, signing, and other facilities available at the beginning of a trail.

Trampling and chiseling: A measure of the degree of livestock utilization and the extent of livestock damage along a stream reach. Trampling is defined as hoof marks, soil disturbance, soil compaction with evidence of hoof marks; bare soil with evidence of hoof marks, and trampled vegetation. Cattle trails bordering the stream or crossing it are included in this concept only when basal vegetation has been removed and bare ground has been exposed. Chiseling is identified by arc-shaped cuts in streambanks caused by cattle or sheep hooves.

Tuff: A type of light-colored volcanic rock commonly found on the Inyo National Forest north of Bishop.

Type Conversion: The conversion of one vegetation type or plant species to another, such as shrub to grass or sagebrush to bitterbrush.

U

U: Urban. (See Recreation Opportunity Spectrum.)

USFS: United States Forest Service, Department of Agriculture.

USFWS: United States Fish and Wildlife Service.

USGS: United States Geological Survey.

Understory: Low-growing vegetation such as grasses, shrubs, or small trees growing under a stand of trees. Also, that portion of trees in a forest stand below the overstory.

Uneven-aged Management: Management of forest stands which results in trees of several or many ages growing together. Cutting methods producing uneven-aged stands are single-tree selection and group selection.

Unplanned Ignition: A fire started at random by either natural or human causes or a deliberate arson-set fire.

Unsuitable Timber Lands: Refers to land which is not suited for timber production according to the criteria listed above under Tentatively Suitable Timber Land.

V

VAC: See Visual Absorption Capability.

VQI: See Visual Quality Index.

VQO: See Visual Quality Objectives.

Variety Class: A classification system with three visual landscape categories:

a. Distinctive (Variety Class A): Unusual and/or outstanding landscape variety that stands out from the common features in the landscape.

b. Common (Variety Class B): Prevalent, usual, or widespread landscape variety; also refers to ordinary or undistinguished visual variety.

c. Minimal (Variety Class C): Little or no visual variety in the landscape; monotonous or below average compared to the common features in the landscape.

Viable Populations: Reproducing populations of plants or animals of sufficient numbers and distribution to assure indefinite perpetuation of the species.

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: The state of visual alteration measured in degrees of deviation from the natural appearing landscape.

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 visual condition levels ranging from Type I (appears to be untouched by human activities) to Type VI (appears to be drastically disturbed).

Visual Quality Objectives (VQO): A set of measurable maximum levels of future alteration of a characteristic landscape. These levels are:

a. Preservation: Ecological change only.

b. Retention: Human activities are not evident to the casual Forest visitor.

c. Partial Retention: Human activity may be evident but must remain subordinate to the characteristic landscape.

d. Modification: 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.

e. Maximum Modification: Human activity may dominate the characteristic landscape but should appear as a natural occurrence when viewed as background.

Visual Resource: The composite of basic terrain, geologic features, water features, vegetative patterns, and land use effects that typify a land unit and influence the visual appeal the unit may have for visitors.

W

WFHR: See Wildlife and Fish Habitat Relationships.

WFUD: See Wildlife and Fish User Day.

WHR: Wildlife Habitat Relationships. (See Wildlife and Fish Habitat Relationships.

WIN: See Watershed Improvement Needs.

WLI: A Forest Plan Alternative which has been eliminated. It recommends a substantial amount of quality acreage for wilderness while maintaining or increasing commodity outputs through intensified management of lands outside wilderness.

WLN: The benchmark which maximizes Present Net Value (PNV) with all Further Planning Areas as wilderness.

Watch List I: Those plant species which the California Native Plant Society lists as needing more information before their legal status can be determined.

Watch List II: Those plant species which the California Native Plant Society has listed in the past, but are currently delisted.

Water Rights: The legal right to use water.

Water Yield: The total amount of water coming from an area of land, commonly a watershed, over a given period of time.

Watershed: The entire area that contributes water to a drainage system or stream.

Watershed Improvement Needs (WIN): An inventory of meadow complexes on the forest which have a history of being used for grazing. This inventory determines their condition of being either healthy, damaged or threatened. Erosion (gullying or headcutting) has been documented for over 25,000 acres.

Wild and Scenic River: A river set aside under the 1968 Wild and Scenic Rivers Act to preserve its natural environment and water quality. The following are the subcategories of wild and scenic designation:

a. "Wild River Areas: Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America."

b. "Scenic River Areas: Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads."

c. "Recreational River Areas: Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past." (16 U.S.C. Sec. 1273 (b))

Wild Trout Stream: A stream designated by the State of California to managed exclusively for the propagation of wild trout (those hatched in the wild); such streams are not stocked with hatchery-stocked trout.

Wilderness: As defined by the Wilderness Act of 1964, wilderness:

a. is undeveloped Federal land without permanent improvements or human habitation; is protected and managed so as to preserve its natural conditions;

b. has outstanding opportunities for solitude or primitive recreation;

c. 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 ignition.

Wildlife and Fish Habitat Relationships (WFHR): A system for organizing information about wildlife and fish species, their habitats, and the relationships between them that is used in land and resource management planning.

Wildlife and Fish User Day (WFUD): Twelve hours of recreation use involving wildlife or fish (primarily hunting and fishing).

Withdrawal: Withholding an area of Federal land from settlement, sale, location, or entry allowed under the general land laws to reserve the area for a particular purpose or program.

Y

Yield Table: A tabular statement of resource outputs expected to be produced under a specified set of conditions.

Z

Zone of Influence: The geographic area surrounding and intermingled with National Forest lands wherein people live whose lives are most directly impacted by Forest management decisions and activities.

VII. INDEX

CHAPTER VII. Index

Air Quality: 5, 27-28, 66, 75, 107, 113, 246

Alpine Ski Area, Existing and Under Study: 138-139, 166-169, 186-189, 192-195

Alpine Skiing: 47-48, 138-142

Ancient Bristlecone Pine Forest: 123-125

Bald Eagle: 20, 59-60, 72, 99, 255

Benton-Casa Diablo Management Area: 204-207

Bighorn Sheep: see Mountain Sheep

Bishop Creek-Buttermilk Management Area: 217-220

Blue Grouse: 20, 59, 61-62, 101

Burros: 13, 45-46, 231, 250

Campground: see Developed Recreation Site

Concentrated Recreation Area: 136-137, 215, 219, 227

Convict-McGee Management Area: 200-203

Coyote Management Area: 221-224

Cultural Resources: 6, 28-30, 66, 75-76, 107, 119, 136, 143, 158, 173, 187, 193, 247

Cutthroat Trout: 9, 34-35, 73, 79, 182, 187, 228

Dams: see Facilities

Deer: see Mule Deer

Designated Wilderness: 107-112

Developed Recreation Site: 47, 86-87, 143-144

Dispersed Recreation: 48-49, 87, 145-146

Diversity: 6, 30-31, 66, 76, 136, 248

Economic Factors: 5, 22-24, 66

Energy: 6-7, 31-32, 66, 77, 107, 113, 116-117, 119, 123, 126, 143, 145

Facilities, Roads and Trails: 7-8, 32-34, 66, 70-71, 77-78, 107-108, 113, 116-117, 119-120, 123, 126, 140-141, 147, 149, 187, 193, 219, 227, 231-232

Fire Suppression: see Protection

Fish: 9, 34-35, 67, 72-73, 78- 79, 182, 187, 193, 219, 228, 236, 248-249

Fisher: 59, 61, 98, 256

Fisheries: 9, 77-79, 85, 108, 113, 120, 126, 136, 219

Fuelwood: see Timber

Further Planning Areas: 9-10, 36

Geology: 10, 37-38, 67, 80, 108, 120, 123, 126, 136, 145, 158, 167, 173, 182, 187, 193, 198, 202, 211

Geothermal: see Minerals

Glass Mountain Management Area: 170-174

Golden Eagle: 60, 100

Golden Trout: 35, 79, 126, 236

Golden Trout Management Area: 233-237

Goshawks: 20, 59-61, 72, 100-101, 254

Grazing: see Range

Great Gray Owl: 59, 62, 101, 256

Groundwater: see Geology

Hairy Woodpecker: 60, 102

Hardwoods: 80, 131, 146

High Level Timber Management: 132-133

Hydroelectric: see Energy

Interpretive Services: 87

Inyo Mountains Management Area: 229-232

June Lake Loop Management Area: 164-169

Lands: 11, 38-40, 67, 71, 80-82, 108, 113, 120, 123, 126, 130, 132, 141, 167, 177, 187, 193-194, 211, 228

Lee Vining Management Area: 155-159

Livestock: see Range

Management Indicator Species (MIS): 35, 59-64, 98-105, 112, 256-257

Mammoth Escarpment Management Area: 184-189

Mammoth Management Area: 190-195

Minerals (Mining): 11-12, 40-42, 67, 71, 82-83, 108, 113, 116-117, 120, 123, 126-127, 136, 138, 141, 143, 145, 147, 149, 167, 187

Mono Basin Management Area: 152-154

Mono Basin National Forest Scenic Area: 42, 122, 154, 174

Mountain Bike: see Dispersed Recreation

Mountain Sheep: 20-21, 60, 62-63, 72-73, 88, 101-102, 112, 114-116, 157-159, 211-212, 231, 255

Mule Deer: 20-21, 59-61, 72-73, 98-99, 117-118, 131, 137, 139, 142, 148, 163, 169, 174, 183, 189, 195, 203, 207, 241, 255

Multiple Resource Area: 149-150

Nordic Skiing: see Dispersed Recreation

Off-highway Vehicle (OHV): 49, 70-71, 78, 87-88, 109, 114, 116-118, 120, 124, 128, 130, 132, 134, 137-138, 141, 143-145, 147, 149, 211, 220, 223, 241, 251

Over-snow Vehicle (OSV): 49, 78, 87-88, 109, 114, 116, 118, 120, 124, 128, 130, 132, 134-135, 137-138, 141, 144-145, 147, 149, 168, 173-174, 182-183, 188

Owens Valley Escarpment Management Area: 225-228

Peregrine Falcon: 20, 59-61, 72, 100, 255

Pest Management: 12, 42-43, 67, 83-84, 108, 114, 120, 123, 136, 143, 249

Pine Marten: 59, 62, 98, 256

Pizona Management Area: 175-178

Potential Alpine Ski Area: 140-142

Prairie Falcon: 60, 100

Proposed Wilderness: 113-115

Protection (Fire Management): 12-13, 43-45, 67, 71, 84, 108-109, 114, 116-117, 120, 123-124, 127, 130, 132, 134, 136, 138, 141, 143, 145, 147, 149, 250

Range: 13-15, 45-46, 67, 71, 84-86, 109, 114, 116-117, 120, 124, 127, 130, 132, 134-136, 141, 143, 149, 158, 163, 173, 178, 182, 206, 211, 215, 219, 223, 228, 232, 236, 241, 250

Recreation: 13-15, 46-49, 68, 72, 86-89, 109-110, 114, 116, 117-118, 120, 124, 127-128, 130, 132, 134-138, 141, 143-149, 158, 163, 167-168, 173-174, 178, 182-183, 187-188, 194, 198-199, 202, 211, 215-216, 220, 223, 228, 236, 241, 251

Recreation Opportunity Spectrum: 46, 109, 114, 116-117, 120, 124, 128, 130, 134, 136-138, 141, 143, 147, 149, 163, 211, 223, 251

Reds Meadow-Fish Creek Management Area: 196-199

Research Natural Areas (RNA): 15, 49-50, 68, 89, 119-121, 141

Riparian Areas: 15-16, 50-51, 63, 68, 89-91, 102, 118, 121, 124, 128, 137, 144, 183, 251

Roads: See Facilities

Rock Creek-Pine Creek Management Area: 213-216

Sage Grouse: 20, 59-60, 62, 101, 182-183, 207

Semi-Primitive Recreation: 147-148

Sensitive Plants: 16, 51, 91-92, 252

Sierra Nevada Red Fox: 59, 61, 98, 256

Snowmobile: See Over-snow Vehicle (OSV)

Social Factors: 5, 22, 24-27, 66

Soil: See Watershed

South Sierra Managmement Area: 238-241

Special Interest Areas and National Natural Landmarks: 16-17, 52, 68, 92, 114

Spotted Owl: 59, 62, 101, 256

Timber: 17, 53-54, 68, 72, 92-93, 102-105, 110, 114, 118, 121, 124, 128-129, 130-133, 135, 137-138, 141-142, 144, 146, 149, 174, 183, 212, 252-253

Threatened, Endangered and Sensitive Species: 9, 16, 20, 34-35, 51, 59-64, 68, 72-73, 78-80, 98-105, 110, 183, 248, 256

Trails: See Facilities

Trout: See Fish

Tule Elk: 60, 100

Uneven-aged Timber Management: 130-131

Upper Owens River Management Area: 179-183

Utility Corridor: See Lands

Visual Resources: 18, 54-55, 68, 93-94, 110, 114, 116, 118, 121, 124, 129, 131, 133, 135, 137-139, 142, 144, 146-149, 158, 163, 168, 174, 183, 188-194, 202-203, 206, 212, 216, 220, 236, 253

Walker-Parker Management Area: 160-163

Watershed (Soils and Water): 18-19, 55-57, 68, 72, 94-97, 110, 114, 121, 125, 129, 137-139, 158-159, 163, 168-169, 189, 194-195, 207, 216, 220, 224, 228, 237, 253-254

White Mountains Management Area: 208-212

Wild and Scenic Rivers: 19, 57-58, 69, 97, 110, 126-129, 199, 237, 241

Wilderness: 19, 58-59, 69, 72, 97, 107-115, 121, 129, 159, 212, 220, 232, 257

Wild Horse: 13, 45-46, 177-178, 210, 250

Wildlife: 20-21, 59-64, 69, 72-73, 98-105, 112, 114-116, 118, 121, 125, 131, 135, 137, 139, 142, 144, 146, 148, 150, 159, 163, 169, 174, 183, 189, 195, 203, 207, 212, 232, 241, 254-257

Williamson Sapsucker: 60, 102

Wind Power: See Energy

Wolverine: 59, 98, 256

Yellow Warbler: 60, 102

APPENDIX

Appendix A
Resource Plans

EXISTING RESOURCE PLANS

The following is a list of existing plans that will be: (1) incorporated into the Plan without revision, (2) incorporated into the Plan with direction to be revised or updated, or (3) replaced by the Plan.

EXISTING PLANS INCORPORATED INTO THE PLAN WITHOUT REVISION

- Individual Research Natural Area (RNA) Management Plans for established Research Natural Areas:

Indiana Summit	Established 1932
Harvey Monroe Hall	Established 1933
White Mountain	Established 1953
Last Chance Meadow	Established 1982
Sentinel Meadow	Established 1983

- Ancient Bristlecone Pine Forest Management Plan (1958)

- Buttermilk Deer Herd Management Plan (California Department of Fish and Game) (1984)

- Environmental Assessment and Operating Plan for Geothermal Exploration in the Long Valley Caldera (Lease Block I) (1980)

- Environmental Assessment and Operating Plan for Union Geothermal Inyo Domes Project (1985)

- Environmental Assessment for Geothermal Leasing in the Monache Meadows Area (1985)

- Erosion Prevention Plan for Mammoth Mountain Ski Area (1983 update)

- Erosion Prevention Plan for June Mountain Ski Area (1982)

- Fishery Management Plan for Lahontan Cutthroat Trout salmo clarkii henshawi in California and Western Nevada Waters (1986)

- Geothermal Leasing Program for the Mono-Long Valley Known Geothermal Resource Area (programmatic Final Environmental Impact Statement) (1973)

- Golden Trout Habitat and Watershed Restoration Plan for the Kern Plateau (1983)

- Goodale Deer Herd Management Plan (California Department of Fish and Game) (1983)

- Hot Creek Wild Trout Management Plan (California Department of Fish and Game and Inyo National Forest) (1986)

- Inyo-White Mountains Deer Herd Management Plan (California Department of Fish and Game) (1985)

- June Lake Loop - A Review of Current Water Uses and Future Needs (1982)

- Lahontan Cutthroat Trout Draft Recovery Plan (U.S. Fish and Wildlife Service) (1985)

- Lahontan Cutthroat Trout Habitat Management Plan (1983)

- Law Enforcement Plan (1985)

- Long Valley Caldera - Mono Crater Contingency Plan (1983)

- Long Valley Caldera - Mono Crater Fire and Air Operation Plan, (Inyo and Toiyabe National Forests) (1983)

- Mammoth County Water District Water Management Plan Environmental Assessment (1977)

- Management Plan for the Casa Diablo Deer Herd (California Department of Fish and Game) (1985)

- Management Plan for the East Walker Deer Herd (California Department of Fish and Game)

- Management Plan for the Sherwin Deer Herd (California Department of Fish and Game) (1985)

- Monache Deer Herd Plan (California Department of Fish and Game) (1981)

- Mono Lake Deer Herd Management Plan (California Department of Fish and Game)

- Pacific Crest National Scenic Trail Management Plan (1981)

- Pacific Coast Recovery Plan for the American Peregrine Falcon (U.S. Fish and Wildlife Service) (1982)

- Pacific States Bald Eagle Recovery Plan (U.S. Fish and Wildlife Service) (1986)

- Paiute Cutthroat Trout Recovery Plan (U.S. Fish and Wildlife Service) (1985)

- Pronghorn Antelope Habitat Management Plan (Bureau of Land Management, California Department of Fish and Game, Forest Service) (1982)

- Rock Creek Recreation Area Composite Management Plan (1964)

- Saline Valley and Lee Flat Burro Herd Management Plan (1985)

- Sierra Nevada Bighorn Sheep Recovery and Conservation Plan (California Department of Fish and Game, Forest Service, Sequoia/Kings Canyon National Park, Yosemite National Park) (1984)

- Supplemental Environmental Assessment for Geothermal Leasing in the Mono-Long Valley KGRA (Lease Block II) (1984)

- Watershed Improvement Needs Plan (1982)

- Wild Horse Management Plan for White Mountain and Inyo Mountain Herds (1976)

EXISTING PLANS INCORPORATED WITH DIRECTION TO REVISE OR UPDATE

- Golden Trout Wilderness Management Plan (1982)

- Hoover Wilderness Management Plan (1977)

- Individual grazing allotment management plans (various dates)

- Interagency Motor Vehicle Use Plan (OHV Plan) (1977)

- John Muir Wilderness Management Plan (1979)

- Minarets Wilderness Management Plan (1979) (revise to include 1984 wilderness additions)

EXISTING PLANS THAT WILL BE REPLACED BY THE PLAN

- Mammoth-Mono Unit Plan (1979)

- Ranger District Multiple Use Plans (circa 1970)

- Timber Management Plan for Owens River Working Circle (1967).

RESOURCE PLANS NEEDED FOR PLAN IMPLEMENTATION

The following plans will be needed for Plan implementation. They are listed by resource:

Air Quality

- Air Quality Resource Values Plan that establishes Air Quality Resource Values and Air Quality Resource Values Indicators to monitor Forest and non-Forest activity effects on Class I Areas.

Cultural Resources

- Cultural Resources Interpretation Plan.

- Cultural Resource Management Plan for the Benton Range in cooperation with the Bureau of Land Management.

- Programmatic Memoranda of Agreements with the California and Nevada State Historic Preservation Officers and the Advisory Council on Historic Preservation type-of-site evaluations and categories of undertakings.

- Protection Plans for Class I and vandalized cultural resource properties.

Facilities

- Telecommunications Plan for the Inyo National Forest.

Fish

- Paiute Cutthroat Trout Recovery Plan.

- Owens Tui Chub Recovery and Management Plan (U.S. Fish and Wildlife Service).

Lands

- Apiary Site Coordination Plan (coordinated between land management agencies: Forest Service, Bureau of Land Management, Los Angeles Department of Water and Power).

- Landownership Adjustment Plan.

Minerals

- Common Variety Mineral Materials Management Plan.
- Environmental Assessments and Operating Plans for geothermal leasing in the Monache area.

Protection

- Fire Management Action Plans including suppression policies.

Range

- Montgomery Pass Wild Horse Management Plan.

Recreation

- Composite Management Plans for selected concentrated recreation areas: (1) Reds Meadow, (2) Bishop Creek, (3) Mammoth Lakes Basin, (4) Lee Vining Canyon, (5) June Lake Loop.

- Forest-wide Recreation Residence Future-Use Determination Plan.

Research Natural Areas

- McAfee Meadow Research Natural Area Management Plan.

- Whipporwill Flat Research Natural Area Management Plan.

Riparian

- Riparian Resource Management Plan.

Scenic Area

- Mono Basin National Forest Scenic Area Management Plan (under Section 304 of the California Wilderness Act of 1984 - PL 98-425).

Sensitive Plants

- Sensitive Plant Program Management Plan.

Visual Resources

- Visual Corridor Plans for Scenic Highways as follows:

1. U.S. 395
2. State Route 58 (all)
3. State Route 203 (all)
4. State Route 168 (Bishop Creek).

Watershed

- Road Abandonment and Restoration Plan to benefit watershed.

- Non-Consumptive Water Plan. Quantify uses and needs for the following priority streams:

1. Rush Creek	5. Owens Gorge
2. Lee Vining Creek	6. Walker Creek
3. Big Pine Creek	7. Parker Creek
4. Division Creek	8. Cottonwood Creek.

Wilderness

- Management Plans for recommended wilderness areas.

- South Sierra Wilderness Management Plan.

Wildlife

- Bald Eagle Wintering Area Plan.

- California and Nelson Mountain Sheep Management Plan.

- Cliff-Nesting Raptor Management Plan for Golden Eagle and Prairie Falcon.

- Goshawk Habitat Management Plan including coordination of timber management with goshawk habitat needs.

- Known Fawning Area Map of Forest.

- Sage Grouse Habitat Management Plan for Long Valley.

INVENTORIES NEEDED FOR PLAN IMPLEMENTATION

Cultural Resources

- Forest-wide cultural resource inventory.

- Inventory of cultural sites on the Forest.

- Periodic update of the Forest Prehistoric Overview and Data Base to reflect changes in management direction and state-of-the-art information.

Facilities

- Inventory of uninventoried roads on the Forest.

Geology

- Methodologies for collecting, displaying and updating Forest groundwater resource information.

- Site-specific information that can be used to evaluate the risk to existing and planned Forest Service and private facilities posed by land instability, volcanic, and seismic processes.

Minerals

- Program for inventorying, updating current inventories, and cataloging existing mineral materials sites, showing the type of material, the reserves, and a site plan for each site.

- Site-specific mineral information to project accurately where conflicts may arise between mining projects and the public or between federal projects and mining-related activities.

Protection

- Analysis of fire management areas so the most cost-effective fire suppression strategy (confinement, containment, or control), may be applied.

Riparian

- Stream inventory to identify: (1) type, amount and condition of riparian areas; (2) extent, type and significance of riparian area-dependent resources; (3) existing or potential conflicts between riparian area-dependent resources and other resources.

Sensitive Plants

- Permanent transect quadrant markers and photo reference points for sensitive plant species that might be subject to inadvertent damage by management activities.

- Inventory of known or suspected sensitive plant populations and potential sensitive plant habitats to provide the data necessary for a biological assessment including rarity, distribution, potential habitat, status, threats, and ecological requirements of each species.

Special Interest Areas

- Update of the current potential Geologic Special Interest Area inventory and evaluation of specific sites for formal designation as Geologic Special Interest Areas.

Timber

- Inventory of timber management backlogs: reforestation, maintenance, release, and precommercial thinning.

Watershed: Soils

- Soil surveys in wilderness (Fourth Order Soil Survey) and in the Mammoth and Mono Lake areas (Third Order Soil Survey).

- Watershed Improvement Needs Inventory for the soil resource in those areas not covered by the water WIN Inventory.

Watershed: Water

- Inventory of Forest roads needing maintenance (a source of water degradation), and a Road Restoration Action Plan.

- Survey of streams on the Inyo National Forest to identify existing or potential conflicts between riparian-dependent and non-dependent resources. Use of the streambank stability evaluation method and the trampling and chiseling method where they apply. Highest priority to streams containing threatened trout species, wild trout waters, and watersheds that supply water for domestic uses.

Wild and Scenic Rivers

- Assessment of the Middle Fork of the San Joaquin River for possible inclusion in the National Wild and Scenic River System in cooperation with the Sierra National Forest.

Wilderness

- Inventory of structures within wilderness, following schedules in individual Wilderness Management Plans.

Wildlife

High Priority

- Inventory of suitable cliff nesting habitat for peregrine falcons in the Mono Basin.

Moderate Priority

- Verification of location and types of vegetation found on the Inyo. Inventory of vegetation condition and trends at least every ten years. Vegetation data collection done according to the Region 5 Ecology Group Standards. Development of methodologies for collecting habitat information including the mapping of vegetation down to at least forty acres for terrestrial habitats and five acres for riparian habitats; methodologies for delineating existing and potential emphasis species.

- Inventory of existing old-growth stands by District, and registration of stands on District.

- Spotted owl inventory to document the presence or absence of this species. Inventories to determine the suitability of East Slope Sierra habitats.

- Inventory to determine the extent of the habitat occupied by the Inyo slender salamander, and document major population centers of this species.

- Development of Plan implementation direction at the project level. This would include direction for data collection, data analysis and wildlife integration into resource projects.

- Assessment and inventory of oak woodlands to determine habitat suitability for wildlife species.

Low Priority

- A great gray owl inventory in old growth conifer stands adjacent to mountain meadows (areas thought to be great gray owl habitat).

- Identification of bald eagle winter roosting sites.

- Evaluation of occupied and unoccupied cliff sites of the prairie falcon and the golden eagle to determine limiting habitat factors and improvement opportunities.

- Investigation of the potential for establishing pine martens in suitable, unoccupied habitats. An inventory to determine population levels and to obtain site-specific information regarding this species.

- Inventory of suitable habitat to determine population levels of wolverine.

Appendix B

Research and Technical Data Needs

The following items have been drawn from three primary sources: (1) resource managers on the Inyo National Forest, (2) suggestions from the Regional Office of items to include that are appropriate to the Forest, and (3) public comments that were received during the planning process.

RESEARCH NEEDS

Cultural Resources

- Collect and synthesize paleoenvironmental data in order to reconstruct the sequence of culturally significant Late Pleistocene and Holocene environments in the region. Tasks involved are as follows:

  1. Identify and date major geomorphic and geological events.

  2. Determine the frequencies, age, and location of past volcanic eruptions, including tephra fall and pyroclastic flow patterns.

  3. Reconstruct past riparian and neoglacial events.

  4. Reconstruct the succession of past biotic communities.

  5. Investigate the effects of various botulism bacilli on fish and avifauna populations, and the potential effects of such outbreaks on past human exploitation of these resources.

  6. Determine the initial appearance date of the pandora moth (Coloradia pandora) in the region.

  7. Determine the effect of historic activities such as mining, grazing, and water diversion on the pre-contact physical environment.

Economic Analysis

- Determine benefit values for non-market resources such as dispersed recreation, water, wilderness, and wildlife and fish.

- Conduct marketing (demand) research for Wildlife and Fish User Days (WFUDs) and Recreation Visitor Days (RVDs).

Minerals

- Identify the long-term effects on groundwater and on surface resources of removing geothermal liquids.

Range

- Develop cost-effective methods to regenerate and manage bitterbrush.

- Quantitatively assess the optimum vegetation that range soils can produce.

Sensitive Plants

- Complete sensitive plant inventories and surveys of each species and its potential habitat to determine trends, status and distribution.

- Collect the necessary biological data for completing eleven species management guides.

- Determine the type, intensity and extent of impacts that each sensitive species can tolerate without jeopardizing its viability and survival, or listed status.

- Analyze data to determine which species need recovery plans.

Timber

- Participate with researchers in designing at least one timber sale to investigate the consequences of even-aged and uneven-aged timber management.

- Research the productivity of and management opportunities on pinyon-juniper sites.

- Determine the effects on the nutrient cycle of removing large quantities of fuelwood.

Watershed: Soils

- Measure the effectiveness of various site preparation techniques for promoting tree growth and limiting erosion.

Watershed: Water

- Develop a methodology to assess the cumulative effects of management activities on water quality and quantity, and develop criteria and means to identify threshold levels of watershed condition due to cumulative effects.

Wildlife

- Study mule deer habitat use and mule deer ecology, areas not adequately understood at present.

- Determine the effects of timber harvest practices on goshawk nesting habitat and home range sizes.

TECHNICAL DATA NEEDS

Air Quality

- Determine which are the most useful Air Quality Resource Value (AQRV) indicators for monitoring in order to assess air pollution and acid deposition on Air Quality Resource Values in Class I Areas.

Cultural Resources

- Develop research designs as outlined in the Prehistoric Overview for the investigation and evaluation of specific categories of prehistoric sites.

- Test the effectiveness of special over-the-snow logging stipulations designed to protect certain types of cultural sites in order to implement programmatic protection measures.

- Evaluate the effectiveness of using survey transect intervals greater than the current 30-meter Forest standard in terms of cost- and time-efficiency. Take into account such factors as terrain and vegetative cover.

- Produce an Historic Overview for the Forest which will bring together the current historic knowledge about the region and provide a theoretical framework for future research and for evaluations of significance. Tasks involved are as follows:

  1. Reconstruct and evaluate the relationship between early historical settlement patterns and transportation systems.

  2. Compare regional mining settlement patterns with contemporaneous western slope developments.

  3. Evaluate railroad logging systems on the Forest in context of the Regional Railroad Logging System research design.

  4. Document and interpret structural construction techniques and architectural styles used on the region.

  5. Investigate the relationship of the region to metropolitan development in California and Nevada.

- Produce an Ethnographic Overview that will bring together current knowledge about the ethnographically known inhabitants of the region and will consider and provide a framework for dealing with contemporary concerns of the American Indian community.

- Perform the following tasks pending completion of the Forest-wide inventory:

  1. Develop predictive site location models for prehistoric sites located in upland areas of the White, Inyo, and Sierra Nevada mountains.

  2. Develop predictive site location models for historic sites located on the Forest.

  3. Develop appropriate sampling strategies, procedures of field recordation, and methods of data analysis for both prehistoric and historic site predictive models.

- Complete determinations of Class II properties (no determination of eligibility for the National Register of Historic Places) as either Class I (eligible) or Class III (not eligible).

Fish

- Develop a habitat capability model for golden trout.

- Develop a habitat capability model for Paiute cutthroat trout.

Recreation

- Conduct an analysis to determine the potential for additional snowmobiling opportunities.

Watershed: Soils

- Develop guidelines to ensure the sustained yield of timber, livestock, and other commodities while keeping soil degradation at acceptable levels.

Watershed: Water

- Quantify the instream flows needed for channel competence and instream values.

- Continue sediment transport studies of Mammoth Creek to identify sources of sediment and to understand the sediment transport regime for that stream.

- Quantify the effects of grazing on stream bank stability, water quality, fish habitat, and sediment yields.

Wildlife

High Priority

- Develop criteria to prevent destruction or adverse modification of critical habitat for threatened and endangered species (peregrine falcon, bald eagle, Owens tui chub, Lahontan cutthroat trout, and Paiute cutthroat trout).

- Collect data relative to optimum and acceptable snag and down log numbers for dependent wildlife species in the Eastern Sierra.

- Develop a habitat capability model for Sierra Nevada mountain sheep.

- Field test and verify habitat capability models for emphasis species.

- Gather data and perform tasks as follows to help increase the population of California mountain sheep:

  1. Assess suitable, unoccupied habitat.

  2. Monitor release sites for transplant success, and the source population to determine suitability for continued transplants.

  3. Identify limiting habitat factors.

- Evaluate suitable, unoccupied Nelson mountain sheep habitat for release site potential.

Moderate Priority

- Determine the way in which habitat criteria can be used to establish population levels of wildlife.

- Assess the suitability of goshawk nesting habitat in noncommercial or unsuitable timber.

Low Priority

- Assess factors such as road densities and livestock grazing that are limiting to tule elk habitat.

- Collect and evaluate information regarding Sierra Nevada red fox, fisher, and wolverine to determine management opportunities.

- Establish baseline information for fish and wildlife and their interaction with vegetation management. Include numbers of animals vs. habitat change, viable populations, and the relation of animals to WFUDs.

Appendix C

Tentative Ten-Year Timber Sale Action Plan

Table 1
Land Classification

Classification	M Acres
1. Non-forested land (includes water)	978.7
2. Forested land	951.1
3. Forested land withdrawn from timber production	326.4
4. Forested land not capable of producing crops of industrial wood	484.1
5. Forested land physically unsuitable; irreversible damage likely to occur, or not restockable within 5 years	29.9
6. Forested land - inadequate information	-----
7. Tentatively suitable forested land (item 2 minus items 3, 4, 5, and 6)	110.7
8. Forested land not appropriate for timber production (as assigned to other resource uses to meet Plan objectives)	36.8
9. Total unsuitable forested land (items 3, 4, 5, 6, 8)	877.2
10. Total suitable forested land (item 2 minus item 9)	75.2
11. Total National Forest land (items 1 and 2)	1,931.1

Table 2
Vegetative Management Practices
(Annual Average in First Decade for Suitable Lands)

Practice	Acres	Volume (MBF)
Even-aged Management		
Liquidation of old growth	1,300	5,100
Commercial Thinning	490	980
Uneven-aged Management		
Liquidation of timber over rotation age	350	1,000
Commercial Thinning	10	20
Total	2,150	7,100
Timber Stand Improvement	374	
Reforestation	200	
Allowable Sale Quantity		7,100
Timber Sale Program Quantity		7,100

Table 3
Timber Productivity Classification

Potential Growth (cubic feet/acre/year)	Suitable Lands (acres)	Unsuitable Lands 1/ (acres)
Less than 20	----	484.1
20-49	53.8	290.8
50-84	21.4	101.0
85-119	----	-----
120-164	----	-----
165-224	----	-----
225+	----	-----

1/ The productivity of lands, such as wilderness, where data are not available is estimated.

Table 4
Present and Future* Forest Conditions

	Unit of Measure	Suitable Land
Present Forest	MMCF	1,239
Growing Stock	MMBF	8,052
Live Cull 1/	MMCF	47
	MMBF	306
Salvable Dead 1/	MMCF	23
	MMBF	145
Annual Net Growth	MMCF	16
	MMBF	106
Annual Mortality 1/	MMCF	1
	MMBF	8
Future Forest		
Growing Stock	MMCF	1,119
Annual Net Growth	MMCF	25
Rotation Age		
Jeffrey Pine	Years	140
Lodgepole Pine	Years	100
True Fir	Years	180

* Future = decade 16
1/ Values derived from 1979 Timber Management Inventory

Figure 1
Allowable Sale Quantity and
Long-Term Sustained Yield Capacity

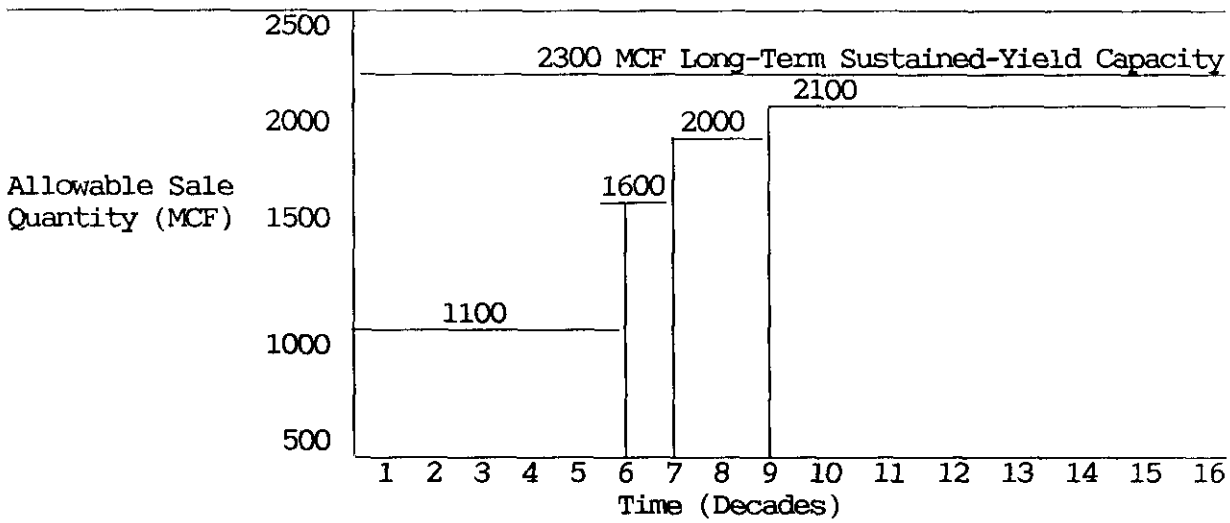
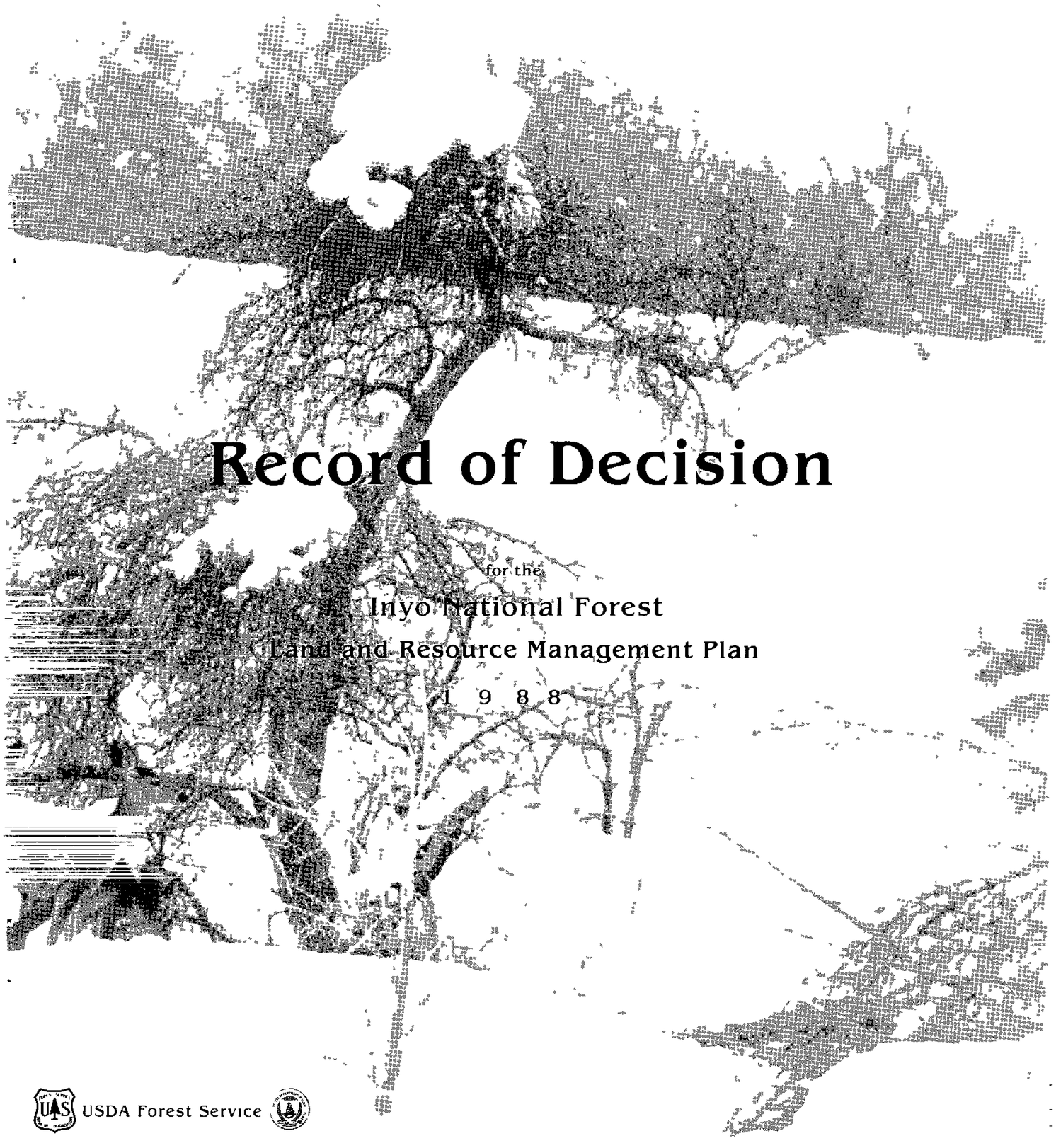


Table 5
Tentative Ten-Year Timber Sale Action Plan
Inyo National Forest 1989 - 1998

Area Location	Volume MMBF	Road Miles Reconstruction	Probable harvest methods by forest type.
FISCAL YEAR 1989			
MA #5 Tunnel Compartment	4.0	2.5	JP even-aged management with openings not exceeding 20 acres.
MA #4, 5, 7 and 8 R/W, Commercial Thinning and Fuelwood Sales	3.1	0.0	Small JP and LP even- and uneven-aged mgt. sales.
FISCAL YEAR 1990			
MA #5 Crestview Compartment	4.0	0.0	JP even-aged management with openings not exceeding 20 acres.
MA #5 Sand Compartment	1.0	0.0	JP even-aged management with openings not exceeding 20 acres.
MA #4, 5, 7 and 8 R/W, Commercial Thinning and Fuelwood Sales	2.1	0.0	Small JP and LP even and uneven-aged mgt. sales.
FISCAL YEAR 1991			
MA #5 Tunnel Compartment	3.0	0.0	JP even-aged management with openings not exceeding 20 acres.
MA #5 Aqueduct Compartment	2.0	0.0	JP even-aged management with openings not exceeding 20 acres.
MA #4, 5, 7 and 8 R/A, Commercial Thinning and Fuelwood Sales	2.1	0.0	Small JP and LP even- and uneven-aged mgt. sales.
FISCAL YEAR 1992			
MA #5 Rust Compartment	5.0	1.0	JP even-aged management with openings not exceeding 20 acres.

MA #4, 5, 7 and 8 R/W, Commercial Thinning and Fuelwood Sales	2.1	0.0	Small JP and LP even- and uneven-aged mgt. sales.
FISCAL YEAR 1993			
MA #5 Rust Compartment	2.0	1.5	JP even-aged management with openings not exceeding 20 acres.
MA #5 Pilot Compartment	2.0	0.0	JP even-aged management with openings not exceeding 20 acres.
MA #5 Sand Compartment	1.0	0.0	JP even-aged management with openings not exceeding 20 acres.
MA #4, 5, 7 and 8 R/W, Commercial Thinning and Fuelwood Sales	2.1	0.0	Small JP and LP even- and uneven-aged mgt. sales.
FISCAL YEAR 1994			
MA #7 Glass Compartment	5.0	0.0	Helicopter and tractor, JP uneven-aged management with openings not exceeding 2 acres.
MA #4, 5, 7 and 8 R/W, Commercial Thinning and Fuelwood Sales	2.1	0.0	Small JP and LP even- and uneven-aged mgt. sales.
FISCAL YEAR 1995			
MA #5 Hartley Compartment	3.0	0.0	JP uneven-aged management with openings not exceeding 2 acres.
MA #7 Glass Compartment	2.0	0.0	JP uneven-aged management with openings not exceeding 2 acres.
MA #4, 5, 7 and 8 R/W, Commercial Thinning and Fuelwood Sales	2.1	0.0	Small JP and LP even and uneven-aged mgt. sales.
FISCAL YEAR 1996			
MA #5 Bowl Compartment	2.0	0.0	JP even-aged management with openings not exceeding 20 acres.

MA #5 Sand Compartment	3.0	0.0	JP even-aged management with openings not exceeding 20 acres.
MA #4, 5, 7 and 8 R/W, Commercial Thinning and Fuelwood Sales	2.1	0.0	Small JP and LP even- and uneven-aged mgt. sales.
FISCAL YEAR 1997			
MA #7 Smoke Compartment	5.0	0.0	JP even-aged management with openings not exceeding 20 acres.
MA #4, 5, 7 and 8 R/W, Commercial Thinning and Fuelwood Sales	2.1	0.0	Small JP and LP even and uneven-aged mgt. sales.
FISCAL YEAR 1998			
MA #7 Lookout Compartment	5.0	0.0	JP even-aged management with openings not exceeding 20 acres.
MA 4, 5, 7 AND 8 R/W, Commercial Thinning and Fuelwood Sales	2.1	0.0	Small JP and LP even and uneven-aged mgt. sales.



Record of Decision

for the

Inyo National Forest
Land and Resource Management Plan

1 9 8 8

USDA Forest Service

Inyo National Forest

Pacific Southwest Region USDA Forest Service

Record of Decision

for the

Inyo National Forest

Land and Resource Management Plan

1 9 8 8

DENNIS W. MARTIN

Forest Supervisor

PAUL F. BARKER

Regional Forester

This Forest Plan establishes the management direction and associated long-range goals and objectives for the Inyo National Forest for the next ten to fifteen years

Chapter		Page
I.	The Decision	1
II.	Alternatives Considered	4
III.	Rationale for the Decision	5
IV.	Implementation, Mitigation and Monitoring	10
V.	Planning Records, Amendments and Revisions, and Administrative Review	11

RECORD OF DECISION
USDA FOREST SERVICE

Final Environmental Impact Statement
Inyo National Forest
Land and Resource Management Plan

Inyo, Mono, Fresno, Madera and Tulare Counties, California
Esmeralda and Mineral Counties, Nevada

Based on a thorough study of the resources of the Inyo National Forest, detailed analysis of six management alternatives, and review of public comments on the Draft Environmental Impact Statement and Plan, I have selected the Preferred Alternative described in the Final Environmental Impact Statement and Final Plan to provide direction for management activities on the Inyo National Forest for the next ten to fifteen years. This record of decision summarizes the principal management objectives of the Forest Plan and the rationale for my decision.

Plan Direction

The Plan protects and enhances the environmental and recreation benefits provided by the Inyo National Forest while providing moderate levels of grazing use, minerals development, and timber harvest to support the local economy. The following summarizes key management direction and goals to be achieved over the ten-year period of Plan implementation.

Mono Basin National Forest Scenic Area

The Mono Basin National Forest Scenic Area will be managed under Interim Management Direction approved in 1985 until an Environmental Impact Statement is completed. Guidelines developed in the Environmental Impact Statement will become a part of the Forest Plan.

Range

Livestock grazing will continue at the current level of 41,400 Animal Unit Months to meet local demand. Additional water developments will be constructed and range conditions will be improved on 69,100 acres to increase the quality and quantity of forage on the Forest as part of overall measures to improve ecological conditions in riparian areas.

Recreation

Approximately fifty new camping units per year will be developed to increase Forest visitor capacity by 2,000 Persons At One Time. Existing sites will be reconstructed or rehabilitated to bring them up to standard. Two hundred and forty miles of trail will be constructed, including nordic and snowmobile trails and corridors which will be designated to minimize user conflicts. At least five or more new snowplay areas will be designated and additional

parking areas will be constructed to provide better access for winter recreationists.

Mammoth Mountain and June Mountain Ski Areas will be expanded to a total of 31,000 Skiers At One Time, the number approved in their development plans. Sherwin Bowl is designated as a potential winter sports area and a separate Environmental Impact Statement is being prepared. Any development will depend on results of that Environmental Impact Statement. Proposals for any additional development in the Mammoth/June area will be studied for cumulative environmental effects.

Prescription #16, Nordic Ski Area in the Draft, has been changed in the Final to Dispersed Recreation. This prescription permits developed nordic facilities only in conjunction with alpine base facilities or on the periphery of the prescription area. This will provide developed nordic opportunities while protecting the unique natural character of the area.

Off-highway vehicle (OHV) routes will be designated for both winter and summer use by updating the existing 1977 Interagency Motor Vehicle Use Plan. Poleta Canyon will be the only open OHV area on the Forest. All other OHV use will be restricted to designated routes.

The Sierra National Forest, as the lead forest, will recommend the Middle Fork of the San Joaquin River for Wild and Scenic River status. Until Congress acts on this recommendation, the river will be managed under Designated Wilderness and Wild and Scenic Rivers Prescriptions to protect its wild and scenic qualities.

Timber

The Allowable Sale Quantity will be reduced to 7.1 million board feet from the current 10.5 million board feet. This is enough to sustain markets while protecting other resource values of the Forest. Only 75,233 acres will be included in the suitable timber base.

Predominantly pure red fir stands in the San Joaquin Ridge area between Mammoth Lakes and June Lake are excluded from harvest for this planning period to protect scenic, recreation, and wildlife values in this popular recreation area. However, an additional 14,000 acres of mixed conifer timber type on 30 to 60 percent slopes could be harvested if stumpage values increase or technology such as helicopter logging becomes an economically viable harvest method. This has the potential to increase the Allowable Sale Quantity by approximately 1.3 million board feet per year.

Only uneven-aged management will be used in timber stands west of U.S. 395 to preserve visual, recreation, and wildlife values in the Mammoth/June area. Even-aged silvicultural practices will be applied east of U.S. 395. The method selected will be determined on a site-specific basis, and clearcutting will be used only where it is the optimum silvicultural method.

Fuelwood available to local users will increase slightly from the current supply of 10,000 cords to 10,600 cords annually.

Water

Forest-wide Standards and Guidelines emphasize the protection and restoration of riparian areas and include direction for locating facilities, managing livestock, applying strict standards for earth-disturbing activities, and limiting specific activities.

Desert springs will be protected and all range, fish and wildlife habitat improvement projects and silvicultural prescriptions will maintain or enhance the condition of riparian areas.

Watershed improvement is scheduled for 350 acres annually during the planning period.

Wilderness and Research Natural Areas

The Plan recommends 172,600 acres for wilderness designation, including the Table Mountain and Tioga Lake Further Planning Areas and portions of the White Mountains and Paiute-Mazourka Further Planning Areas. Table Mountain adjoins the John Muir Wilderness along Bishop Creek; Tioga Lake adjoins Yosemite National Park along Tioga Pass; White Mountains lies at high elevations in the Whites adjoining the Ancient Bristlecone Pine Forest and encompasses the Boundary Peak area in Nevada; and Paiute-Mazourka includes a large part of the Inyo Mountains.

All areas recommended for wilderness will be managed to maintain their wilderness attributes until Congress acts on these proposals. Further Planning Areas not recommended for wilderness will be managed under a variety of management prescriptions appropriate to their resources and existing uses.

The Plan recommends Whippoorwill Flat in the northern Inyo Mountains, representing the pinyon pine ecosystem, and McAfee Meadow in the Whites, representing the alpine fellfields ecosystem, for Research Natural Area status.

Wildlife and Fish

Forest-wide Standards and Guidelines will ensure habitat diversity adequate to provide for diverse and productive fish and wildlife populations. Habitat for all threatened and endangered species will be protected or enhanced to meet recovery goals. Special prescriptions have been developed for mule deer and mountain sheep habitat.

Budget

The Plan calls for an annual budget of $12.5 million, an increase of $5,100,000 over the current annual budget. Implementation of the Plan will depend on annual allocations from Congress. If annual budgets are significantly less than the Plan requires, some objectives and outputs may not be met. In that case, an amendment or revision of the Plan may be needed.

II. ALTERNATIVES CONSIDERED

Description of the Inyo National Forest

The Inyo National Forest covers 1.9 million acres in the Eastern High Sierra region of California and Nevada. It contains unique scenic and ecological sites such as Mt. Whitney, the highest mountain in the contiguous U.S. at 14,495 feet; Mono Lake; the Ancient Bristlecone Pine Forest; the Sierra Nevada, White, Inyo and Glass Mountains; the Palisades Glacier; and the Mono Craters. It serves as the principal watershed for Mono Lake and supplies water to the Los Angeles Basin. The Inyo has major winter and summer recreation areas, ranking third in recreation visits among National Forests nationwide. The Inyo contains the Mammoth Mountain and June Mountain Ski Areas; portions of the Hoover, Ansel Adams, John Muir, Golden Trout and South Sierra Wildernesses; the newly-designated North Fork and South Fork of the Kern Wild and Scenic Rivers; sections of the Pacific Crest Trail; the Mono Basin National Forest Scenic Area; and the Devil's Postpile National Monument, which is administered by the National Park Service.

Congress designated the North and South Forks of the Kern River as Wild and Scenic Rivers in 1987. A management plan for the rivers will be developed by the Inyo and Sequoia National Forests. The plan will determine wild, scenic, and recreation classifications for segments of the river; establish management objectives for each segment; determine river area boundaries; and establish management direction and appropriate levels of recreation use and development to protect wild and scenic values.

Six alternatives for managing the Inyo National Forest were analyzed in detail.

1. PRF: Preferred Alternative: This alternative balances commodity and amenity resources, with special emphasis being given to recreational values including uses based on fish and wildlife.

2. CUR: Current (1982) Program-No Action: This alternative continues the current management program.

3. RPA: Meet Targets and Goals of the 1980 Resource Planning Act Program: This alternative provides moderate to high outputs of commodities and selected amenities.

4. CEE: Maximize Cost-Efficiency: This alternative selects the most cost-efficient mix of management practices on the Forest.

5. AMN: Maximize Amenity Values: This alternative maximizes amenity outputs.

6. AMB: Emphasize Wildlife and Recreation: This alternative primarily emphasizes wildlife habitat with moderate expansion of the developed recreation program. Commodity outputs would be secondary to wildlife and recreation objectives.

III. RATIONALE FOR THE DECISION

In selecting the Preferred Alternative, I considered both monetary and non-monetary costs and benefits, the capability of the land, the need for protection of resources, concerns expressed by people interested in the Forest, advice received from other agencies and resource professionals, and the legislative mandate of the Forest Service. Therefore, national, regional, state, and local objectives were considered in making the decision.

The Preferred Alternative provides management direction that will result in the greatest long-term benefits to people, including the benefits of a healthy, diverse, and productive Forest environment. It provides a mix of amenity and commodity resources at reasonable levels and addresses the range of public concerns more effectively than the other alternatives.

The Amenity Alternative does not place enough emphasis on commodity outputs needed by local and regional industries and businesses; the Wildlife and Recreation Alternative emphasizes only those resources; the Current and Cost-Efficient Alternatives do not meet expressed demands for provision of non-market resources; and the RPA Alternative produces levels of outputs that exceed projected demands for resources from the Forest.

Response to Public Comments and Management Concerns

I chose the Preferred Alternative because it best responds to the following issues identified from public comments on the Draft Environmental Impact Statement.

1. Management of the Mammoth/June Area

   Issue: The Mammoth/June Area is defined by State Highway 203 on the south; U.S. 395 on the east; the Ansel Adams Wilderness on the west; and the June Mountain ridgeline on the north. Representatives of the alpine ski industry and the operators of the Mammoth and June Mountain Ski Areas did not want the Plan to limit development in this area. On the other hand there was public concern that any development, whether skiing or geothermal, would degrade the environment and be unsupportable because of water shortages and an inadequate transportation system and public utilities. There was also public support for maintaining the semi-primitive character of the area, protecting old-growth red fir stands, and providing additional recreation opportunities.

   Plan response: Ski area development is limited to the approved plans of the Mammoth and June Mountain Ski Areas and development of Sherwin Bowl, if approved following environmental analysis and public comment. Additional significant development of any kind on National Forest System lands in the Mammoth/June area will require a study of cumulative effects.

Old-growth red fir stands in the San Joaquin area will not be harvested during this ten- to fifteen-year planning period. The public believed that harvesting red fir in this heavily used recreation area would destroy the area's character. Timber stands west of U.S. 395 will be harvested using uneven-aged management techniques to protect the recreation and visual values of the area.

2. Timber Management

Issue: Many people were concerned about the Allowable Sale Quantity. People dependent on the wood products industry advocated current or higher levels of timber production ranging up to the Resources Planning Act target of 16.8 million board feet. Other people expressed concern for possible adverse effects on scenic quality and wildlife and favored reduced harvests or no harvesting at all. There was support for use of uneven-aged management techniques either partially or exclusively on all timber lands. Some people opposed harvesting red fir in the Mammoth/June area and harvesting of Jeffrey pine because it would reduce the old growth component on the Forest.

Plan response: The Allowable Sale Quantity is reduced to 7.1 million board feet annually from the current 10.5 million. Predominantly red fir stands in the San Joaquin Ridge area will not be harvested during the planning period. However, about 14,000 acres of mixed stands of mostly Jeffrey pine and lodgepole pine on 30 to 60 percent slopes outside the red fir component could be harvested.

Jeffrey pine will be harvested to provide a continuing supply of wood to local markets. Most of the Jeffrey pine stands are east of U.S. 395 and receive little recreation use. Appropriate even-aged harvest methods will be used. Clearcutting will be used only where it is the optimum method to meet silvicultural objectives for the site. Forest-wide Standards and Guidelines will ensure adequate dispersion of old-growth stands of all forest types throughout the Forest.

Uneven-aged management will be used in the Mammoth/June area west of U.S. 395. Because uneven-aged harvest methods require only small openings, there will be less impact on visual and recreation resources in this heavily used area. High recreation values in this area justify the increased harvest costs associated with uneven-aged management.

3. OHV Management

Issue: Off-highway vehicle users wish to continue or increase opportunities currently available. Other people favor additional restrictions on both off-highway vehicle (OHV) and over-snow vehicle (OSV) use.

Plan response: The Poleta Canyon area will be the only open OHV area on the Forest. The existing 1977 Interagency Motor Vehicle Use Plan will be revised to conform with the Prescriptions and Standards and Guidelines of the Forest Plan. This will be done with public participation as part of Forest Plan implementation. Both OHV and OSV routes will be designated.

Some people interpreted Prescription #18 in the Draft Plan as permitting OHV use everywhere and Prescription #17 as permitting increased OHV use. They were concerned that increased OHV use on the Forest would have significant adverse effects on the environment. Both prescriptions have been rewritten.

Prescription #17 which was Limited Access in the Draft is now defined as Semi-Primitive Recreation with that emphasis in management direction. OHV opportunities will not be reduced. The Prescription states: "Allow OHV use only on designated roads and trails and in the Poleta Canyon designated open area. Allow OSV use off roads and trails unless restricted by the Winter Motor Vehicle Use Map."

Prescription #18 which was Open Roaded in the Draft is now defined as Multiple Resource Area and provides for a wide variety of recreation experiences. OHV opportunities may be increased if additional routes are designated in the revised Interagency Motor Vehicle Use Plan. The Prescription states: "Allow OHV use on both existing and new planned routes. OSVs may be used off roads and trails unless restricted by the Winter Motor Vehicle Use Map."

Restrictions will be established to prevent resource damage from OHVs under all prescriptions.

4. **Range Management**

Issue: Many people expressed concern that increased livestock grazing use would adversely affect riparian areas, water quality, and fish and wildlife habitat.

Plan response: Grazing opportunities will remain at the current level of 41,400 Animal Unit Months annually. More restrictive Riparian Area Standards and Guidelines have been developed for the Plan to protect riparian areas and fish and wildlife habitat. Riparian areas will be restored. Projects to increase the quality and amount of forage outside riparian areas will be used to help offset reductions in grazing caused by restrictions on access to riparian and other sensitive areas.

5. **Wilderness**

Issue: Comments on wilderness ranged from "no additional wilderness" to "designate all Further Planning Areas and areas released under the California Wilderness Act of 1984 as wilderness." Some people expressed concern for protection of the wilderness attributes of Further Planning Areas not recommended for Wilderness.

Plan response: The Draft Plan had proposed 112,600 acres for wilderness designation. The Final Plan recommends an additional 60,000 acres bringing the forest total to 737,742 acres or 38 percent of the land base. The proposed areas are Table Mountain and Tioga Lake Further Planning Areas and portions of the White Mountains and Paiute-Mazourka Further Planning Areas. Wilderness recommendations are based on the wilderness attributes of the areas and the presence of existing uses that would confict with wilderness management. Wilderness values will be protected prior to designation. Further Planning Areas not recommended for Wilderness designation will be managed under various prescriptions appropriate to their resources and current uses.

Additional specific concerns of the public are addressed in the Public Response Appendix.

Economic Efficiency of Alternatives

The Cost-Efficient Alternative has the highest Present Net Value, followed by the RPA Alternative. However, these alternatives do not reflect the high values Forest users place on non-market resources. If these alternatives were implemented, amenity values would be reduced. The overall desire of people for a natural-appearing landscape and other amenities is not adequately reflected in economic analyses. In many cases the scenic, recreation, and environmental values of the Inyo National Forest outweigh any potential economic returns from commodity products.

The Preferred Alternative was selected because it provides for more wildlife, fish, recreation, and visual resource benefits on the Forest than the Cost-Efficient Alternative. The Preferred Alternative is not the most economically efficient alternative, but it does provide the highest net public benefits. These benefits include such market outputs as energy, minerals, range, developed recreation, timber, and water supply; and such non-market outputs as scenic quality, dispersed recreation opportunities, fish and wildlife, and wilderness.

Contribution to Regional Production of Goods and Services

The Preferred Alternative will substantially increase skiing and other winter sports opportunities as well as a wide range of summer recreation activities including fishing, hiking and wilderness travel. These opportunities will primarily serve residents of Southern California who make up the major share of forest visitors.

Energy provided through geothermal development, power line rights-of-way, and small hydroelectric development on the Forest is also used mostly by Southern Californians. Forest water resources supply residents of the Los Angeles Basin. Mineral and range outputs from the Forest benefit the entire State and will continue to be provided under the Preferred Alternative, subject to appropriate Standards and Guidelines for protecting other resources.

Social and Economic Stability

Effects on jobs, revenues, lifestyles, and costs to the local economy were considered in choosing the Preferred Alternative. Public lands make up an overwhelmingly large share of the land base within those counties where the Forest is located. The resource and amenity values and recreation opportunities provided on the Inyo significantly affect the livelihood of the residents of those counties on public as well as private lands.

The Plan emphasizes protecting and improving scenic quality while continuing a level of timber harvest, grazing, energy, and mineral production that will not significantly curtail historic uses of the Forest. It best meets social and economic concerns by providing for additional development that is compatible with environmental quality goals and allows for more public use of the Forest to ensure that local lifestyles are not adversely affected. The Inyo will follow a policy of non-discrimination in providing work and recreational and educational experiences for the community and will promote active participation by all segments of the public.

Environmentally Preferred Alternative

The Amenity Alternative is the environmentally preferred alternative because it entails the least amount of resource development and public use. All other alternatives provide for higher levels of use and the environmental impacts associated with various resource developments. All alternatives, however, limit the effects of resource development and use to levels that are within legal standards.

Compatibility with Other Public Agency Goals and Plans

The goals and plans of other agencies and governmental bodies affected by implementation of the Plan were considered throughout the planning process. The Preferred Alternative incorporates information and recommendations received from many specialists in various agencies.

A number of agencies responded to the Draft Plan and their concerns were addressed in the Final Plan where appropriate. Agencies and governmental entities are contacted in the preparation of project-level environmental analyses and have the opportunity to comment on specific proposals. Continued coordination and cooperation with other resource agencies and local governments during implementation of the Plan will ensure that public needs are being met in the most economical and effective way.

Reasons for Selecting the Preferred Alternative

The Preferred Alternative was chosen because it best meets the needs of people, including concerns for environmental quality. While other alternatives may be more desirable with respect to any particular consideration, none provides as good a mix of resource benefits and uses while maintaining a healthy and diverse natural environment.

The Preferred Alternative expands recreation opportunities; continues to supply wood products, minerals, and energy in an environmentally sensitive manner; sustains the current range program while protecting riparian areas;

protects and improves wildlife and fish habitat; recognizes the importance of scenic quality; protects soil and water resources; and recommends significant additions to the National Wilderness Preservation System.

The Preferred Alternative best meets people's needs as identified by the entire public involvement process including responses to the Draft Plan and Environmental Impact Statement; resource needs as identified by resource professionals; and National Forest management mandates as identified in the Multiple-Use Sustained Yield Act of 1960, the National Forest Management Act of 1976, and their accompanying regulations. It provides the best mix of resource management activities considered appropriate for existing conditions or those that are predicted to be needed during this ten- to fifteen-year planning period.

The Preferred Alternative provides a balance between the environmentally preferred alternative and the most economically efficient alternatives. Although resource development and use provided by the Preferred Alternative will cause more impact on the natural environment than the Amenity Alternative, Forest-wide Standards and Guidelines and Management Prescriptions will ensure that the natural environment is protected.

The Preferred Alternative was selected over the Amenity Alternative for the following reasons: higher receipts, greater employment opportunities and economic benefits for all social groups, more potential for mineral development, more Animal Unit Months, a wider range of recreation opportunities, more timber produced.

The Preferred Alternative was selected over the RPA and Cost-Efficient Alternatives for the following reasons: better balance of resources and uses to meet the overall needs of people; better protection of cultural and biological resources, including old-growth forest, wilderness, deer habitat, snags, riparian habitat, and visual resources; lower management costs.

I judge that the Preferred Alternative will provide the greatest long-term public benefit when compared with the other alternatives that were considered in detail and have selected it to be the Plan for management of the Inyo National Forest for this planning period.

IV. IMPLEMENTATION, MITIGATION AND MONITORING

The Plan will be implemented no sooner than thirty days after the Notice of Availability of the Plan, Environmental Impact Statement and Record of Decision appears in the Federal Register. The time needed to bring all Forest activities into compliance with the Plan will vary.

Actual annual budgets will affect the rate of implementation of the Plan and the amount of goods and services produced in any given year but should not affect overall goals and direction. If the Forest Service determines that overall goals and direction of the proposed plan cannot be achieved, and that environmental objectives could be adversely affected because annual budgets differ from required budgets, the Plan may be revised or amended. This can only be determined as the Plan is implemented and monitored. For reference, the average annual budget for the Forest from 1985-1987 was $7,400,000. Implementation of the Plan will require a budget of $12,500,000.

As soon as practicable after approval of the Plan, the Forest Supervisor will ensure that all outstanding and future permits, contracts, cooperative agreements and other instruments for occupancy and use of National Forest land are consistent with the management direction of the Plan, subject to valid existing rights. This is required by 16 USC 1604(i) and 36 CFR 219.10(e).

Implementation will be guided by the management requirements contained in the Goals, Objectives, Forest-wide Standards and Guidelines, Prescriptions and Management Area Direction identified in Chapter IV of the Plan. These management requirements were developed through an interdisciplinary effort and contain measures necessary to mitigate or eliminate any long-term adverse effects resulting from activities on the Forest.

Outputs associated with Plan implementation may be adjusted as a result of new information and technology. Management direction in the Plan will be incorporated in the analysis of all proposed activities.

The purpose of the monitoring program is to evaluate whether Forest Goals and Objectives are being met, to determine how closely management requirements are followed, to assist in the assessment of the environmental condition of the Forest, and to determine whether an amendment to the Plan or a revision is needed.

The results of monitoring and evaluation will be used to measure the progress of Plan implementation and to determine when an amendment to the Plan or a revision is needed.

V. PLANNING RECORDS, AMENDMENTS AND REVISIONS, AND ADMINISTRATIVE REVIEW

Planning Records

Planning records contain detailed information and document decisions used in developing the Plan and Environmental Impact Statement as required in 36 CFR 219.12. Documentation detailing the Forest planning process is available for inspection during regular business hours at:

Inyo National Forest
Forest Supervisor's Office
873 North Main Street
Bishop, California 93514

These records are incorporated by reference into the Plan and Environmental Impact Statement.

Amendments and Revisions

The National Forest Management Act requires revision of the Plan at least every fifteen years. The Plan may be revised at any time when 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 the Forest's program.

The Plan may also be amended. The Regional Forester will approve any significant amendments to this Plan. Determinations of significance or non-significance are appealable under 36 CFR 211.18 and will be documented in a Decision Notice.

Project decisions will require additional site-specific environmental analyses in compliance with the National Environmental Policy Act. As provided in 36 CFR 219.10, this decision will remain in effect until the Plan is revised.

Right to Administrative Review

This decision is subject to appeal in accordance with the provisions of 36 CFR 211.18. Notice of appeal must be in writing and submitted to:

Paul F. Barker
Regional Forester
Pacific Southwest Region
USDA, Forest Service
630 Sansome Street
San Francisco, California 94111

The notice of appeal, a statement of reasons to support the appeal, and any request for oral presentation must be filed within 45 days after the date of this decision.

Recommendations for wilderness designations are not appealable, as this decision is the purview of Congress. However, decisions regarding interim management of these areas pending action by Congress are appealable. Also, recommendations for Research Natural Areas are not appealable.

An appeal of my decision, in and of itself, does not stop implementation of the Plan, as a stay of this decision must be specifically requested. A stay may be requested at any time during the appeal period until a decision on the appeal is made by the Chief of the Forest Service.

No decisions on site-specific projects are made in this document, although a number of projects are identified. Those identified projects are included to show that the Plan's goals and objectives are achievable. Final decisions on site-specific projects will be made during subsequent implementation of the Plan after appropriate analysis and documentation consistent with National Environmental Policy Act requirements. These decisions are appealable.

Paul F. Barker

PAUL F. BARKER
Regional Forester

AUG 12 '88

Date

END
OF
PHYSICAL
FILE