APPENDIX D

Implementation of this Forest Plan will change the composition of timber types on the Forest over time. Table D-1 displays the present and future forest conditions. Table D-2 summarizes the present and future forest type and age composition. Table D-3 displays the forest type and age composition AFTER the first period. Table D-4 displays the forest type and age composition AFTER the fifth period. Table D-5 displays the forest type and age composition FOR the twentieth period. The Forest would be capable of maintaining a long-term sustained yield of 1.54 million cubic feet annually (achieved the twentieth period).

TABLE D-1 PRESENT AND FUTURE FOREST CONDITIONS

	Unit of Measure	Suitable Land	Unsuitable Land
CURRENT FOREST:			
Growing stock	MMCF MMBF	151.0962	N/A
Live cull	MMCF MMBF		
Salvagable dead	MMCF MMBF		
Annual net growth	MMCF MMBF	1.389	N/A
Annual mortality	MMCF MMBF		
FUTURE FOREST:			
Growing stock	MMCF	181.8779	
Annual net growth	MMCF	- 0.579	
Rotation age	Years	120 to 130 1/	

1/ Average rotation age for regenerated stands on lands with timber emphasis.

TABLE D-2 TIMBER AGE-CLASS OF THE TOIYABE NATIONAL FOREST
Current and Future (Based on FORPLAN)

Age Class	Acreage		
	Now	50 Years	200 Years
0 - 10	4,125		
11 - 20		1,774	2,358
21 - 30		2,138	3,210
31 - 40			2,041
41 - 50	4,167	4,125	2,772
51 - 60	16,870		446
61 - 70			8,355
71 - 80			
81 - 90		4,167	1,483
91 - 100		16,870	483
101 - 110			3,721
111 - 120	11,913		783
121 - 130			842
131 - 140			806
141 - 150	14,584		1,034
151 - 160		10,263	
161 - 170	18,924		
171 - 180			1,361
181 - 190		14,406	
191 - 200			
201 - 210		16,839	
211 - 220			2,097
221 - 230			6,624
231 - 240			
241 - 250			
251+			32,166

TABLE D-3 SPECIES AND AGE CLASS COMPOSITION OF THE FOREST AFTER THE FIRST PLANNING PERIOD (DECADE)

FOREST TYPE			
Age	Jeffrey Pine	Mixed Conifer	Lodgepole Pine
	Acres		
10			
20	2,580	1,079	467
30			
40			
50			
60		2,648	1,519
70	16,870		
80			
90			
100			
110			
120			
130	11,913		
140			
150			
160			14,584
170			
180		18,924	
190			
200			
210			
220			
230			
240			
250+			

TABLE D-4 SPECIES AND AGE CLASS COMPOSITION OF THE FOREST AFTER THE FIFTH PLANNING PERIOD (DECADE)

FOREST TYPE			
Age	Jeffrey Pine	Mixed Conifer	Lodgepole Pine
	Acres		
10	336		
20		276	169
30		842	
40		806	
50	1,538	458	178
60	511	1,627	
70	43	2,702	
80	2,580	1,079	467
90			
100			
110			
120		2,648	1,519
130	16,870		
140			
150			
160			
170			
180			
190	9,486		
200			
210			
220			14,237
230			
240		12,212	
250+			

TABLE D-5 SPECIES AND AGE CLASS COMPOSITION OF THE FOREST FOR THE TWENTIETH PLANNING PERIOD (DECADE)

FOREST TYPE			
Age	Jeffrey Pine	Mixed Conifer	Lodgepole Pine
	Acres		
10			
20	2,352	6	
30	719	2,492	
40		2,041	
50	43	2,729	
60	353	93	
70	8,251	104	
80			
90		1,483	
100		483	
110	2,371	1,350	
120	336	278	169
130		842	
140		806	
150	399	458	178
160			
170			
180	806	88	467
190			
200			
210			
220		579	1,519
230	6,624		
240			
250+	9,109	8,819	14,237

APPENDIX E

DEFORPLAN GOAL PRESCRIPTIONS

The National Forest Management Act (NFMA) regulations define management prescriptions as "management practices selected and scheduled for applications on a specific area to attain multiple-use and other goals and objectives." Generally, a management prescription is a set of treatments or practices to develop and/or protect some combination of resources on a particular land type.

The Interdisciplinary (ID) Team analyzed the management situation of the Toiyabe National Forest. As part of that analysis, they determined the minimum activities necessary to: conserve soil and water resources; prevent significant or permanent impairment of productivity of the land; maintain viable populations of existing native vertebrates; and prevent the destruction or adverse modification of critical habitat for threatened and endangered species. These activities set minimum management requirements and were imbedded in management practices and/or standards and guidelines for the prescriptions.

The ID Team compiled a list of management practices currently being used to resolve issues or concerns, and those needed to take advantage of resource development opportunities identified in the "Analysis of the Management Situation" (AMS). The ID Team, based on existing research, historical records, and professional expertise, examined practices to determine if they would provide resource protection, minimize serious or long-term hazards, protect streams, maintain diversity, etc. Where applicable, practices previously agreed to jointly by state and Forest Service personnel were selected. Research used in formulating practices for prescriptions is noted in the process records. [A summary listing is included in references.]

DEVELOPMENT OF MANAGEMENT PRESCRIPTIONS

To ensure an adequate range of management prescriptions for benchmark and alternative formulation, the ID Team, with assistance from resource specialists, developed a set of prescriptions with a variety of management emphases, intensities, practices, and standards and guidelines for each land type. These range from minimum level prescriptions with little active management to prescriptions containing high intensity management for timber, wildlife, recreation, and wilderness. The Current Management Benchmark/Alternative was defined through the management prescriptions representing all activities currently being practiced. Issues were analyzed and prescriptions were developed for their positive solution. Special prescriptions were developed for areas such as wilderness.

The primary silvicultural practice chosen for Toiyabe timber stands is shelterwood cutting. This practice was chosen because:

1. It provides for cost-efficient reforestation by natural regeneration supplemented with planting.

2. It provides the best conditions for establishment and survival of regeneration on harsh sites.

3. It provides the best situation for maintaining site productivity and for preventing soil loss (erosion).

4. It provides some control of regeneration of desired tree species.

5. It provides the best situation for maintaining aesthetic values on the Forest.

The specific volume amounts removed in the series of cuttings depends on the involved species regeneration requirements.

In areas where retention of aesthetic values is desired, individual tree selection cutting is used. This practice was chosen because:

1. It will meet the retention visual quality objective.

2. It provides for yields of timber from these areas.

3. It provides for establishment and survival of regeneration.

4. It also maintains site productivity and prevents soil loss.

The choice and use of any other management practice, however, is not ruled out by the preceding choices. The written silvicultural prescription for any particular stand will be the practice within multiple-use goals established for the area through this Plan. The majority of prescriptions will be shelterwood cutting: in retention zones it will be individual tree selection cutting (see Appendix D).

The following Table (TABLE E-1) shows the acres by management area prescription for each alternative. A list follows the table which describes the management area prescription, and gives the DEFORPLAN goal from which these prescriptions were derived.

TABLE E-1 ACRES BY MANAGEMENT AREA PRESCRIPTION
In Thousand Acres

Prescription	Management 1	Management 2	Management 3	Management 4	Management 5	Management 6	Management 7	Management 8	Management 9	Management 10	Management 11	Management 12
1. Wilderness-Designated and Recommended		16.0	4.9	72.7	135.1			94.4	31.0			42.5
3. Intensive Wildlife and Dispersed Recreation		74.2	32.4	46.1		405.2	173.4	441.5	377.1	496.9	6.3	
4. Stewardship Wildlife, Range, and Recreation							94.4		27.3			
5. Market Opportunities						14.0		5.1		54.0		
6. Wild Horses, Wildlife, and Dispersed Recreation						186.0				177.6		
8. Intensive Dispersed Recreation Wildlife, and Current Developed Recreation											9.1	
10. Moderate Timber and Range	25.0											
11. Market Opportunities and Developed Recreation			77.3	84.9							.1	

Management Area Prescription

1. Wilderness - Designated and Recommended - This prescription (Rx) is designed to manage the established and recommended wilderness area to meet objectives and intent of the Wilderness Act (GOAL 6 in DEFORPLAN).

3. Intensive Wildlife and Dispersed Recreation - This Rx emphasizes the amenity values of wildlife and dispersed recreation (GOAL 4 in DEFORPLAN).

4. Stewardship Wildlife, Range, and Recreation - This Rx is a maintenance level program close to current level management (GOAL 3 in DEFORPLAN).

5. Market Opportunities - Rx emphasizes Timber/Range programs (GOAL 5 in DEFORPLAN).

6. Wild Horse, Wildlife and Dispersed Recreation - Rx is similiar to Rx 3 except emphasizes Wild Horse Management in the areas of significant wildhorse populations (GOAL 4 in DEFORPLAN).

8. Intensive Dispersed Recreation, Wildlife, and Current Developed Recreation - This Rx is similar to Rx3 except it applies to heavily developed recreation areas on the Forest. Emphasis is dispersed recreation and wildlife while maintaining developed recreation at current levels.

10. Moderate Timber and Range - Rx emphasizes timber/range at moderate levels of management intensity (GOAL 5 in DEFORPLAN).

11. Market Opportunities and Developed Recreation - This Rx emphasizes developed recreation, range, and timber with primary emphasis on recreation (GOAL 5 in DEFORPLAN).

SUMMARY OF DEFORPLAN PRESCRIPTION DESCRIPTION, AND STANDARDS AND GUIDELINES

Six prescriptions were developed for running the DEFORPLAN model. For purposes of discussion these prescriptions have been termed Goal 1 through Goal 6. Each Goal is a prescription of differing emphasis which provides a mix of resource management practices and outputs. This differing emphasis and the resulting mix are essential to enabling the DEFORPLAN model to select the most cost-effective way of managing various areas or resources and the Forest as a whole.

Forest-wide standards and guidelines were developed for each resource within all goals. These "functional" standards and guidelines are provided to establish the management practices to be applied through each goal. Emphasis and intensity of these standards and guidelines are directly correlated with management emphasis by goal. For example, the range or timber resource will not be managed at the same level on all areas of the Forest. Where there is an emphasis on recreation, standards and guidelines were developed for range, timber, and recreation, to maintain and enhance recreational opportunities. These are different from standards and guidelines for areas where range or timber management is emphasized. (For a more detailed presentation, the reader should refer to the document "Forest Plan Guidelines and Standards, October 1983" on file at the Forest Supervisor's Office in Sparks, Nevada.)

No one goal and particular set of standards and guidelines were selected for the entire Forest. Instead, combinations of goals, selected through DEFORPLAN, will be implemented on management areas throughout the Forest.

GOAL 1 - Minimum Level Management Prescription

Purpose: A management thrust that emphasizes the Administration's base-level program (a budget 25 percent less than fiscal year 1982).

DEFORPLAN Level 7 (Management Emphasis) Identifiers for Goal 1:

--Goal 1 - Applied to all analysis areas in central Nevada and Mount Charleston portions of the Forest.

--Timber 1 - A Goal 1 prescription applied to all commercial timber analysis areas on the Carson District (Sierra).

--Timber Haul 1 - A Goal 1 prescription applied to all commercial timber analysis areas on the Bridgeport District (Sierra).

--Range 1 - A Goal 1 prescription applied to all noncommercial timber analysis areas in central Nevada and range allotment analysis areas in the Sierra.

Major Forest-wide "Functional" Standards and Guidelines by Resource:

Recreation. There will be minimum recreation planning only to protect public safety and high-value resources. Only high-risk EAs will be reviewed. Visual quality will be retained. Cursory trail inventory records will be maintained. Patrols will be performed on priority developed sites when possible. Priorities will dictate the closure or removal of noncost-effective sites. Fees will be collected at cost-effective fee sites. Sites will be closed when resources show heavy damage. Public hazards will be corrected in

operating sites, but beyond this, they will generally be maintained to RIM Condition Class 1. Trail maintenance efforts will be directed to protect public safety first. Law enforcement efforts will be directed where environmental engineering and education have been unsuccessful, and where damages/losses are most significant.

Cultural Resources. Cultural resource inventory and evaluation is will be project-related only, with maximum use of paraprofessionals. Avoidance will be emphasized to protect cultural resources, with data recovery and other mitigation measures used as necessary.

Wildlife. The necessary surveys, planning, prescriptions, monitoring, cooperation, and administration will be provided to maintain viable wildlife populations. Wildlife studies will be established and conducted within general guidelines. Studies will be limited to MIS. Habitat management plans will be written for all areas with a wildlife management emphasis. All planning, surveys, and inventories will be coordinated with other resource elements. Project-related work will be significantly decreased. Efforts will be made to remove wildlife species from the Threatened and Endangered list. The consultation process will be conducted. Interagency cooperation with the Nevada Department of Wildlife and California Fish and Game Department will be continued as outlined in the Memorandum of Understanding. Structural and nonstructural habitat improvements will be used to maintain or enhance viable populations of wildlife on the Forest, and will be restricted to MIS.

Range. Allotment management plans (AMPs) currently in effect for moderate and low priority allotments will be maintained commensurate with available resources. No new AMPs will be implemented nor will AMPs requiring a major revision be updated. The Annual Operating Plan (AOP) will serve as management instructions for allotments falling in these latter two categories.

Range analysis, new or updated, will be completed only when the information is critical to making management decisions concerning resource damage by livestock or big game.

Range improvements, both structural and nonstructural, will be designed only for arresting range deterioration. Grazing permittees are responsible for maintenance of structural range improvements assigned to them in the grazing permit. The Forest Service is responsible for maintenance of range improvements necessary to administer allotments; e.g., administrative site pastures and corrals.

Cooperation with other federal agencies, state agencies, interest groups, and the general public will continue commensurate with the allotment situation. Emphasis will be on building and maintaining a good working relationship with permittees. Implementing interagency agreements with the BLM to simplify management and administration of rangelands that form a natural unit but which are managed and administered by both agencies will also be emphasized.

Priority in control of noxious farm weeds will be given to projects that involve cooperation with state and county agents, weed control districts, private interests, and multiple Forest Service functions; e.g., range, wildlife, roads and trails, recreation, timber, watershed.

Technical assistance and training concerning the Forest Sensitive Plant Program will be conducted. Assistance priority is given to projects that

would impact plant populations having an endangered or threatened status or which would impact critical habitat.

Wild Free-Roaming Horses and Burros. Management will be in accordance with the Wild Free-Roaming Horse and Burro Act of 1971 and subsequent regulations. Territory management plans will be maintained to the extent that the population level is in balance with the habitat. Vacant territories and territorial boundaries will remain status quo. Interagency agreements between the BLM and the Forest Service will be followed to the extent that resources allow. Emphasis on maintaining a good working relationship with wild free-roaming horse or burro interest groups will continue as will cooperation and coordination with state and county agencies.

Timber. The Timber Management Information Systems (TMIS) will be maintained annually. Other control records will be maintained only as absolutely necessary.

Las Vegas timber stands will be managed to maintain desired stands for a forested appearance. Shelterwood, selection, sanitation, or a special silvicultural standard will be utilized as needed to perpetuate timber appearances. Thinning cuts may also be applied to these stands.

Pinyon/juniper will be managed to perpetuate these stands for range and wildlife forage and habitat, pine nuts, fuelwood, and other products.

Limited timber harvest management activities such as fuelwood removal, timber stand improvement, planting, or stand examination will be permitted within unregulated forested lands.

Pesticide chemicals for timber management purposes will be used in accordance with established policy and procedure. Chemicals will not normally be used within riparian areas for timber management purposes.

Silvicultural examinations will be conducted to provide data for timber projects. Standards for examination procedures are contained in the current Regional publication, "Stand Examination Procedures." A detailed written silvicultural prescription is required before timber vegetative manipulation or cultural treatment takes place. Exceptions include removal of trees that block vision along roads, removal of hazard trees, right-of-way clearing, mining operations, and minor and incidental amounts of fuelwood. Stand examinations will only be done to identify stands with insect or disease problems that need treatment to prevent spread.

Tree crops or tree cover on lands classed as forested will be established. Standards for planting and seeding are in FSH 2409.266 - Reforestation Handbook. Cone collection is part of the reforestation process and standards are in FSH 2409.26f - Seed Handbook. All backlog planting areas will be examined for existing tree stocking, economics of planting, and site growth capacity prior to deciding to plant the area. Natural regeneration will be relied on more than planting. Reforestation areas will be fenced if needed to prevent damage from sheep and cattle grazing. On all reforestation areas the need for control of animals will be evaluated to protect planted, seeded, or naturally regenerated stands from damage; this will be coordinated with wildlife management. Reforestation to desired stocking levels will be done within five years of final harvest cut. Stocking levels are shown in FSH 2409.26b - Reforestation Handbook. Reforestation needed per existing KV plans will be completed.

Intermediate cuttings and other treatments to improve the composition, condition, and growth increment of timber stands will be made. Excess small material in the stand will be utilized for products when possible. The best residual basal area will be utilized to maximize stand growth. Timber stand improvements needed per existing KV plans will be completed. Timber will be managed at a low level. There will be no sawlog sales, but resource production capability will be maintained. Timber sale preparation administration will be applied in and around developed recreation sites and in insect and disease control work. Integrated pest management will be incorporated in all sale planning, preparation, and administration activities.

Tractor logging generally will be permited on slopes of 35 percent or less, and on 30 percent or less for granitic soils. Site-specific environmental assessments to modify for tractor logging on steeper slopes to fit ground conditions will be used. Single tree selection and salvage standards for a minimum of 100 feet from the edges of all perennial streams, lakes, and other bodies of water will be used. For wildlife purposes a minimum number of snags will generally be left: 1) on timber land leave .72 snags/acres; 2) on aspen/riparian areas leave 1.72 snags/acres; and 3) around openings leave four snags/acres. Along major highways (state and federal), the selection standard will be applied.

Around developed recreation sites, sanitation (salvage) timber removal will be allowed only within 200 feet. Individual tree selection standard will be allowed only within the next 100 feet. The above standards apply unless a major change in vegetation occurs (such as a stand becomes old growth and has a high hazard potential), and work must occur within the developed site to change the vegetation; or a vegetative management plan is specifically developed for the site, in which case the treatments so developed would be applied.

No new commercial sawlog sales will be made. Administration of existing timber sale contracts will continue until all contracts are closed. A low level of timber products (mostly fuelwood) will be provided from the pinion/juniper component and from insect and disease control work in Jeffrey pine, mixed conifer, and lodgepole pine components. Sale administration will follow regional standards in log and load accountability, financial management (TSA), scaling, and check scaling.

Fuelwood may be sold or made available for free-use as an integrated part of timber management. Sale procedures, administration, and collections will follow uniform procedures. Workroads needed but not available under the existing system to access fuelwood areas may be constructed, maintained, and closed as funds permit and if environmentally sound.

Districts will evaluate the pine nut crop annually and determine if and where suitable areas exist for harvesting. These are to be readily accessible by vehicle. They will be delineated on a district administrative map. The map will become the basis for the sale program for the year. Contributed funds (collections) will be utilized for road construction and/or maintenance to encourage use of forest products which otherwise would not be merchantable. Commercial pine nut sales will be advertised and sold on a bid basis unless demands can be met and "over-the-counter" sales can be justified.

Personal-use sales of Christmas trees for management purposes of pinyon/juniper will be utilized. In areas where Christmas tree sales are

made, care will be taken to assure that the stand is not high-graded or that stocking is reduced to an unsatisfactory level.

Post and pole sales will be utilized for management of overstocked pinyon/juniper stands. Post and pole sales can also be made in overstocked stands of other species.

Pinyon/juniper areas will be thinned or cut for multi-resource benefits including wildlife habitat improvement, increased range forage production, and to meet the demand for fuelwood. Commercial sales will be made in various sizes to encourage small and large businesses. Contributed funds (collections) can be utilized for road construction/maintenance costs to provide access and protection of areas which would otherwise be unmanaged. A fuelwood policy for the Forest will be developed. The fuelwood policy will be reviewed and updated annually as needed.

A forest pest management program will be planned, directed, and coordinated on the Forest. Survey and suppression activities will be utilized to manage forest pests. Insect and disease problem areas will be monitored and control measures taken to attempt to prevent spread of the problems off the Forest. Insect and disease problem areas that are not likely to spread off the Forest will be monitored. Treatment measures will be attempted: 1) if trees of commercial species included in the timber base are killed and if there is potential for rapid spread of the insect or disease; and 2) if the insect or disease problem is judged to be in an epidemic stage (includes all species).

Activity-caused fuels (slash) will be removed or treated to reduce fuel hazards and to improve visual resources. Slash will be utilized for fuelwood where possible. Slash treatment activities will be coordinated with fire management, air quality, and wildlife habitat. Activity-caused slash in roadside zones will be treated. Within the rest of the activity area, only heavy concentrations of slash will be treated.

Detection, prevention, and investigation of violations of federal timber resource laws and regulations will occur. The law enforcement plan will reflect timber-related law enforcement problems. This plan will emphasize prevention measures. Timber needs .68 person-years under this goal.

Cultural resource surveys will be completed prior to any ground disturbing project.

Soil and Water. The necessary data base and planning will be provided for the best management of soil and water resources. Soil and water inventories will be fully coordinated with inventories of other resource units. Inventories will be reactionary to outservice initiated activities or for the protection of public health and safety. Areas will be rehabilitated where resource damage has occurred. Improvement projects will be considered when necessary to protect public health and safety. FERC hydroelectric projects will be handled on a case-by-case basis. Adequate water will be provided to maintain and provide for all national resource values and uses. The water rights program will remain constant throughout all of the prescriptions. Watershed improvement structures will be maintained to the point necessary to perpetuate their usefulness. Only those improvements needed to protect investments will be maintained. Monitoring levels will be reduced commensurate with the reduction in management practices.

Minerals. Geologic reports will be written in accordance with established procedures. All withdrawals and land exchanges will contain mineral evaluations. Virtually no general technical inventory and evaluation would be conducted. Mineral withdrawals will be virtually nonexistent, except for RNAs. Land acquisitions and exchanges will be at a minimum with a concomitant minimal need for mineral reports. There will be no inventory of either special geologic areas or common variety mineral materials. Validity examinations will be used to prevent unauthorized mining activities. Validity examinations will be conducted on all operations proposed within RNAs not withdrawn and wilderness areas (designated or proposed). Each Notice of Intent (NOI) or Operating Plan (OP) submitted will be processed in the same manner throughout all prescriptions. A detailed assessment of 70 percent of NOIs and OPs submitted on the Forest will be conducted. Each lease application submitted to the Forest will be processed in the same manner throughout all prescriptions. All proposed development plans submitted to the Forest will be acted on. Compliance checks will be conducted in accordance with established procedures. Contests and appeals will be handled on a case-by-case basis to ensure compliance with 36 CFR 228 regulations through adminstrative and judicial channels.

Fire Management. Fire Prevention is at Level 1. There will be minimum passive media management and coordination of seasonal restrictions, with token use of Cooperative Forest Fire Prevention (CFFP) materials. The public and other cooperators will be utilized in fire detection. Force account detection following electrical storms will be used in high-risk situations only. For primary initial attack capability approximating fiscal year 1981, 5100-9s will be maintained. Initial attack forces will productively support other elements and activities when presuppression objectives have been met and when not on fires. Use of cooperators and regional resources for secondary attack will be optimized. Minimal support will be used to maintain the organization. There will be no major capital investments. Initial attack suppression action and escaped fire suppression will be in accordance with current policy. Fuel management inventory, treatment of natural fuels, and fuel-break construction will not be performed for this prescription. Interagency opportunities to support inital attack capability will be optimized. Passive, fire-cause investigations will be performed.

Facilities. The transportation system will be planned, developed, and operated to provide user safety, convenience, and efficiency; and to accomplish land and resource management objectives. A transportation system review will be performed on the entire system to establish a basis for a road management policy which can be coordinated with land and resource management objectives by the management team. All engineering, construction, and reconstruction activities for arterial and collector roads are not applicable for this goal. For traffic management, analysis, control, and use of the Transportation System will be for the accomplishment of land and resource management goals. On-the-ground maintenance will be performed on an emergency basis, accomplishing only high priorities Forest-wide. All preconstruction engineering, construction engineering, and construction/reconstruction activities for all trails are not applicable to this goal. Facilities, administration, and operations (FA&O) construction and reconstruction are also not applicable to this goal. Structures will be maintained to no less than minimum standards for health and safety for the users. Potable water systems will be maintained and monitored for compliance with National Forest Service direction to protect the health of the public and Forest Service personnel. Wastewater collection systems and treatment works will be monitored and maintained to avoid creating health hazards, to restore the quality of water

resources, and to prevent future pollution. Technical inspection will be performed annually on all high and selected moderate and low hazard dams to monitor conditions and ensure that maintenance is accomplished to minimize hazards to downstream life and property.

GOAL 2 - A Current Level Prescription

Purpose: A prescription that uses the 1981 budget, activities, and outputs. This projects into the future the outputs that would occur if current activities were continued.

DEFORPLAN Level 7 (Management Emphasis) Identifiers for Goal 2:

--Goal 2 - Applied to all analysis areas in central Nevada and Mount Charleston portions of the Forest.

--Timber 2 - A Goal 2 prescription applied to all commercial timber analysis areas on the Carson District (Sierra).

--Timber Haul 2 - A Goal 2 prescription applied to all commercial timber analysis areas on the Bridgeport District (Sierra).

--Range 2 - A Goal 2 prescription applied to all noncommercial timber analysis areas in central Nevada and range allotment analysis areas in the Sierra.

Major Forest-wide "Functional" Standards and Guidelines by Resource:

Recreation. Same as Goal 1 with the following exceptions:
Recreation planning is at a slightly higher level, in response to issues and NEPA requirements and to ensure that recreation is fully analyzed as a key opportunity on the Toiyabe. This goal emphasizes VQOs and visual planning in all EAs. The existing trail plans will be maintained. RIM will be maintained to Forest Service Handbook (FSH) standards. The existing trail system inventory will be maintained. Developed sites will be patrolled daily during use season on the Carson (D-1), Bridgeport (D-2), and Las Vegas (D-5) districts; and every other day in central Nevada. This goal calls for striving to provide the current RIM managed season capacity while maintaining RIM Condition Class 2. Minimum legal requirements for ORV administration will be met. Trail reconstruction should be one mile per year based on management team priority. See Forest-wide standards and guidelines in the Plan for the trail maintenance schedule.

Cultural Resources. Same as Goal 1 with the following exceptions:
There will be participation with the SHPO in development of state-wide and Forest-wide archaeological plans such as the "Archaeological Element for the Nevada Historic Preservation Plan." For cultural resource inventory, areas are selected based on issues, values, risks, and input from the SHPO. A Forest-wide cultural resource overview, based on archival review will be developed. Cultural resources will be enhanced only after meeting project mitigation and protection needs. Cultural resource special use responses will be handled at 75 percent of maximum efficiency.

Wildlife. Same as Goal 1 with the following exceptions:
The process to establish, conduct, and analyze studies will not change through the management prescriptions. However, the number of studies implemented, or

the purposes for establishment will change. In addition, range studies will be conducted on a site-specific basis, particularily on those areas with a wildlife management emphasis. Plans and inventories will be developed on a case-by-case basis. The number of plans and/or inventories will increase over Goal 1. Project related work will increase. The level of monitoring will increase over Goal 1. Where not conflicting with other important resource values, threatened and endangered species will be relocated to unoccupied habitat. Consultation and cooperation will increase over Goal 1. Nonstructural improvements will be used for other wildlife in addition to MIS. Structural habitat improvements will be used for MIS, and other selected wildlife species.

Range. Same as Goal 1 with the following exceptions:
This prescription represents an approximate 25 percent increase in resource management over Goal 1, allowing a proportionate increase in implementation of the Forest Range Action Plan. Allotment management plans for high priority allotments will be maintained so that implementation of the plan is scheduled and objectives are met. AMPs for moderate priority allotments will be maintained to ensure that objectives to correct range deterioration are met. Low priority allotments will be maintained commensurate with available funding and resources.

Range Analysis is performed under Goal 1 criteria, but updating, other than new or major updates, is a normal task that is done as a part of maintaining AMPs for high priority allotments.

Wild Free-Roaming Horses and Burros. Same as Goal 1 with the following exception:
Emphasis is placed on removal of wild horses and burros that are increasing on National Forest System lands outside of their territories.

Timber. Same as Goal 1 with the following exceptions:
Timber management control records including TMIS will be maintained annually. Silvicultural examination and stand treatment needing identification will be accomplished every 20 years on all available timber land. Stand examination information for site-specific data (such as volume/acre, growth rates, etc.) will be used for timber planning.

Silvicultural examinations in pinyon/juniper stands do not have to follow regional publication "Stand Examination Procedures." The examination procedure should utilize an existing procedure or be designed to produce the following information: 1) acres from which fuelwood, pinyon nuts, Christmas trees, and posts and poles can be produced; 2) volume or amounts of all these products that can be produced; and 3) current accessibility or need and possibility for building roads.

Natural regeneration stocking will meet stocking levels prior to scheduling final removal cut of shelterwood standard. Schedule planting could be considered if natural regeneration success is poor. Research should be promoted to determine the best thinning schedule and stocking level to provide the best volume growth per acre. Stands will be scheduled by priority of need for treatment of insects and disease. Moderate acreage per year will be thinned.

Timber will be managed for moderate levels of outputs of sawlogs and products. There will be a mixture of management intensities. The following are the silvicultural standards by species:

Jeffrey and Lodgepole Pine
Silvicultural Standard: Two step shelterwood - Rotation age 130 years
1st Step - Seed Cut - Remove 80 percent of existing volume
2nd Step - Removal Cut - Remove remaining overstory volume
Thinning Cycle - 20 years

Mixed Conifer
Silvicultural Standard: Three-step shelterwood - Rotation age 130 years
1st Step - Preparation Cut - Remove 60 percent of existing volume
2nd Step - Seed Cut - Remove 1/2 of remaining volume
3rd Step - Removal Cut - Remove remaining overstory volume
Thinning Cycle - 20 years.

Jeffrey, Lodgepole Pine, and Mixed Conifer
Silvicultural Standard: Three-step shelterwood - extended rotation of 200 years
1st Step - Preparation Cut - Remove 60 percent of existing volume
2nd Step - Seed Cut - Remove 1/2 of remaining volume
3rd Step - Removal Cut - Remove remaining overstory volume
Thinning Cycle - 40 years

Jeffrey, Lodgepole Pine, and Mixed Conifer
Silvicultural Standard: Clearcut - Rotation age 130 years
1st Step - Clearcut - Remove all existing volume
Maximum Clearcut Size - 20 acres
Assure that the area is reforested either by natural or artificial regeneration.
Thinning Cycle - 20 years

Jeffrey, Lodgepole Pine, and Mixed Conifer
Silvicultural Standard: Selection - Uneven-aged Stand Structure
Generally all trees greater than 24 inches DBH are cut. Control of stand is to maintain the desired age class distribution. Maintain approximately 150 basal area per acre.
Cutting Cycle - 20 years

Jeffrey, Lodgepole Pine, and Mixed Conifer
Silvicultural Standard: Sanitation Cut (salvage)
Removal of dead, dying, deteriorating, or susceptible trees.
Cutting Cycle - Whenever needed

Jeffrey, Lodgepole Pine, and Mixed Conifer
Silvicultural Standard: Special Cut
Removal of trees for other than silvicultural purposes.
Utilize for sawtimber those trees with a diameter at DBH of 12 inches or greater.
As a minimum follow Region's five-year timber sale planning process to ensure timely completion of steps to completed timber sale.

For wildlife purposes, a minimum number of snags generally will be left as follows: 1) on timber land leave 1.08 snags/acre; 2) in aspen/riparian areas leave 3.08 snags/acre; and 3) around openings leave four snags/acre.

Timber products will be provided from all components. The timber management goal is a moderate MCF output on a sustained yield basis. Timber management

will be strongly influenced by economics with intensive and nonintensive management occurring. Stands chosen for management will be those with the best PNV. Determination of sustained yield MCF output and management will be based on an examination of the economics involved in applying various management schemes to the species strata. Of the various species managed on the Toiyabe, Jeffrey pine and western white pine are the most valuable. Species price differential, logging costs, different thinning schemes, different regeneration methods, and rotation lengths comprise major areas affecting economics and amount of output.

Proposed thinning schemes during a rotation are:

No thinning
One thinning - precommercial
One thinning - commercial
One thinning - precommercial with two thinnings commercial
One thinning - precommercial with three thinning commercial

The timing options of thinning cuts must also be examined. Experience on the Toiyabe indicates that shelterwood harvest and natural regeneration are the most workable for timber management. A moderate level of other timber products (mostly fuelwood) would also be provided.

Any shelterwood silvicultural standard can be applied within maximum modification, modification, and partial retention visual resource zones. Clearcut silvicultural standards can be applied in maximum modification visual resource zones. In modification visual resource zones, patch cuts can be applied but no larger than five acres. In partial retention visual resource zones patch cuts can be applied but no larger than one to two acres. Within retention visual resource zones, only salvage and selection silvicultural standards can be applied.

For species included in the timber base, current insect and disease problem areas will be treated to attempt to control problems. Thinning of stands will be the primary way for prevention of bark beetles and for treating dwarf mistletoe. Small clearcuts can also be used for treating dwarf mistletoe, provided the cut will fit within the scheduled harvest. Fuel treatment standards will be developed and implemented for the Forest.

Timber emphasis by intensity will be as follows:

TIMBR2 FH--FH and TIMBH2 FH--FH - In the existing stand, under the even-aged management system, this prescription involves management of the existing stand by application of only a final harvest cut with no commercial thinning during rotation. The final harvest cut may be a shelterwood cut or a clearcut. For existing stands, implementation may occur from age: 120 to 320 for Jeffrey pine; 120 to 370 for mixed conifer; and 120 to 350 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

Following rotation, under the even-aged managment system, this prescription involves management of the subsequent stand by application of only a final harvest cut with no commercial thinning during rotation. The final harvest cut may be a shelterwood cut or a clearcut. For the subsequent stands, implementation may occur from age: 120 to 130 for Jeffrey pine; 120 to 130 for mixed conifer; and 120 to 130 for lodgepole pine. In retention zones, implemenation of selection silvicultural standards occurs.

TIMBR2 FH-2CT and TIMBH2 FH-2CT - In the existing stand, under the even-aged management system, this prescription involves management of the existing stand by application of only a final harvest cut with no commercial thinning during rotation. The final harvest cut may be a shelterwood cut or a clearcut. For existing stands implementation may occur from age: 120 to 320 for Jeffrey pine; 120 to 370 for mixed conifer; and 120 to 350 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

Following rotation, under the even-aged management system, this prescription involves management of the subsequent stand by application of a final harvest cut with two commercial thins during rotation. The final harvest cut may be a shelterwood cut or a clearcut. For the two intermediate thins, implementation of the first may occur at ages 80 or 90 with the second thin on a 20-year cycle in the rotation prior to final harvest. Implementation of final harvest may occur from age: 120 to 130 for Jeffrey pine; 120 to 130 for mixed conifer; and 120 to 130 for lodgepole pine. In the retention zones, implementation of selection silvicultural standards occurs.

TIMBR2 FH-3CT and TIMBH2 FH-3CT - In the existing stand, under the even-aged management system, this prescription involves management of the existing stand by application of only a final harvest cut with no commercial thinning during rotation. The final harvest cut may be a shelterwood cut or a clearcut. For existing stands implementation may occur from age: 120 to 320 for Jeffrey pine; 120 to 370 for mixed conifer; and 120 to 350 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

Following rotation, under the even-aged management system, this prescription involves management of the subsequent stand by application of a final harvest cut with three commercial thinnings during rotation. The final harvest cut may be a shelterwood cut or a clearcut. For the three intermediate thins, implementation of the first may occur at ages 60 or 70 with the other thins on a 20-year cycle in the rotation prior to final harvest. Implementation of final harvest may occur from age: 120 to 130 for Jeffrey pine; 120 to 130 for mixed conifer; and 120 to 130 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

TIMBR2 2CT-FH and TIMBH2 2CT-FH - For the existing stand, under the even-aged management system, this prescription involves management of existing stands by application of a final harvest cut with two commercial thinnings during rotation. This final harvest cut may be a shelterwood cut or a clearcut. For the two intermediate thins, implementation of the first may occur at ages 80 or 90 with the second thin on a 20-year cycle in the rotation. Implementation of final harvest may occur from age: 120 to 320 for Jeffrey pine; 120 to 370 for mixed conifer; and 120 to 350 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

In the existing stand, under the even-aged management system, this prescription involves management of the existing stand by application of only a final harvest cut with no commercial thinning during rotation. The final harvest cut may be a shelterwood cut or a clearcut. For existing stands, implementation may occur from age: 120 to 130 for Jeffrey pine; 120 to 130 for mixed conifer; and 120 to 130 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

TIMBR2 2CT2CT and TIMBH2 2CT2CT - For the existing stand, under the even-aged management system, this prescription involves management of the existing stand by application of final harvest cut with two commercial thinnings during rotation. This final harvest cut may be a shelterwood cut or a clearcut. For the two intermediate thins, implementation of the first may occur at ages 80 or 90 with the second thin on a 20-year cycle in the rotation. Implementation of final harvest may occur from age: 120 to 320 for Jeffrey pine; 120 to 370 for mixed conifer; and 120 to 350 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

Following rotation, under the even-aged management system, this prescription involves management of the subsequent stand by application of a final harvest cut with two commercial thinnings during rotation. This final harvest cut may be a shelterwood cut or a clearcut. For the two intermediate thins, implementation of the first may occur at ages 80 or 90 with the second thin on a 20-year cycle in the rotation. Implementation of final harvest may occur from age: 120 to 130 for Jeffrey pine; 120 to 130 for mixed conifer; and 120 to 130 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

TIMBR2 2CT3CT and TIMBH2 2CT3CT - For the existing stand, under the even-aged management system, this prescription involves management of the existing stand by application of final harvest cut with two commercial thinnings during the rotation. This final harvest cut may be a shelterwood cut or a clearcut. For the two intermediate thins, implementation of the first may occur at ages 80 or 90 with the second thin on a 20-year cycle in the rotation. Implementation of final harvest may occur from age: 120 to 320 for Jeffrey pine; 120 to 370 for mixed conifer; and 120 to 350 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

Following rotation, under the even-aged management system, this prescription involves management of the subsequent stand by application of a final harvest cut with three commercial thinnings during rotation. The final harvest cut may be a shelterwood cut or a clearcut. For the three intermediate thins, implementation of the first may occur at ages 60 or 70 with the other thins on a 20-year cycle in the rotation prior to final harvest. Implementation of final harvest may occur from age: 120 to 130 for Jeffrey pine; 120 to 130 for mixed conifer; and 120 to 130 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

TIMBR2 3CT-FH and TIMBH2 3CT-FH - For the existing stand, under the even-aged management system, this prescription involves management of the subsequent stand by application of a final harvest cut with three commercial thinnings during rotation. The final harvest cut may be a shelterwood cut or a clearcut. For the three intermediate thins, implementation of the first may occur at ages 60 or 70 with the other thins on a 20-year cycle in the rotation prior to final harvest. Implementation of final harvest may occur from age: 120 to 320 for Jeffrey pine; 120 to 370 for mixed conifer; and 120 to 350 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

In the existing stand, under the even-aged management system, this prescription involves management of the existing stand by application of only a final harvest cut with no commercial thinning during rotation. The final harvest cut may be a shelterwood cut or a clearcut. For existing stands,

implementation may occur from age: 120 to 130 for Jeffrey pine; 120 to 130 for mixed conifer; and 120 to 130 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

TIMBR2 3CT2CT and TIMBH2 3CT2CT - For the existing stand, under the even-aged management system, this prescription involves management of the subsequent stand by application of a final harvest cut with three commercial thinnings during rotation. The final harvest cut may be a shelterwood cut or a clearcut. For the three intermediate thins, implementation of the first may occur at ages 60 or 70 with the other thins on a 20-year cycle in the rotation prior to final harvest. Implementation of final harvest may occur from age: 120 to 320 for Jeffrey pine; 120 to 370 for mixed conifer; and 120 to 350 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

Following rotation, under the even-aged management system, this prescription involves management of the existing stand by application of a final harvest cut with two commercial thinnings during rotation. This final harvest cut may be a shelterwood cut or a clearcut. For the two intermediate thins, implementation of the first may occur at ages 80 or 90 with the second thin on a 20-year cycle in the rotation. Implementation of final harvest may occur from age: 120 to 130 for Jeffrey pine; 120 to 130 for mixed conifer; and 120 to 130 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

TIMBR2 3CT3CT and TIMBRH2 3CT3CT - For the existing stand, under the even-aged management system, this prescription involves management of the subsequent stand by application of a final harvest cut with three commercial thinnings during rotation. The final harvest cut may be a shelterwood cut or a clearcut. For the three intermediate thins, implementation of the first may occur at ages 60 or 70 with the other thins on a 20-year cycle in the rotation prior to final harvest. Implementation of final harvest may occur from age: 120 to 320 for Jeffrey pine; 120 to 370 for mixed conifer; and 120 to 350 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

Following Rotation, under the even-aged management system, this prescription involves management of the subsequent stand by application of a final harvest cut with three commercial thinnings during rotation. The final harvest cut may be a shelterwood cut or a clearcut. For the three intermediate thins, implementation of the first may occur at ages 60 or 70 with the other thins on a 20-year cycle in the rotation prior to final harvest. Implementation of final harvest may occur from age: 120 to 130 for Jeffrey pine; 120 to 130 for mixed conifer; and 120 to 130 for lodgepole pine. In retention zones, implementation of selection silvicultural standards occurs.

TIMBR2 NONCUT and TIMBH2 NONCUT - Goal 2 was selected, but due to economics, the stand will not be managed for sawlog production. No stand management prescriptions were developed.

Soil and Water. Same as Goal 1 with the following exceptions:
Inventories will used on a minimal basis to provide data timely to resource conflicts. Planning will be reactionary in scope. Unsatisfactory watershed conditions will be corrected by treating high value areas in a cost effective manner where conditions are in an active state of degradation. Treatment will be done on a priority basis with consideration for the highest resource values and risk of resource loss. The maintenance schedule will reflect 33 percent

of annual maintenance needs. Monitoring levels will increase as resource activities increase. Selected snow courses and rain gauges will be read.

Minerals. Same as Goal 1 with the following exceptions:
General technical inventory and evaluation will increase slightly over Goal 1. Land exchanges and acquisitions will increase and there will be a concomitant increase in the need for mineral reports. A detailed assessment will be conducted on 80 percent of the NOIs and OPs submitted.

Fire Management. Same as Goal 1 with the following exceptions:
For fire prevention there will be passive media coordination and management of seasonal restrictions Forest-wide. CFFP material will be purchased and distributed randomly (see forest-wide standards and guidelines within the Plan for details on distribution by district). Public and cooperator detection will be utilized to the fullest and supplemented by force account, as needed, to keep acres burned to an acceptable level. Fuels will be modified to reduce hazards and to meet Visual Quality Objectives (VQOs) in harvest and other activity areas. Limited treatments of natural fuels (as part of the Sierra Front Initiative) will be initialed to reduce severe life and property hazards. For fuel break construction, projects will have the following priority: 1) protect life and property; 2) protect the highest resource values; and 3) provide optimal multi-resource benefits.

Facilities. Same a Goal 1 with the following exceptions:
Under transportation system planning and inventory, area plans will be developed for high-use areas other than timber to accomplish resource management objectives. One district per year will be completed. For road operation, a priority list of arterial and collector roads will be developed to initiate traffic studies and determine what roads have questionable jurisdiction. A road operation plan will be developed which includes maintenance management and provides coordination instructions for regulation and control of traffic Forest-wide. Maintenance activities will increase 26 percent to include lower priorities. Facility maintenance will be increased. Primary and secondary base series maps will be updated at least once a year. Transportation planning will be accomplished in conjunction with timber sale preparation activities starting at least five years prior to the scheduled sale date. Timber purchaser activities will comply with Timber Sale Contract sections on road construction and reconstruction. Approximately one-half the total miles of road with primary resource value of timber will be maintained annually. Road standards will be the minimum necessary to provide for safety with minimum impacts on resources. Signing will be designed for user safety with at least 10 percent of the signing program completed annually. Highest priority will be given to reconstructions of existing arterial/collector roads before constructing new ones. A Forest-wide right-of-way acquisition program will be established and two acquisitions per year will be completed. Trails will be located and relocated to minimize resource impacts. A Forest-wide project list will be prepared and updated annually. Engineering on potable water systems will increase 15 percent.

GOAL 3 - A Low Intensity Management Prescription

Purpose: This is a low intensity thrust that emphasizes a mixture of both noncommodity and commodity outputs.

DEFORPLAN Level 7 (Management Emphasis) Identifiers for Goal 3:

--Goal 3 - Applied to all analysis areas in central Nevada and Mount

Charleston portions of the Forest.

--Timber 3 - A Goal 3 prescription applied to all commercial timber analysis areas on the Carson District (Sierra).

--Timber Haul 3 - A Goal 3 prescription applied to all commercial timber analysis areas on the Bridgeport District (Sierra).

--Range 3 - A Goal 3 prescription applied to all noncommercial timber analysis areas in central Nevada and range allotment analysis areas in the Sierra.

Major Forestwide "Functional" Standards and Guidelines by Resource:

Recreation. Same as Goal 2 with the following exceptions:
This prescription fully maintains the RIM system. Recreation sites will be maintained to RIM Condition Class 1 or 2 levels. Administration of recreation special use sites and patrol is at a slightly higher intensity of administration than in Goal 2.

Cultural Resources. Same as Goal 2 with the following exceptions:
Cultural resource inventory and evaluation will be at a higher intensity. Paraprofessionals will be used but not maximized. Cultural resource evaluation will be made on sites with National Register potential where continued degradation may endanger the integrity of the site. Under this goal, an average of one site per five years will be nominated to the National Register. On-site protection, law enforcement, and public education will be emphasized.

Wildlife. Same as Goal 2 with the following exceptions:
In addition to Goal 2, more range studies will be converted to wildlife studies. Timber compartment exams will incorporate the collection of wildlife habitat information. Studies will increase over Goal 2. More areas will be adjusted to a wildlife management emphasis. These areas will need inventories and plans. The number of plans and/or inventories will increase over Goal 2. All projects within key wildlife habitat will have prescriptions written for them. The number of prescriptions, level of monitoring, consultation, and cooperation will increase over Goal 2.

Range. Same as Goal 2 with the following exceptions:
Emphasis will be on directing resources into range improvements to arrest range deterioration on all allotments under an AMP. Management emphasis will be on extensive rather than intensive grazing systems.

Wild Free-Roaming Horses and Burros. Same as Goal 2.

Timber. Same as Goal 2 with the following exceptions:
Stand examinations will only be done to identify stands with insect or disease problems that need treatment to maintain the stand. Stand examinations will be done prior to thinning treatments. Reforestion needed per existing KV plans will be completed and work conducted on the most promising sites. Timber stand improvements needed per existing KV plans will be completed and a low level of acreage thinned to provide a continuing low level of fuelwood. Timber will be managed for outputs of moderate levels of products while maintaining sawlog production capability. Timber sale preparation and administration will be applied around and within developed recreation sites,

and in insect and disease control work. For wildlife purposes, a minimum number of snags will generally be left as follows: 1) on timber land leave 1.44 snags/acre; 2) in aspen/riparian areas leave 4.8 snags/acre; and 3) around openings leave four snags/acre. A moderate level of timber products (mostly fuelwood) will be provided from all components. Sales of fuelwood will continue to be made through timber stand improvement and insect and disease control programs. Small clearcuts and thinning can be used for treatment of dwarf mistletoe. Treatment of insect and disease problems will be undertaken instead of prevention of problems. Fuel treatment standards will be developed and implemented for the Forest through coordination with the "Sierra Front Initiative Vegetative Management Plan."

TIMBR3 and TIMBH3 - There will be no sawlog sales under this goal. No stand management prescriptions were developed.

Soil and Water. Same as Goal 2 with the following exceptions:
Highly significant watersheds will be inventoried. This will eliminate some of the reactionary modes of watershed management. Plans will be based on these inventories. Maintenance will meet 60 percent of maintenance needs annually. Soil and water resource monitoring will be implemented based on a representative sample of all activities that have the potential to degrade soil and/or water resources; and as a check on implementation of "Best Management Practices" and its effectiveness. All snow courses and rain gauges will be read.

Minerals. Same as Goal 2 with the following exceptions:
Inventories for special interest geologic areas and common variety mineral materials will be implemented on a minimum scale. A process by which geologic hazard areas are identified will be developed on the Forest. A detailed assessment will be conducted on 90 percent of the OPs and NOIs submitted.

Fire Management. Same as Goal 1 with the following exceptions:
Fire prevention will be at Level 2 (aggressive). There will be positive media exposure, prompt fire investigation, and follow-up. There will also be aggressive hazard inspections and use of fire restrictions when necessary. Public contact will be through interagency field personnel and the media. All efforts will be intensified during periods of high fire danger and high-use periods. Site specific hazard reduction will be made where appropriate. In addition to Goal 2, this goal calls for joining and integrating with the BLM lightning detection system for the Sierra and Las Vegas, on a limited basis. The size and effectiveness of initial attack organization will increase. Initial attack forces will be selected and cross-trained to productively support other elements and activities when pre-suppression objectives have been met, and when not on fires. Cooperative effort and National Interagency Incident Management System (NIIMS) involvement will increase in intensity. Interagency overhead teams will be established under a unified command concept. The role of joint dispatching will increase. On opportunities to upgrade support functions on an interagency basis will be capitalized. Natural fuel treatment for hazard reduction will be integrated with all other resource needs on an interdisciplinary basis. Interagency programs and involvement will increase wherever feasible.

Facilities. Same as Goal 2 with the following exceptions:
Transportation system analysis will be performed on the entire system. Site surveys will be prepared for high priority structures as determined from the bridge replacement plan. At least one bridge per decade will be replaced. At

least one deferred maintenance project per year will be accomplished. There will be a 120 percent increase in facility maintenance for high priority district projects as determined by the management team. Potable water system standards are the same for minimum or base operation and maintenance with a 30 percent increase in engineering data collection.

GOAL 4 - An Amenity and Noncommodity Prescription

Purpose: A management thrust that emphasizes amenities and noncommodity outputs such as dispersed recreation, wildlife, fish, and soil and water.

DEFORPLAN Level 7 (Management Emphasis) Identifiers for Goal 4:

--Goal 4 - Applied to all analysis areas in central Nevada and Mount Charleston portion of the Forest.

--Timber 4 - A Goal 4 prescription applied to all commercial timber analysis areas on the Carson District (Sierra).

--Timber Haul 4 - A Goal 4 prescription applied to all commercial timber analysis areas on the Bridgeport District (Sierra).

--Range 4 - A Goal 4 prescription applied to all noncommercial timber analysis areas in central Nevada and range allotment analysis areas in the Sierra.

Major Forest-wide Standards and Guidelines by Resource:

Recreation. Same as Goal 3 with the following exceptions:
Recreation planning will be at a level that emphasizes enhancement of dispersed recreation opportunities. In addition to the guidelines for Goal 2, quality dispersed area plans will be done for all significant use areas. This goal incorporates dispersed recreation trends, projections, and long range resource needs in plans. Interpretive plans for all ranger districts will be completed and updated. This prescription calls for refining existing trail plans to ensure responsiveness to increasing dispersed use. This goal improves the quality of data gathered on dispersed recreation use and the opportunities in areas of heavy use. Visual quality inventories will be refined overall. Visual absorption inventories will be intensified. This goal updates trail condition surveys. Dispersed facilities will be constructed as needed to protect public health and safety, and to reduce environmental degradation. Sanitation and trailhead facilities will be added as appropriate, based on use. Selected interpretive facilities will be constructed. Cooperative level will increase with the Inyo National Forest. Visual Information Service (VIS) activities will be intensified in heavy-use areas. Interpretive services will be integrated with administration of dispersed use. Off-Road recreation vehicle plans will be fully administered with optimum signing and patrolling. Trails will be constructed where needed to accommodate increasing use (an average of five to seven miles annually).

Cultural Resources. Same as Goal 3 with the following exceptions:
Programmatic cultural resource inventory and evaluation will be conducted. All significant cultural resource properties will be evaluated. One cultural resource property will be nominated to the National Register every two years until the potential is reached. Cultural resource properties will be enhanced

based on and in coordination with VIS and interpretive plans. Cultural resource permits and special use permits will be handled with maximum efficiency.

Wildlife. Same as Goal 3, with the following exceptions:
Wildlife studies will be systematically established in all key wildlife habitats on the Forest. All range studies will be converted to habitat studies. Timber compartment exams will reflect habitat data base needs. Studies will increase over Goal 3. Habitat management plans will be systematically developed for all areas on the Toiyabe. Plans will be developed in the same manner that allotment management plans are currently generated. Prescriptions will be developed for every project impacting wildlife habitat. The level of monitoring, and consultation will increase over Goal 3. Nonstructural and structural habitat improvement projects will be considered for all wildlife species.

Range. Same as Goal 3.

Wild Free-Roaming Horses and Burros. Same as Goal 3 with the following exceptions:
Management plans will be prepared for all territories. All objectives in territory management plans will be met. Analysis of the management situation will be conducted to determine if vacant territories should be eliminated or if they have potential for being restocked. A similar analysis will be conducted to determine if territory boundaries should be adjusted or remain as established in 1971. Opportunities to enhance wild horse and burro requirements within existing territories will be explored.

Timber. Same as Goal 3 with the following exceptions:
The silvicultural standards are the same as in Goal 2.

Stand examinations will be completed before any vegetative manipulation or cultural treatment and within areas of insect or disease problems. Natural regeneration tries will be checked three years after harvest. If not already adequate for stocking standards, planting will be scheduled. The best residual basal area will be utilized to maximize stand growth, with the exception of residual basal area for wildlife habitat needs. A low level of acreage will be thinned to support the fuelwood program. Timber management for sawlogs will be in response to other resource needs, and products will be produced at a moderate level. For wildlife purposes a minimum number of snags will generally be left as follows: 1) for timber lands leave 1.8 snags/acre; 2) for aspen/riparian areas leave 4.8 snags/acre; and 3) around openings leave four snags/acre. A low level of MCF output of timber by commercial sawlog sales will likely occur as the result of wildlife habitat improvement projects. A moderate level of timber products (mostly fuelwood) will be provided from all components. Small clearcuts and thinnings can be used for treatment of dwarf mistletoe. Treatment of insect and disease problems will be undertaken instead of prevention of problems. Fuel treatment standards for the Forest will be developed and implemented through coordination with the "Sierra Front Initiative Vegetative Management Plan." Law enforcement activities have a high priority. A law enforcement plan will reflect a high level of planned work and training for timber law enforcement. The law enforcement plan will emphasize prevention measures. Patrols and projects for law enforcement in timber areas will be planned and implemented. Timber needs .45 person/years under this goal.

TIMBR4 FH--FH and TIMBH4 FH--FH - same as Goal 2.
TIMBR4 FH-2CT and TIMBH4 FH-2CT - "
TIMBR4 FH-3CT and TIMBH4 FH-3CT - "
TIMBR4 2CT-FH and TIMBH4 2CT-FH - "
TIMBR4 2CT2CT and TIMBH4 2CT2CT - "
TIMBR4 2CT3CT and TIMBH4 2CT3CT - "
TIMBR4 3CT-FH and TIMBH4 3CT-FH - "
TIMBR4 3CT2CT and TIMBH4 3CT2CT - "
TIMBR4 NONCUT and TIMBH4 NONCUT - "

Soil and Water. Same as Goal 3 with the following exceptions:
All Forest watersheds will be prioritized for implementation of inventories and planning. Improvement projects will be completed, as identified through planning, on all Forest watersheds. All water claims will be quantified. Maintenance will be scheduled to meet 100 percent of maintenance needs annually. Monitoring plans will be developed and implemented for the analysis area.

Minerals. Same as Goal 3 with the following exceptions:
Land acquisitions will be accelerated, requiring greater mineral evaluation effort. Noncommodity resources will be emphasized during acquisition of lands. Districts will implement an inventory and evaluation process for special interest geologic areas. A process by which geologic hazard areas could be inventoried will be developed.

Fire Management. Same as Goal 3 with the following exceptions:
A D-4 or equivalent size tractor will be acquired for suppression and project work. Forest-wide fuel inventories will be completed for comprehensive multi-resource vegetation managment plan(s). Emphasis will be on the Sierra front, Las Vegas, and other priority areas of natural fuels.

Facilities. Same as Goal 3 with the following exceptions:
Dam administration and management, operation, and maintenance will be the same with a technical inspection performed annually on 50 percent of the moderately hazardous dams.

GOAL 5 - A Market Prescription

Purpose: A management thrust that emphasizes timber, range, developed recreation, minerals, and special uses.

DEFORPLAN Level 7 (Management Emphasis) Identifiers for Goal 5:

--Goal 5 - Applied to all analysis areas in central Nevada and Mount Charleston portion of the Forest.

--Timber 5 - A Goal 5 prescription applied to all commercial timber analysis areas on the Carson District (Sierra).

--Timber Haul 5 - A Goal 5 prescription applied to all commercial timber analysis areas on the Bridgeport District (Sierra).

--Range 5 - A Goal 5 prescription applied to all noncommercial timber analysis areas in central Nevada and range allotment analysis areas in the Sierra.

Major Forest-wide "Functional" Standards and Guidelines by Resource:

Recreation. Same as Goal 4 with the following exceptions:
Recreation planning for Goal 5 is at a level that emphasizes enhancement of developed recreational opportunities. In addition to Goal 2 for general recreation planning, plans will emphasize activities that increase returns to the treasury, and which identify opportunities for new revenue-producing concessions and recreation special uses. Interpretive planning will identify opportunities to interpret commodity activities for the general public. In addition to Goal 2 for general recreation inventory, Goal 5 maintains RIM and refines it for developed sites and composites. Selected recreation sites will be reconstructed to preclude future closure due to deterioration. One or two new developed sites will be constructed every decade. All recreation sites will be operated at full service. All cost-effective sites will be brought up to and maintained at standards. This goal allows the minimum resource treatment necessary to provide safety and prevent accumulative site degradation; while preparing vegetation managment plans for priority developed sites. Trail construction will be done where needed to enhance developed sites.

Cultural Resources. Same as Goal 4 with the following exception:
This goal enhances cultural resource properties based on and in coordination with developed recreation use and plans in addition to those in Goal 4.

Wildlife. Same as Goal 4 with the following exception:
Wildlife studies will be limited to MIS. The number of studies undertaken would be the amount necessary to provide data for the maintenance of viable populations of MIS. Prescriptions will be developed for every project impacting wildlife habitat. The level of monitoring and consultation will increase over Goal 4. Nonstructural and structural habitat improvements will be restricted to maintain minimum viable populations of MIS.

Range. Same as Goal 4 with the following exceptions:
Under this prescription, the Forest Range Action Plan will be fully implemented to obtain optimum forage production and utilization. Range analysis and the development of allotment management plans will be completed for all allotments as scheduled. Objectives of implemented AMPs will be met. A systematic inventory and evaluation of resource data will be performed. Implementation of management systems and installation of range improvements, both structural and nonstructural, will be scheduled for high and moderate priority allotments at a higher level approaching the optimum for increased forage production. These latter two tasks may or may not be as scheduled on low priority allotments. Monitoring will occur on all allotments as planned. Permittee participation in all management aspects will be sought.

Wild Free-Roaming Horses and Burros. Same as Goal 4.

Timber. Same as Goal 4 with the following exceptions:
Silvicultural examination and stand treatment are the same as for Goal 2 except that they will be accomplished every 10 years. Silvicultural examinations in pinyon/juniper stands are the same as for Goal 2. The best residual basal area will be maximized. Research will be conducted to determine the best thinning schedule and stocking level. All stands will be thinned on a 20-year cycle. Timber management will be intensive to produce high outputs of sawlogs and fuelwood. Silvicultural standards are the same as for Goal 2. All opportunities will be utilized to provide fuelwood. High MCF output will be the primary goal. For wildlife purposes the minimum number of

snags that will be left is the same as in Goal 2. Any silvicultural standard can be applied in any visual zone except within 300 feet of developed recreation sites and along major highways. For species included in the timber base, a high program of work will be done.

Insect and disease detection surveys and evaluations will be accomplished routinely. Emphasis will be placed on identifying high risk potential in stands and determining if prevention efforts are needed to control losses. Emphasis will be placed on thinning overstocked Jeffrey pine stands to reduce the risk of bark beetle attacks. Emphasis will also be placed on dwarf mistletoe surveys and control measures in all timber stands. Small clearcuts, taking into consideration other resource values, may be used where not normally permitted. Fuel treatment standards for the Forest will be developed. Standards will be used to determine when slash treatment is needed and how much treatment needs to be done to reduce fuel loading to an acceptable level. Coordination with the "Sierra Front Initiative Vegetative Management Plan" will be used. Slash treatment will be done to either meet fuel loading standards or to a high level of slash reduction if fuel loading standards are lacking. All acres of activity created fuels will be treated.

Timber needs 0.68 person-years under this Goal.

TIMBR5 FH--FH	and	TIMBH5 FH--FH	-	Same as Goal 2
TIMBR5 FH-2CT	and	TIMBH5 FH-2CT	-	"
TIMBR5 FH-3CT	and	TIMBH5 FH-3CT	-	"
TIMBR5 2CT-FH	and	TIMBH5 2CT-FH	-	"
TIMBR5 2CT2CT	and	TIMBH5 2CT2CT	-	"
TIMBR5 2CT3CT	and	TIMBH5 2CT3CT	-	"
TIMBR5 3CT-FH	and	TIMBH5 3CT-FH	-	"
TIMBR5 3CT2CT	and	TIMBH5 3CT2CT	-	"
TIMBR5 NONCUT	and	TIMBH5 NONCUT	-	"

Soil and Water. Same as Goal 4 with the following exceptions:
Inventories will be used on a minimal basis specific to timely resource conflicts. Planning will be reactionary in scope. Unsatisfactory watershed conditions will be corrected by treating high value areas; treatment will be prioritized with consideration for highest resource values and risks. Maintenance will be scheduled to meet 33 percent of annual needs. Monitoring will be restricted to commodity related resource programs.

Minerals. Same as Goal 4 with the following exceptions:
The emphasis under this prescription will be to produce minerals while maintaining noncommodity resources at an acceptable level. Land exchanges and/or acquisitions will be used to obtain land containing commodity related resources. An inventory of special interest geologic areas will not be undertaken. Districts will undertake inventories to determine the location and extent of common variety mineral materials. Validity examinations will be used on a case-by-case basis. Validity examinations will be used on those projects where reclamation measures cannot adequately mitigate the long-term loss of resources. All NOIs and OPs submitted will be processed.

Fire Management. Same as Goal 4 with the following exceptions:
Program leadership in the Supervisor's Office will increase from 1/2 to 2/3 person year.

All integrated Forest-wide inventories for comprehensive multi-resource vegetation management will be completed for the Sierra Front, Las Vegas, and

other areas where resource opportunities exist. This prescription has the highest level of fuel treatment maintenance and opportunities for commodity outputs in maintenance activities.

Facilities. Same as Goal 4 with the following exceptions:
There will be a 300 percent increase in high priority district projects. Engineering in potable and waste-water systems will increase by 55 percent. Technical inspection will be performed on all moderately hazardous dams and on one-half of low hazard dams. Construction/reconstruction of arterial and collector roads will be accomplished through public works contract.

GOAL 6 - Wilderness Prescription

Purpose: A management thrust that emphasizes wilderness management.

DEFORPLAN Level 7 (Management Emphasis) Identifiers for Goal 6:

--Goal 6 - Applied to all analysis areas in central Nevada and Mount Charleston portion of the forest.

--Timber 6 - A Goal 6 prescription applied to all commercial timber analysis areas on the Carson District (Sierra).

--Timber Haul 6 - A Goal 6 prescription applied to all commercial timber analysis areas on the Bridgeport District (Sierra).

--Range 6 - A Goal 6 prescription applied to all noncommercial timber analysis areas in Central Nevada and range allotment analysis areas in the Sierra.

Major Forest-wide "Functional" Standards and Guidelines by Resource:

Recreation. Same as Goal 5 with the following exceptions:
Recreation planning will be at a level that emphasizes enhancement of dispersed recreation opportunities. It calls for completion of quality dispersed area plans for all significant use areas. Dispersed recreation trends, projections, and long-range resource needs will be incorporated into plans. There will be a refinement of existing trail plans to ensure responsiveness to increasing dispersed use. This goal calls for improving the quality of data gathered on dispersed recreation use and opportunities in areas of heavy use. Visual absorption inventory will be intensified. Sanitation and trailhead facilities will be added as appropriate, based on use. Development of interpretive associations will be encouraged. Under this goal, an average of five to seven miles of trail will be reconstructed annually; and an average of five to seven miles of new trail will be constructed to accommodate increasing use.

Cultural Resources. Same as Goal 4 with the following exception:
On-site protection, enhancement, and interpretation will be done only when compatible with wilderness values.

Wildlife. Same as Goal 1 with the following exceptions:
Range studies will be converted on a site-specific basis, particularly on those areas with a wildlife management emphasis. The number of studies will increase over Goal 1. Plans and inventories will be developed on a

case-by-case basis. The number of plans and/or inventories will increase over Goal 1. Project related work will increase. The level of monitoring will increase over Goal 1. Structural habitat improvement will be for MIS and selected wildlife species.

Range. Same as Goal 1 with the following exceptions:
Emphasis is placed on intensive management systems, where cost-effective, for allotments outside wilderness areas. Opportunities to increase forage production by vegetative manipulation and to convert secondary range into primary range will be exercised. Permittee participation in nonstructural as well as structural improvements will be sought. Extensive management systems will be applied to allotments within wilderness areas. Stocking will be based on proper-use criteria compatible with wilderness values. Priority will be given to arresting range deterioration on allotments in wilderness areas over allotments outside of wilderness areas. Permittee cooperation as well as economics will be important criteria in monitoring grazing within wilderness areas.

Wild Free-Roaming Horses and Burros. Same as Goal 5 with the following exception:
The opportunity to enhance wild horse and burro populations using structural and nonstructural range improvements will occur primarily on territories outside of wilderness areas.

Timber.
Timber areas within wilderness will be removed from the timber base.

Planning needed within wilderness will be done to monitor stand conditions. Planting will not be done for timber management purposes. Planting may be done for other resources within wilderness. Timber management does not apply within wilderness. Requests for timber on mining claims will be reponded to, and a sound silvicultural procedure will be prescribed that maintains the character of the stand to preserve wilderness values. Insect and disease activities will be monitored within wilderness. Control measures will be considered and undertaken if insects or disease are seriously affecting wilderness qualities.

Where needed, silvicultural examinations and prescriptions will be the same as in Goal 1. The pinyon nut resource will be managed the same as in Goal 1. Law enforcement will be the same as in Goal 4.

TIMBR6 and TIMBH6 - There will no timber management under this goal.

Soil and Water. Same as Goal 1.

Minerals. Same as Goal 1 with the following exception:
No new claims will be filed after December 31, 1983 (Wilderness Act 1964).

Fire Management. Same as Goal 2 with the following exception:
Treatment of natural fuels and fuel-break construction are not applicable.

Facilities. Same as Goal 1 for: transportaion system planning and inventory; bridge and major culvert preconstruction and reconstruction; and dam administration.

Same as Goal 2 for: minimum or base operation and maintenance; road operation; facility maintenance; transportation planning; and engineering, construction and reconstruction of arterial/collector roads and trails.

Same as Goal 3 for: FA&O construction and reconstruction guidelines.

The preceding standards and guidelines by goal are a condensed form of the "Forest Plan Guidelines and Standards" book. See also the Regional Guide for standards and guideline direction. These is located at the Forest Supervisor's Office in Sparks, Nevada.

APPENDIX I

APPENDIX F

BIOLOGICAL EVALUATION OF THREATENED AND ENDANGERED SPECIES
Toiyabe National Forest

I. Listed Species

The listed species subject to this evaluation are the only federally classified species which occur on the Toiyabe National Forest and are listed below:

A. Bald Eagle (Haliaetus leucocephalus) (E)
Peregrine Falcon (Falco peregrines) (E)
Lahontan Cutthroat Trout (Salmo clarki henshawi) (T)
Paiute Cutthroat Trout (Salmo clarki seleniris) (T)

B. Occupied Habitat

1. Bald Eagle - Bald eagles occur within the Toiyabe National Forest boundary. However, there are no known nesting areas or potential breeding habitat. Habitat for bald eagles currently consists of resting areas for migrating eagles, one known night-roosting site, and wintering foraging areas at some of our larger high-altitude lakes. As these lakes become frozen bald eagles move to lower elevations off the Forest.

2. Peregrine Falcon - Historically, it is thought the Toiyabe provided nesting and foraging habitat for peregrine falcons. There are no known peregrine nest sites on the Forest although there is a possibility an eyrie could exist without our knowledge. Current peregrine use on the Forest is thought to be only for migratory falcons. There may be potential to reintroduce peregrines on the Forest, particularly the Carson and Bridgeport ranger districts.

3. Lahontan Cutthroat Trout - Lahontan cutthroat trout (CT-L) formally occurred and still occur on four Ranger Districts on the Toiyabe National Forest. The current distribution and population is much reduced from former levels.

4. Paiute Cutthroat Trout - Paiute cutthroat trout (CT-P) occur only in Silver King drainage of the Carson ranger district. All of the native habitat of CT-P is on Carson RD and as with CT-L populations and distribution of CT-P is reduced to remnants of their former range and numbers.

C. Analysis of Effect

1. Bald Eagle - A no effect situation is expected on the bald eagle with the preferred alternative. Since the Forest provides very little bald eagle habitat and there are no changes proposed for the habitats that are used, no positive or negative effects are expected.

2. Peregrine Falcon - The preferred alternative provides for the enhancement of riparian habitats. With improvement of riparian habitats, foraging areas for peregrines would also be expected to improve. Recognizing the potential to reintroduce peregrines, and improved riparian habitats, the preferred alternative supports reintroducing peregrine falcons. A strong effort by the Forest would be made to reintroduce peregrine falcons. The preferred alternative represents a positive effect on the peregrine falcon.

3. Lahontan Cutthroat Trout - In the preferred alternative there are strong riparian area standards and guidelines some of which are specific to streams with CT-L. There is specific direction regarding where CT-L will be reintroduced and references to following state (CT-L management plans and Fish and Wildlife Service recovery plans for CT-L. Delisting CT-L should occur within the life of the Plan. The preferred alternative represents a positive effect on CT-L.

4. Paiute Cutthroat Trout - As with CT-L, the strong standards and guidelines for riparian areas and specific standards and guidelines for streams with CT-P indicate CT-P habitat will improve. The preferred alternative also stipulates adherence to the FWS Paiute Cutthroat Trout Recovery Plan. There is a good possibility CT-P would be delisted within the life of the Plan. The preferred alternative represents a positive effect on CT-P.

II. Candidate Species

Candidate Species subject to this evaluation are listed below. There are no Proposed Species subject to a biological evaluation.

A. Animals

Mono Basin Mountain Beaver (Aplodontia rufa californica) CA.
Owens Valley Vole, (Microtus californicus vallialı) Ca.
Spotted bat (Euderma maculata) Ca.
Swainson's hawk (Buteo swainsoni) NV.
Ferruginous hawk (Buteo regalis) NV.
Mountain plover (Charadrius montanus) NV.

Plants

Sierra sedge, Carex paucifructus (2) Ca.
Mono buckwheat, Eriogunum ampullaceum (2) Ca.
Mono phacelia, Phacelia monoensis (2) Ca.
Tahoe yellow-cress, Rorippa subumbellata (1) Ca.

B. Occupied Habitat - The Mono Basin Mountain Beaver (MB), based on available literature, probably occurs throughout the Sierra in suitable moist habitats. At one time the Toiyabe considered the MB as a management indicator species (MIS). The MB was dropped as a MIS because of the lack of specific data on occupied sites and our ability to locate and monitor MB habitats and populations.

It is probable spotted bats occur at some time on the Forest. However, we have no specific knowledge of spotted bat habitat on this Forest. The Las Vegas Ranger District contracted a study to ascertain if spotted bats occurred there. The study did not locate spotted bats.

Swainson's hawk, the ferruginous hawk, and the mountain plover also probably occur on or utilize Toiyabe lands. As with the three candidate mammal species above, we have no specific data indicating nest sites or other key areas on the forest.

The Toiyabe would appreciate any information the FWS could provide this Forest on known key areas for any of the candidate wildlife species.

Plants

C. Analysis of Effect (Wildlife)

A no-effect or positive-effect assessment on all wildlife candidate species is warranted with the preferred alternative. This assessment is based on the following:

1. The Forest is committed to maintaining viable populations of all native wildlife species.

2. Raptors such as the Swainson's and ferruginous hawks, generally receive more emphasis than other "non-status" wildlife. The ferruginous hawk is recognized in the document "A Program to Manage and Improve Fish and Wildlife Habitats on the National Forests of Nevada" as "sensitive."

3. Riparian area management is emphasized in the preferred alternative thus MB habitat would be maintained or enhanced.

4. Very little vegetative manipulation is scheduled with the preferred alternative. Timber sales would not effect any candidate species, perhaps with the exception of MB, and meadows and other riparian areas would be protected.

5. Spotted bats are state listed (NV-Threatened or Rare). As data becomes available on key areas on the Toiyabe, appropriate protection for these habitats would be afforded.

Plants

The minimum management requirements (MMR's) of Alternative P provides management practices to discover the presence or absence of sensitive plants and to protect and enhance them. The alternative also contains standards and guidelines to maintain viable populations of each sensitive plant.

APPENDIX F

BIOLOGICAL EVALUATION OF THREATENED AND ENDANGERED SPECIES
Toiyabe National Forest

I. Listed Species

The listed species subject to this evaluation are the only federally classified species which occur on the Toiyabe National Forest and are listed below:

A. Bald Eagle (Haliaetus leucocephalus) (E)
Peregrine Falcon (Falco peregrines) (E)
Lahontan Cutthroat Trout (Salmo clarki henshawi) (T)
Paiute Cutthroat Trout (Salmo clarki seleniris) (T)

B. Occupied Habitat

1. Bald Eagle - Bald eagles occur within the Toiyabe National Forest boundary. However, there are no known nesting areas or potential breeding habitat. Habitat for bald eagles currently consists of resting areas for migrating eagles, one known night-roosting site, and wintering foraging areas at some of our larger high-altitude lakes. As these lakes become frozen bald eagles move to lower elevations off the Forest.

2. Peregrine Falcon - Historically, it is thought the Toiyabe provided nesting and foraging habitat for peregrine falcons. There are no known peregrine nest sites on the Forest although there is a possibility an eyrie could exist without our knowledge. Current peregrine use on the Forest is thought to be only for migratory falcons. There may be potential to reintroduce peregrines on the Forest, particularly the Carson and Bridgeport ranger districts.

3. Lahontan Cutthroat Trout - Lahontan cutthroat trout (CT-L) formally occurred and still occur on four Ranger Districts on the Toiyabe National Forest. The current distribution and population is much reduced from former levels.

4. Paiute Cutthroat Trout - Paiute cutthroat trout (CT-P) occur only in Silver King drainage of the Carson ranger district. All of the native habitat of CT-P is on Carson RD and as with CT-L populations and distribution of CT-P is reduced to remnants of their former range and numbers.

C. Analysis of Effect

1. Bald Eagle - A no effect situation is expected on the bald eagle with the preferred alternative. Since the Forest provides very little bald eagle habitat and there are no changes proposed for the habitats that are used, no positive or negative effects are expected.

2. Peregrine Falcon - The preferred alternative provides for the enhancement of riparian habitats. With improvement of riparian habitats, foraging areas for peregrines would also be expected to improve. Recognizing the potential to reintroduce peregrines, and improved riparian habitats, the preferred alternative supports reintroducing peregrine falcons. A strong effort by the Forest would be made to reintroduce peregrine falcons. The preferred alternative represents a positive effect on the peregrine falcon.

3. Lahontan Cutthroat Trout - In the preferred alternative there are strong riparian area standards and guidelines some of which are specific to streams with CT-L. There is specific direction regarding where CT-L will be reintroduced and references to following state (CT-L management plans and Fish and Wildlife Service recovery plans for CT-L. Delisting CT-L should occur within the life of the Plan. The preferred alternative represents a positive effect on CT-L.

4. Paiute Cutthroat Trout - As with CT-L, the strong standards and guidelines for riparian areas and specific standards and guidelines for streams with CT-P indicate CT-P habitat will improve. The preferred alternative also stipulates adherence to the FWS Paiute Cutthroat Trout Recovery Plan. There is a good possibility CT-P would be delisted within the life of the Plan. The preferred alternative represents a positive effect on CT-P.

II. Candidate Species

Candidate Species subject to this evaluation are listed below. There are no Proposed Species subject to a biological evaluation.

A. Animals

Mono Basin Mountain Beaver (Aplodontia rufa californica) CA.
Owens Valley Vole, (Microtus californicus vallialı) Ca.
Spotted bat (Euderma maculata) Ca.
Swainson's hawk (Buteo swainsoni) NV.
Ferruginous hawk (Buteo regalis) NV.
Mountain plover (Charadrius montanus) NV.

Plants

Sierra sedge, Carex paucifructus (2) Ca.
Mono buckwheat, Eriogunum ampullaceum (2) Ca.
Mono phacelia, Phacelia monoensis (2) Ca.
Tahoe yellow-cress, Rorippa subumbellata (1) Ca.

B. Occupied Habitat - The Mono Basin Mountain Beaver (MB), based on available literature, probably occurs throughout the Sierra in suitable moist habitats. At one time the Toiyabe considered the MB as a management indicator species (MIS). The MB was dropped as a MIS because of the lack of specific data on occupied sites and our ability to locate and monitor MB habitats and populations.

It is probable spotted bats occur at some time on the Forest. However, we have no specific knowledge of spotted bat habitat on this Forest. The Las Vegas Ranger District contracted a study to ascertain if spotted bats occurred there. The study did not locate spotted bats.

Swainson's hawk, the ferruginous hawk, and the mountain plover also probably occur on or utilize Toiyabe lands. As with the three candidate mammal species above, we have no specific data indicating nest sites or other key areas on the forest.

The Toiyabe would appreciate any information the FWS could provide this Forest on known key areas for any of the candidate wildlife species.

Plants

C. Analysis of Effect (Wildlife)

A no-effect or positive-effect assessment on all wildlife candidate species is warranted with the preferred alternative. This assessment is based on the following:

1. The Forest is committed to maintaining viable populations of all native wildlife species.

2. Raptors such as the Swainson's and ferruginous hawks, generally receive more emphasis than other "non-status" wildlife. The ferruginous hawk is recognized in the document "A Program to Manage and Improve Fish and Wildlife Habitats on the National Forests of Nevada" as "sensitive."

3. Riparian area management is emphasized in the preferred alternative thus MB habitat would be maintained or enhanced.

4. Very little vegetative manipulation is scheduled with the preferred alternative. Timber sales would not effect any candidate species, perhaps with the exception of MB, and meadows and other riparian areas would be protected.

5. Spotted bats are state listed (NV-Threatened or Rare). As data becomes available on key areas on the Toiyabe, appropriate protection for these habitats would be afforded.

Plants

The minimum management requirements (MMR's) of Alternative P provides management practices to discover the presence or absence of sensitive plants and to protect and enhance them. The alternative also contains standards and guidelines to maintain viable populations of each sensitive plant.

APPENDIX G

The following is a detailed description of the intensively used developed canyons (Management Area 11) on the Las Vegas Ranger District.

KYLE CANYON

Kyle Canyon is approximately five miles in length and two miles in width. The canyon is deeply incised into the mountain range with upper ridge lines extending above 11,000 feet. Steep slopes and sheer cliffs confine most recreational activity and development to the canyon floor.

In 1972 a sample survey for archaeological sites was conducted in the canyon. No significant prehistoric sites were located at that time.

Wildlife is limited primarily to small species as human occupancy has generally forced big game to more remote locations outside the management area.

Subdivisions have been platted for over 500 lots. Homes are located in the canyon and on bench lands. In several locations tightly-clustered buildings disrupt the scenic quality along the highway. It is likely that construction will continue on undeveloped lots. Aesthetics, fire hazard, sewage disposal, water supply, solid waste, road improvements, and utility lines are of increasing concern as the community grows.

Controling erosion and minimizing earth disturbance during construction are necessary to avoid soil degradation. Flood threat to low-lying lands adjacent to canyon drainages has been increased by channelization, road construction, and impervious roof surfaces. Controls to achieve desirable community growth and services are exercised through Clark County ordinances.

The Charleston Park subdivision is the oldest residential tract and is locally referred to as "Old Town." The area is platted for 110 lots. Echo View has a total of 136 lots. Cathedral Rock View subdivision has 49 lots. The Mount Charleston Lodge is nearby, with a restaurant and bar facility. The Rainbow Canyon subdivision is platted for 228 homesites on a large bench formation south of the highway.

The high density of private homes creates the potential for a rapidly speading catastrophic fire, should one start. The topography and natural fuels are also conducive to major fires. Historically, there have been several large fires, all man-caused. In 1924 fire burned over 3,500 acres along the southern slopes at the mouth of Kyle Canyon. In Burnout Canyon, on the upper slopes of Trail Canyon, 1,550 acres burned in 1947. Near Fletcher Canyon, 203 acres of northern slopes burned in a 1965 fire. Potential for catastrophic fire is high in certain areas, particularly in the Rainbow Canyon subdivision. Routes for evacuation are recommended around areas of high risk.

The Nevada Division of Forestry provides fire protection for private lands and structures. The Forest Service is responsible for suppression on

Forest lands. Because of the number of recreationists visiting the canyon, presuppression efforts and fire prevention contracts are required.

Avalanches pose a serious threat to developments in some locations. Major avalanche paths generally have not been considered in the development of private lands. Deaths and property destruction have resulted. Snow depths and avalanche potential vary radically from year to year. In 1969 an avalanche on the south-facing slope above Echo Subdivision took three lives and destroyed residences. Location of the Mount Charleston Lodge is near the outrun of a major avalanche chute. Danger is remote, but an unusually severe winter could create hazardous conditions. Another major avalanche chute terminates on public land between Old Town and Rainbow Subdivision. It poses little hazard to property but it could endanger the lives of winter recreationists.

A two-lane, paved highway winds along the canyon floor. Its design tends to keep traffic at about the speed limit of 35 mph. Widening the highway would encourage faster speeds, possibly increase traffic, and encroach on the drainage channels. Any change in alignment and width would radically change the aesthetic appeal of driving through the canyon.

First-time visitors are funneled into Kyle Canyon by current highway design. Seeking higher elevations, they follow the highway to its end. Cathedral Rock Picnic Area receives intense use principally because it (and the adjacent private lodge) lies at the end of the paved highway. Much sight-seeing traffic circulates through the site.

There is a potential to redesign or relocate the Deer Creek intersection. A one-way loop at the end of the highway has been proposed.

Kyle Campground has 22 family units designed to accomodate 110 people. Fletcher View Campground has 12 units accommodating 60 people at one time. A fee is charged for use of these sites and is an important management tool and source of maintenance revenue. The current fee system does not provide for a charge at picnic areas.

Midway between these two sites is the Kyle Canyon Guard Station. The historical Kyle Sawmill was located in this area. This administrative site was constructed in the late 1930s during the Civil Conservation Corp - Work Project Administration (CCC-WPA) era. An Air Force Recreation Center was once located on a portion of the site. A now abandoned well, 274 feet deep, was drilled at the guard station in 1965. The well went dry in 1972, probably due to a lowered water table. More recently, well-water tests have indicated pollution.

Cathedral Rock Picnic Area is at a general elevation of 8,000 feet below the spectacular cliff formations of Cathedral Rock and Echo Cliff. Limitations on development are primarily related to snow avalanches and two major rock slide paths. Portions of Cathedral Rock Picnic Area are in the deposition zone of the Mazie Canyon slide path.

Cathedral Rock contains 76 family picnic units and two group units, one for 80 people and one for 100 people. Total site capacity is 515 people at

one time. Currently there are no fees charged except for group use. Trails commencing at or near the picnic area provide access to local features and the higher elevations.

Upper Kyle Canyon is accessible over a maintained gravel road from the paved highway. Vehicular travel is discouraged by a gate at the entrance to the former Mary Jane Falls Campground. This site was constructed in 1965 and contained 50 family units. In December of 1966 a high intensity storm caused considerable flood damage. A storm in July of 1968 again caused much damage. An avalanche in 1969 further damaged facilities, leading to their removal in 1973. A well, drilled in 1965, is 265-feet deep and is now abandoned. A snowcourse is located above the former campground site.

The upper canyon has potential to absorb a greater number of recreationists than does the lower portion. The nearby forested slopes and high cliffs are picturesque and awe-inspiring. Attractions include Big Falls and Mary Jane Falls. A system of high-quality trails is proposed, leading from centralized parking.

Flood damage has occurred in developed recreation sites. Physical reinforcement of channels has been necessary in some locations as protection or restoration measures. Water systems are complex and include a number of abandoned water lines. Several springs were developed, including extensive water transmission lines, in the late 1930s during the CCC-WPA era. Water is now provided by the Kyle Canyon Water District, administered by the Las Vegas Valley Water District.

The phone line to Lee Canyon leaves private land and ascents the ridge line, crossing the North Loop Trail in Trail Canyon. This line is mostly above ground but has been buried in some places. The existing installation should be relocated as soon as feasible.

Harris Mountain is accessible along a low standard, single lane road. The road was constructed during the WPA era and is approximately nine miles in length. Only the last three miles are within the National Forest. After crossing the ridge dividing the drainage, the road dead-ends on steep side slopes in Lovell Canyon. Construction was halted with the end of WPA funding, leaving the road one-half miles short of a saddle between Kyle and Lovell canyons. The last one and one-half mile of the road is extremely narrow with no passing room and a difficult turn-around at the end. For safety purposes, installation of a gate or barricade has been proposed to close this section of the road. A trail leads from the end of the road to the Kyle Canyon saddle and then up the ridge to the South Loop Trail.

The Kyle Canyon Summer Home Area is located just above private home development in Rainbow Canyon. Individual lots were planned in 1947 for the purpose of constructing private recreational residences. The site was originally platted for 45 lots. There are currently 16 homes under term permit. Most of the homes are older, rustic, wood structures. The remaining lots were withdrawn from further leasing in 1962. Septic tanks primarily are used for sewage disposal. Permittees pay an annual fee for use of Forest land. The permits have an expiration date of December 31, 1998. The Rainbow

Canyon Summer Home Association was formed to promote common interests and to maintain the water system and roads.

A road into Fletcher Canyon was built to develop a spring box and transmission line. This water line is now abandoned but once led to private land just outside the Forest boundary. The Fletcher Canyon road also serves a weather station and helispot, and travel is restricted by a closed gate. An abandoned road leads to Stanley B Springs which was developed by the Forest Service for a water tranmission line. Old lead mine tailings are just above the springs.

Two potential recreation sites are located north of the highway on bench lands separated by Fletcher Canyon. The westernmost site is called Pinyon Mesa; the other, Fletcher Canyon. Vegetation is dominated by pinyon/juniper woodland. A large portion of the Fletcher Canyon site burned in 1965 and reforestation will be necessary to restore forested conditions. Part of this site is also used for the helispot and weather station. Relocation of the highway to eliminate the existing Deer Creek intersection could make this bench accessible. There is also good potential for a visitor center in this area.

Pine Canyon has been logged and has suffered from fire, resulting in stringers of pine with intervening brush fields. Rainbow Canyon is densely forested with pine and fir. These lands are now primarily valued for watershed and aesthetics rather than for timber production. Old logging roads in poor condition lead into the basin of Pine Canyon. A snow course exists in upper Rainbow Canyon for snowfall measurement and water yield prediction.

DEER CREEK

The all-weather paved State Highway 158 interconnects Kyle with Lee canyon. Built in 1962, it is about nine miles in length and ascends to the 8,400 foot elevation. It traverses predominantly pine-covered slopes below Mummy Mountain.

The majority of visitors are sight-seeing and may make brief stops along the way. The scenic resource attracts many visitors and provides good interpretive opportunities.

Deer Creek is the only permanent flow of overland water on the eastern slope. The spring-fed creek is small and percolates back under ground. It provides a unique attraction in the Deer Creek Picnic Area.

A significant point of interest is Robber's Roost Cave. A large paved turnout provides parking, and a steep, but popular, trail ascends to a rocky cliff formation a short distance from the highway. There is potential to develop a high-quality interpretive trail to this feature.

About one mile beyond Robber's Roost is the Angel Peak road intersection and entrance to Hilltop Campground. Less than one-half mile of the Angel Peak road is actually on the Forest and authorized by a Special Use Permit. The narrow paved road provides access to the Spring Mountain Youth Camp and Angel Peak Radar Station on the summit. Hilltop Campground contains 38 units with a

capacity for 190 people. Trailers are prohibited because the road is narrow and parking spurs are short. The site design is more appropriate for a family picnic area and day-use.

On June 29, 1975, a man-caused fire rapidly spread up a steep canyon adjacent to Robbers Roost. On July 4, 1976, a man-caused fire started near Hilltop Campground, threatening recreation sites in this vicinity. This latter burn was seeded with succulent forbs for wildlife benefit, but germination was poor.

The western one-half of Section 7 is privately owned. Ten of these acres have been platted in 72 small lots. There are 12 older rustic cabins and homes constructed near the head of Deer Creek, some probably were once associated with the old sawmill site nearby. Part of this tract lies at the base of a major avalanche path. The cabins are accessible over about one mile of primitive road, one-half of which is on National Forest land.

A spring development constructed by the Forest Service lies within this private land. A concrete tank installed on the hillside is about 935 feet above the boundary. A 10-foot wide right-of-way was granted to the Government in 1932 for water transmission purposes. The Forest Service has rights to the first cubic foot-per-second, and the Air Force to the next .04 cubic foot-per-second. The water is piped to Deer Creek, Mahogany Grove, and Hilltop recreation sites, and to the Spring Mountain Youth Camp and radar station on Angel Peak.

Deer Creek flows year-around in the lower half of this private land, with the flow often extending through Deer Creek Picnic Area most of the summer. Extensive development of private lands above could easily alter the limited aquatic areas, disrupt the fragile ecology, or pollute the water. The uniqueness of the water flow merits protection.

Aside from the cluster of homes in upper Deer Creek and the access road, the remainder of the land is relatively undisturbed. A primitive road leads into the canyon on the north fork of Deer Creek which is often used for a church camp in the summer. The area has poor escape routes and could be dangerous during high-fire conditions. Immediate evacuation should occur with any fire threat.

A second block of privately-owned land is located in Section 25 and 36 near the Lee Canyon Highway. The Deer Creek Highway passes through the upper portion of the fee land. The property is undeveloped, but subdivision has been proposed. The lower bench-land formations have potential for public recreation development. This portion of the property is accessible over the primitive Champion Road. There are approximately 254 acres in fee ownership. The parcel is forested primarily with pinyon/juniper. The highway descends from Desert View through the upper portion of this private land and intersects with the Lee Canyon Highway.

A potential recreation site is located above the highway on the old Mofford's Sawmill site. The site has been named Avote with proposed development for 30 to 40 family units. Below the highway on a rather large

alluvial terrace, is the Tres Piedras site proposed for 200 units. The site is named for three large rock formations along the Champion Road.

Across the Lee Canyon Highway is the proposed Portals Campground for 75 to 100 units. From this pinyon/juniper site the views of Charleston Peak, Mummy Mountain, and the Sheep Mountains are excellent. The site is bordered on the upper side by the Mack's Canyon road. Several small archaeological sites are adjacent to the proposed campground, offering interpretive possibilities.

LEE CANYON

Lee Canyon is approximately four miles in length and two miles in width. The canyon is deeply incised into the mountain range with upper ridge lines above 10,000 feet. Steep slopes and sheer cliffs confine most recreational activity and development to the canyon floor. It is accessible by all-weather, paved State Highway 156. The highway commences at US Highway 95 at 3,200 feet, and extends upslope over desert land to the ski area parking lot at 8,500 feet, a total distance of 18 miles.

Special land uses are few, but intensive in nature. The ski area, summer home sites, and two organization camps are under permit as are the associated water developments and a telephone line. Recreation development is concentrated along the upper canyon floor at four separate sites. There is limited opportunity for future development. The concentration of developments in these upper drainages has increased runoff and accelerated erosion loss. Individual sites and the total watershed must be considered during erosion control planning. In the past, structures have often diverted runoff, creating problems downstream.

In 1972, a sample survey for archaeological sites was conducted in the canyon. No significant prehistoric sites were identified at that time. Wildlife is limited to smaller species because human occupancy has generally forced big game to more remote areas outside this management area. Unauthorized livestock use has contributed greatly to degrading vegetative cover on the Meadows and ski area. A drift fence and cattle guard were installed near the Deer Creek Highway junction to prevent livestock, primarily horses, from entering Lee Canyon.

Two subdivisions are located on bench lands above the highway and have been platted for 175 lots. It is likely that private lands will continue to be subdivided. Aesthetics and recreational values, particularly in proximity to the highway, will be affected by continued home construction. Water supply and sewage disposal will become environmental issues. Increasing residential use will create demands for special uses such as access roads, utility lines, and water transmission.

Whispering Pine Subdivision is platted into over 100 lots. In Section 35 approximately 340 acres are undeveloped and mostly in single ownership. An abandoned mine and access road are currently the only unnatural disturbances on the west side of the highway. Private ownership extends south into Section 2 and 11. Tract 39, 114.14 acres, and the north half of Tract 38, about 80 acres, are included. These lower elevations are undeveloped lands, accessible

over primitive roads. With the exception of the subdivision, all undeveloped lands have a high priority in land exchange or aquisition programs.

Camp Lady of the Snows has been subdivided for 75 small lots accessible by unpaved streets. A 7.5 acre parcel adjacent to the highway has been used for an organization camp, but is now used for overflow parking at the ski area. The northern half of the tract is essentially undeveloped on both sides of the highway. This aggregate of 39.59 acres, including the site of the organization camp, have high priority in a land exchange or acquisition program. Public benefits could include an organizational site, snowplay area, parking, other recreational development, and maintaining aesthetic quality adjacent to the highway.

There are two small private ownerships near the entrance of the Clark County Organization Camp. A .52 acre parcel with a summer home lies inside the road curve directly across from the McWilliams Campground entrance. A 1.13 acre land title was unclear as ownership was originally granted to both the United States and a private party. Title was conveyed in 1976 to the private party. Dividing the Meadows is a 4.12 acre strip of undeveloped land owned by Clark County. At the lower end of the Meadows is a .98 acre parcel with a dwelling in private ownership.

The right-of-way for State Highway 156 is deeded to the State of Nevada. The width is generally 200 feet on each side of the centerline when contiguous to National Forest lands, and 100 feet of centerline when crossing private ownership.

Snow is an unusal attraction for the typical Las Vegas resident who is unfamiliar with winter driving techniques and is often without chains or snow tires. During winter conditions this can cause safety problems along the highway. Sightseers add to the congestion in the parking area and along the highway, particularly at the Meadows. Several interagency discussions have generated suggestions, alternatives, and some solutions to these traffic problems.

Lee Canyon Ski Area provides an unusual winter experience in a vast desert region. Promotional literature and articles about Las Vegas often mention skiing as one of the variety of recreational opportunities. Recreational use is rapidly increasing in Lee Canyon. Commercial services must be subordinate to this use. Visitors have a multitude of choices in Las Vegas and expanded commercial operations on the Forest would serve no benefit and would only introduce conflicts.

Use projections indicate that demand will exceed the potential capacity of the ski area. Parking will be a major limiting factor. This factor, properly used in planning, can be used to effectively control use in relation to designed maximum capacity for lifts, ski runs, and base facilities. Space for additional parking adjacent to the ski area is limited and could cause severe environmental degradation. Impervious parking surfaces are now a major contributor to downstream erosion during intense rainfall.

The ski area parking lot is a widely-paved switchback ending in a turn-around. The parking lot and highway are maintained by the Nevada

Department of Transportation. Law enforcement and traffic control are the responsibility of the Highway Patrol and Clark County Metropolitan Police Department.

Congestion at the parking lot in winter has been a long-standing problem. The lot was planned for a maxiumum of 500 cars, which can only be achieved with parking attendants and complete snow removal. About one-quarter mile below the ski area is an unpaved clearing used as an overflow parking lot. The Forest Service is opposed to further expansion for parking until efficient use is made of the existing surfaces. Alternatives may include time zone parking, eliminating sightseeing traffic, and shuttle bus transportation.

Two tracts of private land were originally within the ski area when first proposed. These were acquired in 1969 by the Forest Service through exchange. Thus, all lands within the ski area are now public. Three major paths and the large expanse of steep slopes above the ski area make avalanche control difficult. Closures have been necessary for public safety during heavy snow accumulation. Avalanches have occurred at frequent intervals due to erratic snowfall.

Erosion loss can be severe on disturbed soils unless erosion control is provided. Loss of top soil and vegetation created some serious erosion problems with channels forming on the ski slopes and alluvium being carried beyond the ski area. Runoff has accelerated and become concentrated, causing downstream scouring and erosion in Lee Canyon. Recent attention has been directed toward erosion control and establishing a 50 percent ground cover of grasses.

In the past, gullies have been reshaped and filled by bulldozer, further exposing fine materials to erosive action. Vehicular travel has left defined ruts for water courses, or cut through water bars. The upper Chair Two area has more subsoil clay, resulting in slower permeability than elsewhere.

The ski area often suffers from erratic snowfall. Some years the ski season may run from December through March; other years there may be only a few weeks of skiing. Artifical snow-making may be an important factor in sustaining a ski season during marginal snow conditions. The required waterlines could also be utilized for summer irrigation of grass cover on ski runs.

There are three known springs within the area. One spring, about one-quarter mile above the Chair Two terminal, provides water for the Lee Canyon water system. The ski area, Clark County Organization Camp, McWilliams Campground, Old Mill Picnic Area, and Foxtail Snowplay Area are served by this system. The water system was reconstructed amd enlarged in 1973. Overflow has been provided at several points as a water source for wildlife. Two wells within the ski area base could be used as a supplemental or independent water source for the ski area and for snowmaking.

The aesthetic appearance is important in both winter and summer. Parking areas, cleared runs, facilities, and utilities all have visual impact. Power is currently generated on-site and distributed by underground lines. Propane tanks and storage of materials is often conspicuous.

McWilliams and Dolomite are developed sites just below the ski area. The 19-acre McWilliams site has been used as a developed campground since 1937 when facilities were first installed by CCC labor. The name is in recognition of James T. and Iona McWilliams. McWilliams was a surveyor who in 1904 surveyed the Las Vegas Ranch which was auctioned as the Las Vegas Townsite in 1905. The county operated and maintained the campground for several years. The campground was extensively expanded and improved in 1969 and paved in 1970.

A snow course is located in the drainage above McWilliams recreation site. The upper section of Road 20071 is narrow and closed to public travel. It is used rarely for administrative needs such as fire or rescue evacuation. The road is used as an access trail to divide the trail system at higher elevations. A trailhead near McWilliams would improve dispersed use.

Dolomite Campground was expanded in 1969 and the roads were paved in 1970. A separate entrance was provided to serve the site. An old road between the two campgrounds was closed to eliminate traffic past the units in McWilliams. Dolomite has 31 units with a capacity for 155 people.

Old Mill Picnic Area was built on a 22-acre site in lower Scout Canyon in 1974. Centralized parking lots were designed to minimize impacts of the road system serving individual units. The capacity is for 500 people who can be seated at 74 tables. A sawmill in upper Scout Canyon was constructed in 1906 by the Lincoln County Lumber Company; it burned in 1910. Concrete foundations of a small operation from the late 1940s are still intact. The name "Old Mill" was derived from these sawmill enterprises.

Two special-use organization camps are administered by Clark County and the Frontier Girl Scout Council. The camps are located in canyon bottoms below large expanses of exposed rock. Rapid runoff characteristics create a flood threat during heavy cloudburst activity. Accelerated runoff from the ski slopes above the county camp increases this potential.

Location of facilities should be planned to avoid natural drainage channels. Enlarging, straightening, and diverting natural channels has concentrated, rather than dispersed, runoff. Erosion control should contain water on-site rather than diverting it. Disturbances need to be revegetated. Septic tanks may become a source of pollution to underground water.

The Lee Canyon Youth Camp was built in 1936 under WPA programs during which many trails, roads, and facilities were constructed. The lands were donated by J.T. McWilliams for permanent use to benefit public recreation. Other lands in this area were purchased from McWilliams by the Forest Service. Government-owned buildings include seven dormitory cabins, a dining hall, bathhouse, power house, storage structures, recreation hall, and two dwellings.

In 1946 the Forest Service issued a Special Use Permit to the Clark County Recreation Board to operate the camp for children and organized groups. The existing permit was issued in May, 1982, for a period of 20 years

to the Board of County Commissioners. Since this permit is issued to a public agency, no charge is made for occupancy of the site and government facilities.

Above the county camp is a snow course established in 1962 at an elevation of 8,500 feet. Average water content on March 1 is 8.8 inches and on April 1 is 8.9 inches. Preservation of this snow course is important to meaningful measurement of annual water yield and snowfall.

Foxtail Girl Scout Camp contains a dining-recreation hall, office, infirmary, residence, three dormitory cabins, and several storage and toilet buildings. Separate complexes of tent platforms are provided for troop camping. The permit was first issued in 1952 for five acres. It was reissued for 20 years in January, 1969, for 15 acres. An annual fee is charged for this occupancy based on land appraisal. Construction of most facilities commenced in 1956.

An underground telephone cable passes through the camp and provides phone service to Lee Canyon. Also buried under the road is a water line serving the camp from a developed spring three-fourths mile up the canyon. This water system was developed independently for the camp and serves no other sites.

Current access is from the highway up Foxtail Canyon over a graded road of about three-fourths mile. Snow removal is necessary during winter. Conflicts between the Girl Scout Camp and public use in the Foxtail Snowplay and Group Picnic Site are envisioned. Eliminating traffic to the camp via Foxtail Canyon would better isolate the camp and provide a buffer. The site is separated from the county camp by an intervening ridge. A short road over this ridge to the county camp, using portions of older existing roads, could provide improved access.

The Foxtail Snowplay and Group Picnic Site was contracted in 1974. The unit is designed for 400 people in winter and 225 in summer. Parking will accommodate 102 vehicles. Sliding areas are provided for winter tubing and sledding. Three separate group units, seating 75 people each, are provided for summer group reservations. This site was developed primarily to alleviate parking congestion and safety problems adjacent to the Meadows.

The Meadows is a flat, grassy area of 20 acres that has received intense recreational use because of proximity to the highway. Ball diamonds and playground equipment were once located on the Meadows. Construction of the highway concentrated runoff into a single drainage resulting in a gully up to six feet in depth. Soil compaction and vegetation trampling from public use reduced ground cover and increased erosion. Trespass horses also caused damage.

Deterioration of this aesthetic site led to attempts to discourage heavy public use. The county camp was asked to use other areas for organized sports. Boy Scouts and similar organizations were requested to camp elsewhere. Rules were established in 1973 to control litter, abolish overnight camping, eliminate campfires, and exclude livestock grazing.

Water lines have been extended to the Meadows. Sprinkers, fertilization, and reseeding to maintain the Meadows have been suggested. Erosion control

structures and on-site containment of runoff above the Meadows will be necessary before gully erosion can be corrected. A county-owned parcel of 4.12 acres divides the Meadows, and a private dwelling occupies .98 acre at the lower end.

The Lee Canyon Recreation Residence Area was approved in 1956. Individual lots were for the purpose of constructing private summer homes. The tract was originally planned for 17 lots. There are now nine residences under term permit. The remaining eight lots were withdrawn from further leasing in 1962.

Water development to serve these nine residences consists of a well and storage tank with distribution lines. The system was installed by the permittees through formation of the White Rock Mountain Home Corporation. A free-use permit issued April 1, 1964, authorized these improvements. Power generators are utilized at each home site as electrical service is currently not available in Lee Canyon. Sewage disposal is by individual septic tanks.

Permittees pay an annual fee for use of Forest land. The permits have an expiration date of December 31, 1998. The tract may have potential for future recreational development. Lands in this unit were purchased and are not subject to mineral entry.

OTHER CANYONS

A primitive, single-lane road of about four miles commences on the Lee Canyon Highway and deadends in Mack's Canyon. Another primitive road accesses BLM lands below Mud Springs. A steep road provides access to Camp Bonanza, a former Boy Scout Camp that has been abandoned and the permit closed.

The Camp Bonanza Road intersects with the Wheeler Pass-Cold Creek Road. The paved Cold Creek Road is 12 miles in length, leading to US 95 and then 40 miles to Las Vegas. Within two miles are BLM campgrounds at Cold Creek and Willow Springs, accessible over the dirt road leading to Wheeler Pass. These sites have the unique attraction of flowing water.

A six to eight mile paved highway has been proposed from Lee Canyon to the Cold Creek Road. The route generally would follow the first two miles to Macks Canyon and then continue along the foothills to intersect with the Cold Creek Road. This would provide the motorist, making the circle tour across Deer Creek Highway, a longer option of returning to Las Vegas via the Cold Creek Road. The highway would disperse sightseeing traffic over a larger area. Careful location would be required to avoid disrupting wildlife values around Mud Springs. The location should stay far below Mud Springs.

Emergency and administrative travel would be greatly improved by reaching Camp Bonanza from Kyle Canyon in less than 20 miles, rather than the existing drive of over 50 miles. Potential sites in this area could be developed for camping. This would divert some recreational pressure from the heavily used Kyle and Lee canyons (which need to be converted to day-use anyway) for more efficient recreation management.

There are no known archeological sites of significance on the Forest in this area. However, no intensive survey has ever been conducted. Two sawmill sites near Camp Bonanza contain relics and remnants of machinery. Wildlife is not abundant, but is more prevalent here due to more limited human use. Deer and elk migrate in and out of the area. Turkeys were introduced around Camp Bonanza. Wildlife values may be adversely affected by increased human occupancy and road construction. The Mack's Canyon (Cold Creek) fire of 1981 burned 6,400 acres, including three potential recreation sites.

The existing Wheeler Pass Road from Pahrump generally follows the Wheeler Wash drainage. Trough Spring, Clark Canyon, and Wallace Canyon are accessible over side roads from this main travel route. A well-maintained graded road branches from Wheeler Wash to Clark Canyon, providing the easiest and most direct travel time to Forest lands from Pahrump.

A trail has been constructed from Trough Spring up to the Bonanza Peak Trail, but is not completed. This trail section is proposed as part of the Divide Trail across the crest of the Spring Mountains. A snow course is located above Trough Spring along this trail. A bench formation along this trail has an abandoned mine shaft indicating early day mineral exploration. A trail has been proposed to continue from Trough Springs toward Wheeler Pass.

Clark Canyon is accessible over a graded road from Pahrump. Major road relocations and reconstruction have occurred since the private lands were acquired by the present owner in late 1964. Private equipment has frequently been used to maintain roads. Maintenance has not always provided for erosion control or water escape from the road surface. Unauthorized disturbances have occurred off the roads.

The private land of 373 acres consists of bench-land formations and alluvial bottom lands. Irrigated pastures, separate home sites, dams for water impoundment, roads, and skid paths for woodcutting have been constructed in recent years. Erosion potential has increased with this disturbance and there is concern for flood potential from the earthen dams.

An intervening piece of National Forest lies between two parcels of private land. An open flat in the drainage bottom was once used as a Forest Service tent camp. This camp was used in 1960 while reforesting the Clark Canyon burn. Remains of an older log cabin are of interest and may have local historical significance, predating the Clark Sawmill.

The historic Clark Sawmill is located adjacent to the private land. Fencing of this sawmill site became necessary to protect remaining machinery parts, the boiler, and other remnants. The site has been signed for protection as an antiquity and is being considered for nomination to the National Register of Historic Places.

A large steel gate prevents the public from traveling beyond Clark Sawmill. This gate was relocated in 1976 to the assumed property line. A historical road to the log cabin and sawmill existed in this canyon prior to the 1881 survey. The road is inventoried on the Forest Transportation System. The gate and a fence block access and discourage use on approximately five square miles of National Forest land above the private lands.

A large fire in July of 1959 consumed 3,600 acres in Wallace Canyon. Starting on BLM lands to the west, the fire rapidly burned three miles into the canyon, with winds up to 50 miles an hour. Portions of the bottom land and adjacent benches were salvage-logged for fuelwood. Plantations of Jeffery pine failed to survive. Remaining timber is now threatened by insects and disease.

Wallace Canyon is accessible over about five miles of primitive road from Wheeler Wash. The road continues up the canyon bottom, but soon becomes impassable except to four-wheel drive vehicles. The alluvial bottom has been subjected to active erosion and the channel is unstable. Flood conditions can transport large amounts of material.

Upper Wallace Canyon has been inventoried as a potential recreation site. This area is heavily forested in a mixed pine-fir stand. The site is one of the largest within the National Forest and the only site on the western slopes of sufficient size for development. Access would be costly and would require over eight miles of road construction from Wheeler Wash. The road would be routed along bench lands above the alluvial channel as much as possible.

A water transmission line has been laid in the alluvial wash and is exposed in many locations. This pipeline transports water from a scenic rocky gorge to cattle troughs on BLM lands. Water rights will need protection for public benefit in this area. Aesthetic impacts of the pipeline will need to be considered. The rocky gorge and waterfall are attractions with interpretive possibilities.

APPENDIX H

MINERAL/GAS/GEOTHERMAL IMPACTS BY MANAGEMENT AREA

MANGEMENT AREA NAME AND NUMBER	ACRES OPEN	MINERALS WITHDRAWN	GEOTHERMAL	OIL AND GAS	TOTAL
1-Dog Valley	23722	1278			25000
2-Carson Front	90156	44			90200
3-Alpine	113624	976			114600
4-Walker	199188	4512			203700
5-Existing Wilderness	0	135100			135100
6-Bridgeport/P-J	605107	293			605400
7-Paradise/Shoeshone	267240	560			267800
8-Toiyabe	526396	2562	5659	6383	541000
9-Toquima	525179	239	8542	1440	535400
10-Monitor	695254	1569		4377	701200
11-Mt. Charleston Developed	12538	1682		1280	15500
12-Mt. Charleston Wilderness	38644	38		3818	42500
	3084894	149007	14201	17298	3265400

☆U S GOVERNMENT PRINTING OFFICE 1986—676 140 40001