Eldorado National Forest

# Land and Resource Management Plan

1988

Pacific Southwest Region

USDA Forest Service


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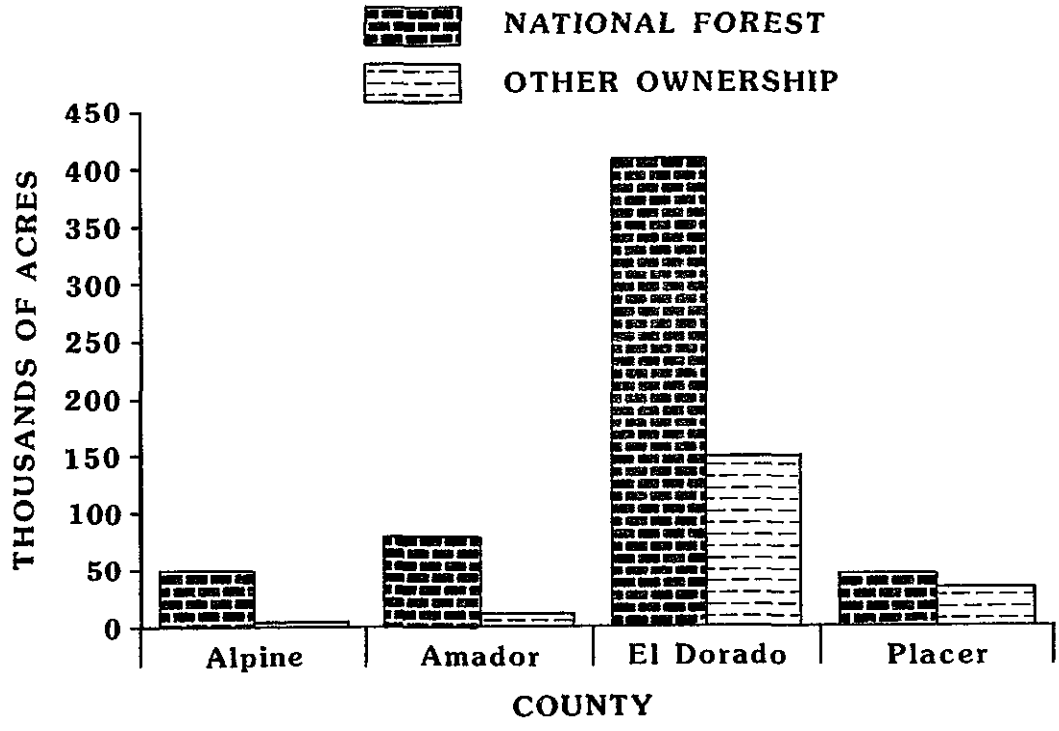
This is a Plan for managing the Eldorado National Forest for the next 10-15 years, after which it must be revised. If the need arises, it will be revised or amended earlier.

# Preface

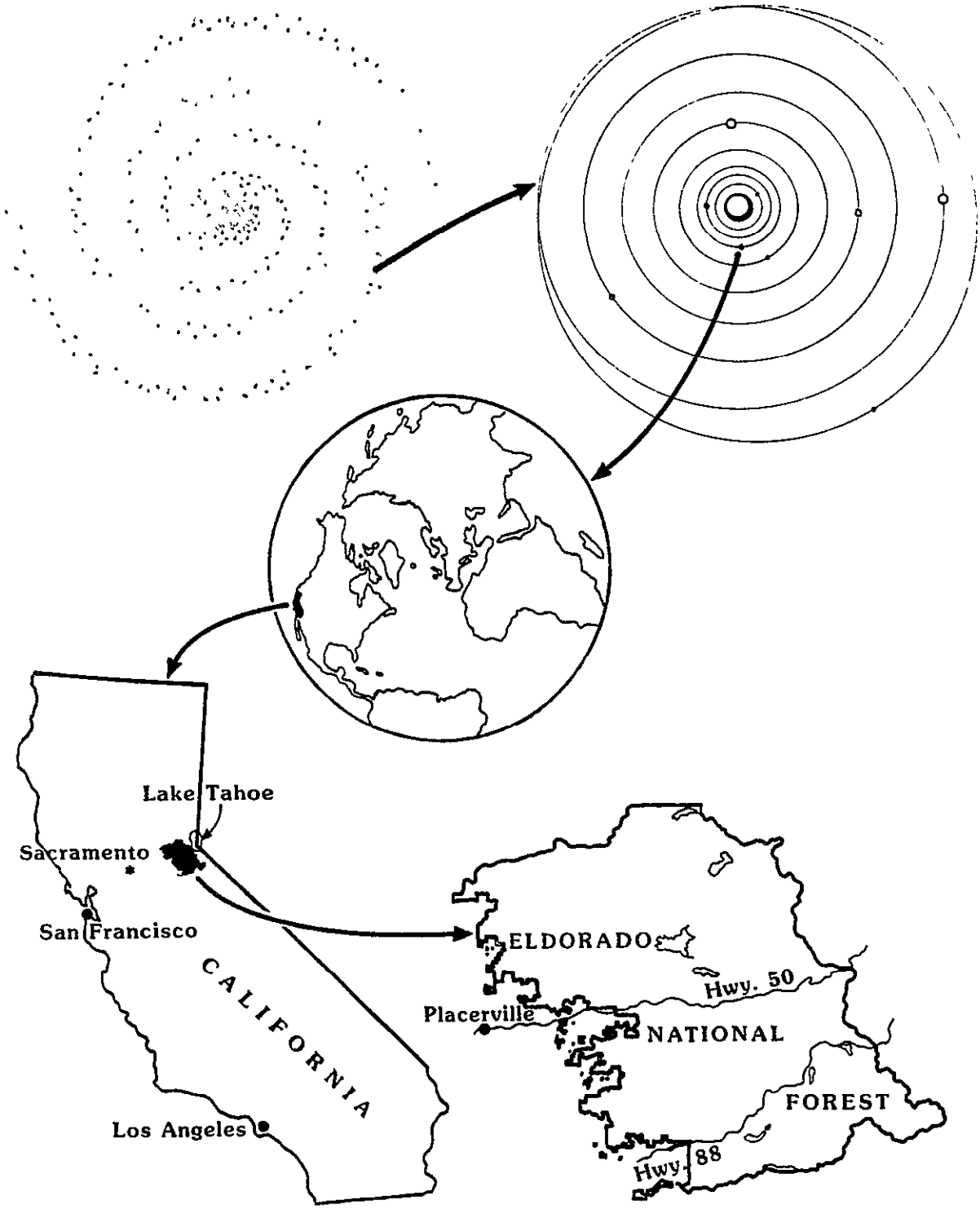
The Eldorado National Forest lies in the central Sierra Nevada. Forest land is situated entirely on the western slope of the mountain range between the foothills of the Mother Lode and the Sierra crest. Forest vegetation changes from chaparral brush and oak woodland at lower elevations to alpine growth and barren rock near the summit. Dense pine, mixed conifer, and red fir timber stands dominate the mid-elevation landscape. The Eldorado is a highly diversified, productive Forest.

Parts of Alpine, Amador, El Dorado and Placer Counties are covered by the Forest Plan. An acreage summary follows:

| County | National Forest | Other | Total |
|---|---|---|---|
| Alpine | 50,278 | 3,774 | 54,052 |
| Amador | 77,849 | 12,033 | 89,882 |
| El Dorado | 417,448 | 140,896 | 558,344 |
| Placer | 51,149 | 33,567 | 84,716 |
| | 596,724 | 190,270 | 786,994 |



## Vicinity Map



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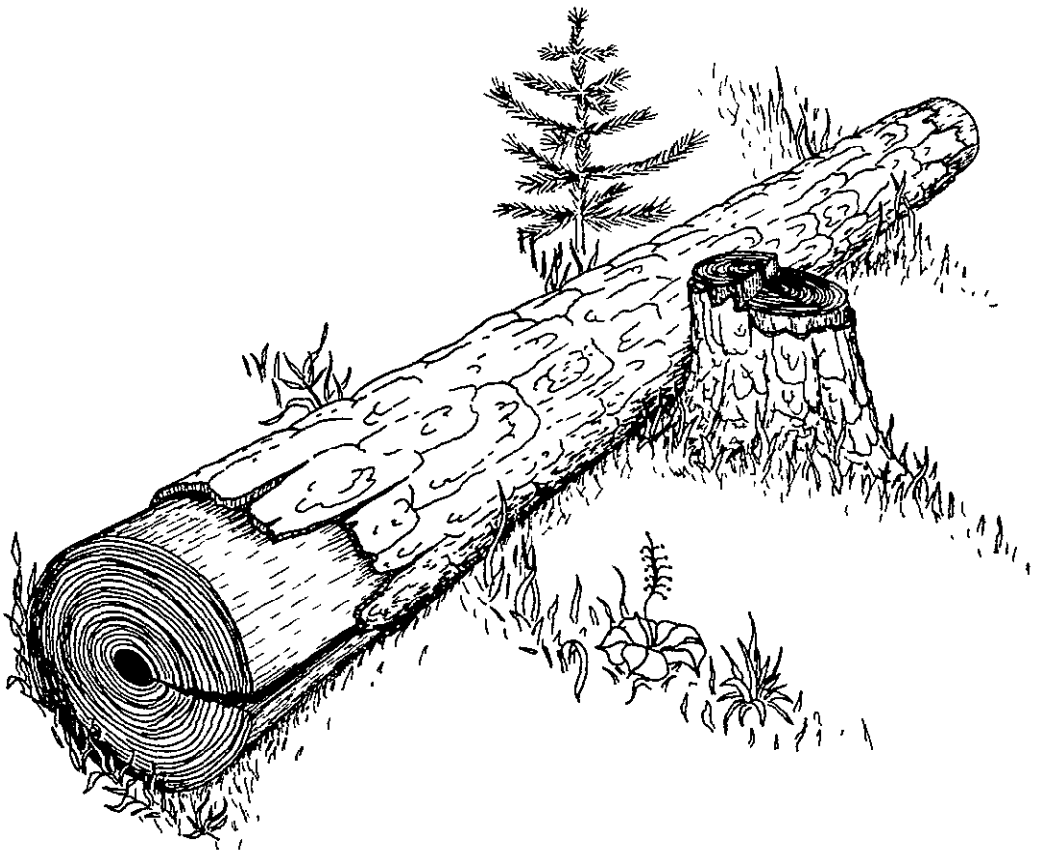

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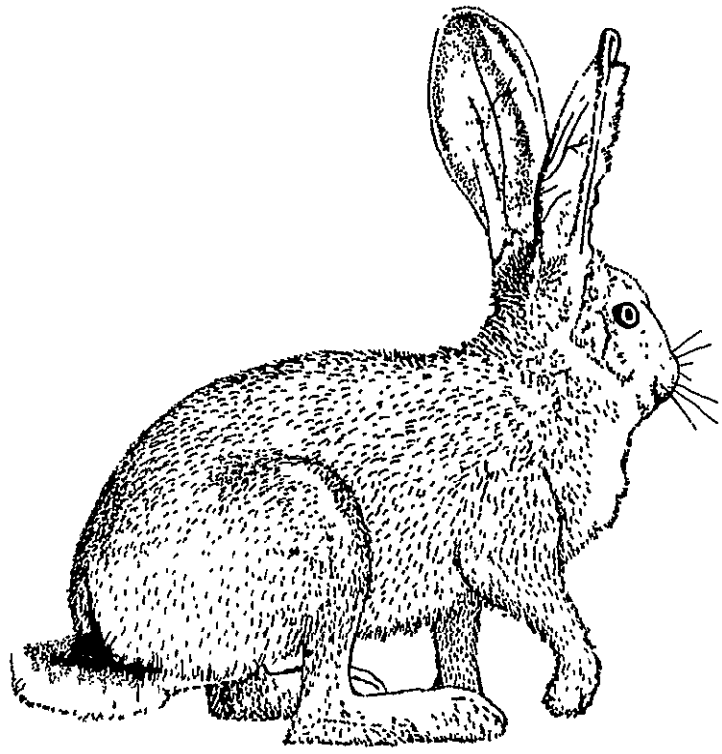

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# I. Introduction

## A. Purpose of the Plan

The purpose of the Plan is to direct the management of the Eldorado National Forest. The Plan prescribes compatible sets of Forest practices for the land and the resources. Acres are assigned to different resource uses, and targets are set for the production of market and nonmarket goods and services. The Plan shows the government's cost of doing business and the value to society of performing a planned program.

The proposed Plan contains specific management actions for the plan period. The plan period is comprised of the next 10-15 years only. The plan period is defined by the NFMA regulations as one decade (36 CFR 219.3, 1982), while the law permits a 15-year maximum (16 USC 1604 (f) (5)). Conditions on the Forest will be reanalyzed within the plan period and a revised Plan developed ( 36 CFR 219.10 (g), 1982 and 16 USC 1604 (f) (5)).

Environmental protection is gained by applying management requirements to approved Forest activities. The Plan also meets legal requirements and deals with local, state, and national issues. To accomplish its purpose, the Plan:

1. Names Forest long-range goals and objectives for a 10-year period;

2. Schedules the location and occurrence of forest practices by management areas;

3. Establishes standards and guidelines for forest practices; and

4. Ties management activities directly to the Forest Service budgeting system, linking them with the periodic assessments and programs developed at the national level under the Forest and Rangeland Resources Planning Act (RPA).

Preparation of a comprehensive, integrated Forest Plan fits into a larger network of regional and national planning direction that establishes resource production quantities for National Forest System lands. The RPA program is built on continual assessments of land capability and suitability, which flow up to Washington D.C. from each Forest Service region. The RPA data are analyzed on a national scale, and an environmental impact statement (EIS) is written for a proposed service-wide program. When the current RPA program is approved, targets are distributed downward. Each region receives a share of national production quantities for further distribution to the forests of that region. These targets are real targets based on site specific information reported earlier by the forests. The planning cycle is then completed.

## B. Relationship to Other Plans

All of the existing land and resource management plans were reviewed by the Forest's interdisciplinary team during the planning process. The team determined that several plans will remain consistent with or complement this Forest Plan. Existing plans that are still valid include the following:

Desolation Wilderness Management Plan
Mokelumne Wilderness Interim Management Guidelines
Round Top Recreation Composite Plan
State Route 88 Recreation Composite Plan
Highway 88 Landscape Management Plan
Soda Springs-Riverton Landscape Management Plan
Eldorado Fisheries Habitat Management Plan
Wrights Lake Grazing Allotment Plan
Rodoni and Tells/Gerle Units Grazing Allotment Plan
Liddicoat Grazing Allotment Plan
Pyramid Grazing Allotment Plan
Indian Valley Grazing Allotment Plan
Cody Meadow Grazing Allotment Plan
Bear River Grazing Allotment Plan
Pearl Lake Grazing Allotment Plan
Chipmunk Grazing Allotment Plan
Corral Flat Grazing Allotment Plan
Pardoe Grazing Allotment Plan
Old Pino Grazing Allotment Plan
Bryan Meadow Grazing Allotment Plan
Big Hill Grazing Allotment Plan
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Silver Lake Unit/Cody Meadow Grazing Allotment Plan
Y Meadow Grazing Allotment Plan
Sherman Grazing Allotment Plan
Soldier Creek Grazing Allotment Plan
Morrison Grazing Allotment Plan
Leak Spring Grazing Allotment Plan
Caldor Grazing Allotment Plan
Rockbound Grazing Allotment Plan
Eldorado Interpretive Plan
Crystal Basin Interpretive Plan
Forest Development Transportation System Plan
Emigrant Summit Trail Management Plan
Pony Express Trail Management Plan
Cultural Resources Monitoring Plan
SOFAR Comprehensive Cultural Resources Plan
Mokelumne River Project Cultural Resources Plan
Forest Fire Prevention Plan
Forest Aviation Plan
Forest Fire Qualifications and Standards Plan
Species Management Guide - Navaretia prolifera ssp. lutea

The 1979 Off Road Vehicle (ORV) Plan will remain in effect, with some additional closures and restrictions, until January 1990. At that time, a new Forest ORV Plan will become effective.

Five existing land and resource management plans will be superseded when the Forest Plan is approved. Superseded plans include the following:

Eldorado National Forest Multiple Use Plan
Eldorado Land Adjustment Plan
Forest Initial Attack and Mobilization Plan
Volcanoville Unit Plan
1978 Eldorado Timber Management Plan

Seven cooperator plans supplement this Forest Plan. They are also consistent with proposed management of the Eldorado National Forest. These cooperator plans were prepared by the California Department of Fish and Game and U.S. Fish and Wildlife Service and include the following:

Rubicon Wild Trout Stream Plan
Grizzly Flat Deer Herd Plan
Pacific Deer Herd Plan (except overlap with the Peavine RNA)
Blue Canyon Deer Herd Plan
Salt Springs Deer Herd Plan
Pacific Bald Eagle Recovery Plan, 1986
Recovery Plan for Peregrine Falcon (Pacific Population), 1982

The analysis that supports the Forest Plan is contained in an approved EIS. The Record of Decision for the EIS is signed by the Regional Forester of the Pacific Southwest Region of the Forest Service. The Forest Plan and associated EIS become combined documents, whereby the EIS discloses the environmental consequences of the alternatives considered in reaching the approved Forest Plan. The selected plan is derived from the preferred alternative of the EIS.

The EIS for the Forest Plan also serves as a tiered document under the Council of Environmental Quality (CEQ) regulations (40 CFR 1502.20 and 1508.28) for the National Environmental Policy Act (NEPA). Environmental assessments (EA) for Forest projects and other activities affecting the environment will be tiered to the EIS for the Forest Plan. Project approvals will be given through Decision Notices signed by the Supervisor. Relevant project issues already addressed in broader terms in the EIS may be summarized in the project EA, and discussions are incorporated by reference from one document to the other. The tiered EA then can be focused on site specific issues related to particular project activities.

## C. Implementation

The Forest Supervisor shall, upon implementation of the Forest Plan, make sure that all outstanding and future permits, contracts, cooperative agreements, and other instruments for the occupancy and use of affected lands are consistent with the Plan, subject to valid existing rights. Subsequent administrative activities affecting such lands, including budget proposals, shall be based on the Plan. The Forest Supervisor may change implementation schedules to reflect differences between proposed annual budgets and funds actually appropriated by Congress. Schedule changes shall be considered an amendment to the Forest Plan, but no change shall prompt the preparation of any EIS unless it significantly alters the long-term relationship between production levels of goods and services projected under planned budgets compared to those projected under final appropriations.

## D. Amendment

The Forest Supervisor may amend this Forest Plan. Based on an analysis of the objectives, standards and guidelines, and other contents of the Forest Plan, the Forest Supervisor shall decide whether a proposed amendment would result in a significant change in the Plan. However, if the change resulting from the proposed amendment is judged to be significant, the Forest Supervisor shall follow the same EIS procedure initially used for the development and approval of the Forest Plan. If the change resulting from the amendment is determined not to be significant for the purpose of the planning process, the Forest Supervisor may implement the amendment following appropriate public notice and satisfactory completion of NEPA procedures.

## E. Revision

The Forest Plan shall routinely be revised on a 10-year cycle or at least every 15 years. The plan may also be revised whenever the Forest Supervisor determines that conditions or demands in the area covered by the plan have changed substantially -- or when changes in RPA policies, goals, and objectives would have a significant effect on forest level programs. The Eldorado interdisciplinary team, in their monitoring and evaluation role, may recommend a revision to the Forest Supervisor at any time during the normal life of the Plan. Revisions are not effective until they are considered and approved in accordance with requirements for the development and approval of a Forest Plan. The Forest Supervisor shall periodically review conditions on the land covered by the Plan to determine whether those conditions or demands of the public have changed significantly.

## F. Public Review and Appeal

The Regional Forester will approve the final Forest Plan and Environmental Impact Statement. Approval will occur when the Regional Forester prepares and signs a concise public Record of Decision. The approved Plan will not become effective until at least 30 days after the publication of the Notice of Availability of the FEIS in the Federal Register.

The Regional Forester's decision may be appealed in accordance with provisions of 36 CFR 211.18. Certain decisions are not appealable, including decisions to disapprove a Forest Plan and preliminary process decisions made prior to completion of final plans.

## G. Organization

The Plan is divided into five chapters. Chapter I gives an introduction to the Forest. Chapter II tells how the Plan deals with public issues and management concerns. Chapter III summarizes the analysis of the management situation in terms of current outputs, supply-demand trends, production potential, and resource opportunities.

Chapter IV is the working part of the Plan. Specific direction for Forest managers is stated in this section. The direction is linked to land management areas, output schedules, and program budgets. Compatible forest practices are applied to distinct parts of the Forest under detailed sets of standards and guidelines.

Chapter IV is arranged in a format that is keyed to the Forest Plan map. The Eldorado is divided into six major management emphasis zones. Each zone is color-coded both on the map and the management *area prescription pages of Chapter IV for cross-referencing.*

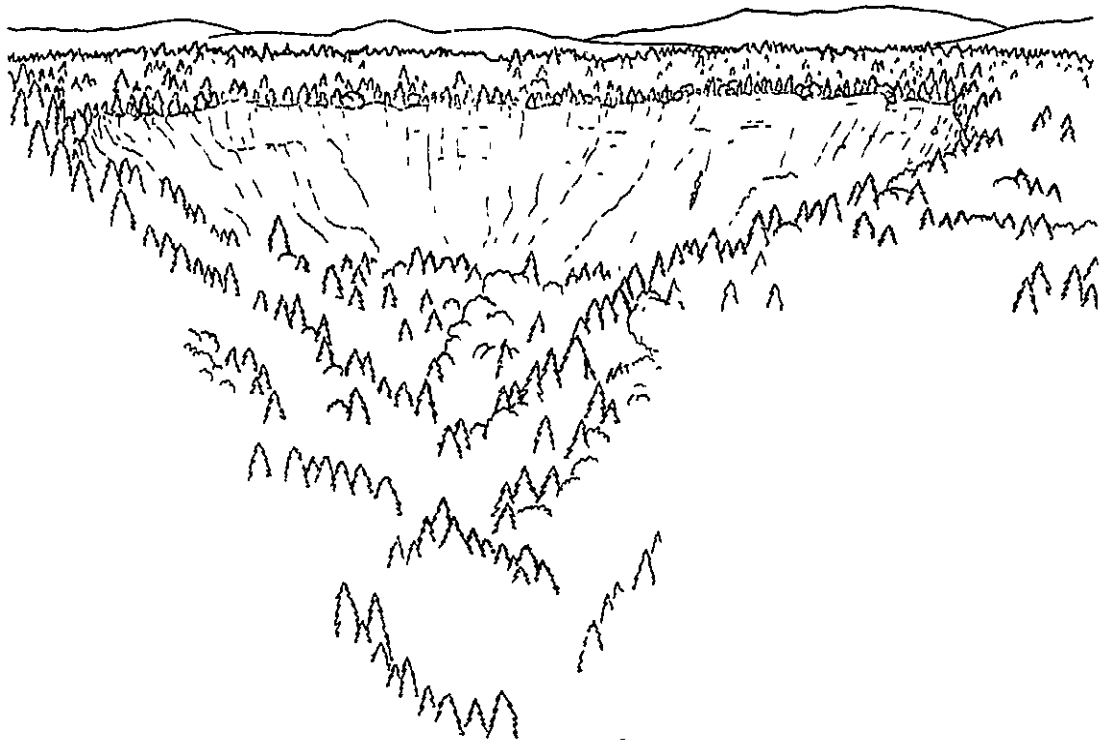
The six emphasis zones in Chapter IV are subdivided into thirty management areas. Each management area is headed by an emphasis statement and detailed description of the land that fits into that category. Each management area is further defined by a combination of Forest practices aimed at meeting objectives. Several practices are common to all management areas. These types are called Forest-wide practices and have related standards and guidelines that apply universally across the Forest. The remaining practices have standards and guidelines that change by management area. These types of practices give individualized direction to each separate management area. The Forest uses 74 Forest-wide practices and 57 variable practices.

Combinations of practices, standards, and guidelines make up a management area prescription for land treatment. Management areas are numbered from 1 to 30. Management areas 17 and 27 are omitted because they are applied in other EIS alternatives than the

preferred alternative. Practical use of the Plan is made by matching the management area prescription to its companion location on the ground. The Plan user may either look for a particular management area first and reference it to the map -- or find a known area on the map (or actual ground location) and reference it to a management area in the plan. The color-code and management area system makes the connection between the Plan and the map.

Chapter V lays out the monitoring and evaluation requirements of the Plan. Monitoring and evaluation provide the means for the Forest to scientifically assess implementation of planning direction contained in Chapter IV and rate the overall effectiveness of the Plan. Forest activities are monitored by objective, technique, precision, validity, frequency, and variability from prescribed standard. Monitoring requirements are grouped by the major program elements currently indexed in the Forest Service Management Information Handbook (FSH 1309.11a).

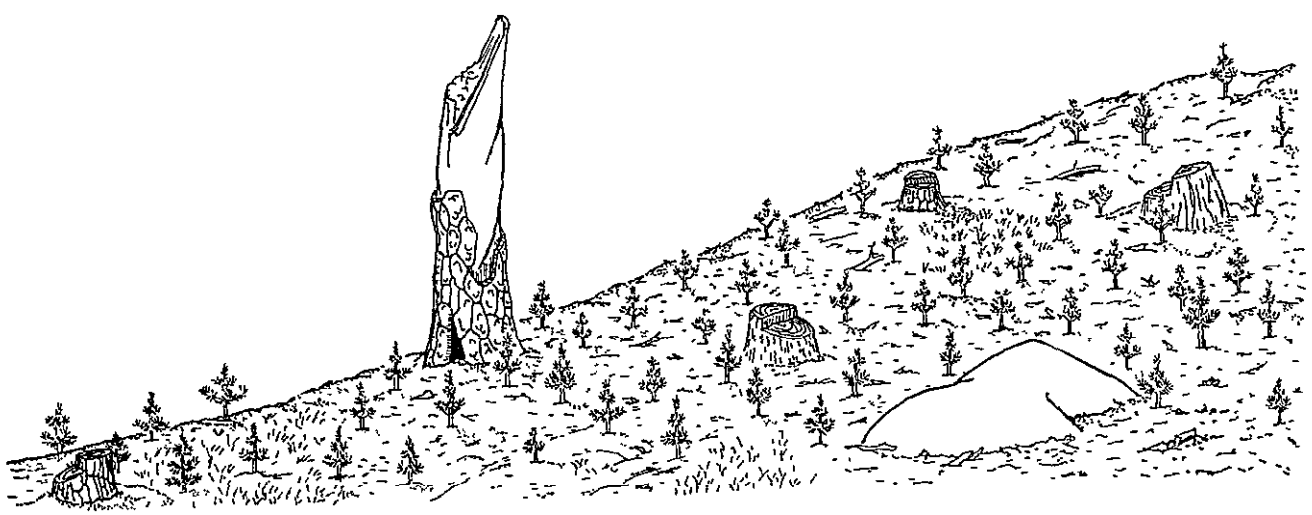
The appendixes to the Plan contain supporting information.



**Big Crater Geologic Special Area**

Chapter II

# Public Issues and Management Concerns



# II. Public Issues and Management Concerns

This chapter summarizes issues and concerns -- and explains how each one is dealt with or resolved in the Forest Plan. Forest issues and concerns are stated as questions. Eleven major Forest activities have prompted widespread public and internal Forest Service interest.

## A. Energy

### 1. Issue Statement

To what extent should the Forest meet future energy needs?

### 2. Issue Summary

The availability of cheap, plentiful energy of all kinds has national significance. Consumer demands have caused people to look closely at traditional sources of natural energy such as wood and water.

Home heating with firewood from the Forest has been a lasting custom of residents of local communities. Until recently, wood permits were issued free for personal use, and material was generally accessible and plentiful. The local situation has changed drastically, making the firewood market one of the keenest issues facing forest managers. Demand has increased and will grow in the future. Supply has leveled off and could temporarily decrease with a sagging lumber economy. Sources of firewood have edged farther from points of use. Competition in the Forest by prospective wood gathers has created a major administrative job for the Forest Service. This has led to an increased workload of law enforcement cases involving illegal removal of firewood. An evolving wood biomass technology stands as a possible cause for even greater competition for this desirable forest energy product.

Hydroelectric power has been generated from the Forest water resource since the early part of this century, and feasible development opportunities still exist. Potential includes both large and small hydroelectric projects. These remaining opportunities match the continuing market attraction for water energy against the retention of Forest amenity values that hydroelectric projects tend to reduce, change, or eliminate. Scenic quality, wildlife and fish habitat, slope stability, and streamside aesthetics are four main amenity resources involved in the issue. Reduction of the timber base and loss of grazing land are additional tradeoffs that impact Forest productivity and lower revenues. Some of these Forest resource losses can be satisfactorily mitigated; others are irretrievable.

Wind and geothermal energy were also identified in the issue scoping process but to a much lesser extent than wood and water. Respondents, including the California State Department of Energy, suggested that the Eldorado accommodate wind energy potential on National Forest land. Other respondents suggested that the Forest make geothermal opportunities available. These two less conventional sources did not draw opposition from the public. The sole concern is that they do not conflict with other forest uses where wind and geothermal features are sited in the Forest.

One final energy issue involves the conservation of energy by the Forest as an operating government agency. Public input suggested the Forest Service become economy minded in the operation and maintenance of buildings and motor vehicles.

## 3. Issue Resolution

Timber sale residue will continue to be a leading source of wood energy. Every effort will be made to make otherwise unused cull logs and slash from timber sales available for personal home heating and biomass energy cogeneration.

Demand for firewood rose sharply after the 1974 oil embargo, and a leveling off at 82.3 thousand cords sold per year is expected in the planning decade. This market output equals 41.15 million board feet annually, which the forest can meet. Firewood gathers, however, can expect to drive farther, work harder, and probably incur a higher out-of-pocket cost for the material they remove under permit.

Biomass utilization opportunities have been slow to develop. As economical means of recovering suitable wood materials are researched and perfected, the demand for biomass should increase. Sources other than sale residue, such as biomass recovery from precommercial timber thinnings, will supplement the Forest supply. Care will be taken by Eldorado resource specialists to prevent depletion of the soil resource by closely monitoring biomass harvest. Forest direction gives priority to personal home heating when there is competition between individuals and biomass entrepreneurs for the same product.

Placement of new hydroelectric facilities on the Forest conflicts with lands designated in the plan for Wilderness, Research Natural Areas, Special Interest Areas, and Wild and Scenic Rivers. Project facilities are excluded from these management areas.

Hydroelectric development will be made inconspicuous in locations where the Forest's visual quality objective is retention or partial retention of the natural landscape. Road access associated with hydroelectric projects will be restricted where the recreation opportunity spectrum (ROS) class objective for the land is primitive, semiprimitive nonmotorized, and semiprimitive motorized.

Elsewhere in the Forest, the Plan generally treats hydroelectric development as being compatible with management area standards and guidelines. Chapter 3 of the FEIS addresses the environmental impacts on hydroelectric projects. Site-specific environmental analyses and documentation of effects for proposed hydro projects will be completed before the Forest Service submits its 4(e) report to the FERC. All impacts will be fully disclosed and mitigated to the greatest degree possible. Each new project is also required to follow the NEPA process that allows the public to participate in the project decision.

Loss of productive land base or reduction of resource values will therefore be mitigated under terms of FERC Licenses, Forest Service Special Use Permits, and any Memorandums of Agreement executed between the Eldorado and the project proponent.

Numerous major and minor hydroelectric projects are already under construction or firmly proposed for Forest lands. The Forest Service has or will take a leadership position in the environmental analysis of these projects to determine their environmental, social, and economic effects. Several known projects will be active during the 10-year plan period.

El Dorado County has proposed the South Fork of the American River (SOFAR) project in the coming decade. Amador, El Dorado, Sacramento, and San Joaquin Counties are sponsoring the Cosumnes River Water and Power Authority to determine the feasibility of a hydroelectric project on the Cosumnes River system. The Cosumnes River project is in the preliminary licensing stage. Amador County has proposed the Devil's Nose project on the Mokelumne River. Devil's Nose is also in the preliminary licensing stage. Willow Creek Water District is investigating a project on Cole Creek.

The combined annual energy output of these four major hydroelectric projects is about 123 megawatts. Sixteen minor hydroelectric projects affecting the Eldorado have been filed with FERC. These minor developments are scattered throughout the Forest and call for a combined annual energy output of about 13 megawatts.

Wind energy has been treated only for its future potential. No actual proposals have been made for the Eldorado. The Forest has pinpointed those stringers of land that have the highest development potential. Feasible proposals will be considered for these inventoried high elevation sites when they do not overlap wilderness or other statutory or regulatory exclusion areas.

The Forest's engineering staff will develop and carry out a plan to retrofit government buildings and facilities to make them energy efficient. This conversion will be accomplished by the end of the 10-year plan period. Economy in the automobile fleet will be accomplished by routine replacement with the most fuel-efficient equipment for the job, plus better utilization of fewer total vehicles.

## B. Mining

### 1. Issue Statement

While encouraging mineral exploration and development, what management practices are needed on the Eldorado to reduce environmental impacts and conflicts associated with minerals development?

### 2. Issue Summary

A Forest minerals inventory describes the mineral resource potential of the Eldorado. Mineral activities fall into three classes: (1) leaseable, (2) locatable, and (3) mineral materials. Leasable and locatable areas are rated low/unknown, medium, and high/very high. Mineral materials are inventoried by individual site name and type of materials found at the source.

Oil, gas, coal, and geothermal are leasable minerals. None of these types are now under lease. Oil, gas, and coal deposits are unknown. An unexplored geothermal belt enters the Eldorado from the Toiyabe National Forest south of Carson Pass. No other geothermal sources have been identified to date. Leasable mineral resources are insignificant.

Locatable minerals are prevalent. Claims and prospects dot the Forest landscape. Gold, silver, and other precious metals have historically been mined since the Gold Rush. Economic trends indicate that many existing claims will continue to operate, and new claims will be filed. Open pit mining of lode claims causes the greatest environmental concern. Placer claims with suction dredging activities potentially impact water quality, fish and wildlife habitat, and stream aesthetics.

Mineral materials activity has primarily involved quarrying for road surfacing material. The Forest inventory shows thirty-eight available rock sites. Visual quality protection is the main environmental concern associated with mineral materials.

### 3. Issue Resolution

Forest managers will promote the development of mineral resources by cooperating with lessees, claimants, and permittees. Mining laws, regulations, and Forest Service Manual policy will guide management of the mineral resource. The Forest, in turn, will recommend land withdrawals from lease or entry when existing laws and regulations do not give adequate protection to sensitive environmental features of the Forest or where capital investments need to be protected. Mineral materials activities are controlled by the conditions of special use permits issued by the Forest Service to authorize removal of those materials.

Designated wilderness is withdrawn from mineral lease and entry, subject to rights established prior to enactment by Congress. Desolation and Mokelumne Wildernesses account for 102,059 acres of legislatively withdrawn land. The Plan recommends an additional 13,694 acres for wilderness (Caples).

Wild and Scenic Rivers are also designated by Congress. The Plan recommends the North Fork of the Mokelumne above Salt Springs Reservoir for wild river designation and the Rubicon River for scenic river designation. The candidate Mokelumne River is entirely within the existing Mokelumne Wilderness. Dual designation of the North Fork of Mokelumne Wild River with Mokelumne Wilderness will not further impact the availability of the mineral resource because the area has already been withdrawn. A suitability study for Wild and Scenic River status is proposed for the North Fork of the Mokelumne below Salt Springs Reservoir to Tiger Creek.

The Plan recommends the establishment of two Research Natural Areas and nine botanical, geological, and archaeological Special Interest Areas. Establishment of these kinds of areas is approved within the Forest Service agency authority, but withdrawal of these lands must be granted by petition to the Secretary of Interior. Peavine and Station Creek Research Natural Areas add 1,862 acres of prospective withdrawal. Big Crater, Little Crater, Wrights Lake Bog, Rock Creek, Traverse Creek, Round Top, Leonardi Falls, Pyramid Creek, and Mokelumne Archeological Special Interest Areas add another 20,623 acres of prospective withdrawal. Two RNAs are proposed for study (Snow Canyon and Middle Mountain).

Capital investment projects are routinely withdrawn from entry. Power projects, major recreation areas, and Forest Service administrative sites are the most common investment types of withdrawals. Project proponents request power withdrawals. The Secretary of Interior concurrently grants a request when the Federal Energy Regulatory Commission licenses a project. Existing power withdrawals encumber thousands of acres of Eldorado land. Major power withdrawal requests which may to be granted during the plan period are for the South Fork of the American River (SOFAR), Devils' Nose, Cosumnes River, and Cole Creek projects.

The Forest Service requests recreation and administrative site withdrawals. Recreation withdrawals include private sector sites under special use permit such as ski areas, recreation residences, resorts, and organization camps. Current national policy states that requests of this kind be made only when mineral activities might reasonably be expected to cause loss of capital investments. Eldorado managers will adhere to this policy, and requests of this nature will be limited. Some current withdrawals may be dropped.

The balance of the Forest that is not covered by the above-described areas will stay open to entry. Written plans of operations provide resource and environmental protection. District Rangers and minerals developers negotiate the terms of the plans of operations under federal regulation requirements. The two parties jointly agree to mitigation or rehabilitation work.

Plans of operations spell out specific site treatment measures on an individual case basis. The Forest Service requires reclamation bonds to be posted by the minerals developer to assure reclamation within the terms of the plans of operations. Actual treatment varies by the extent to which the environment is disturbed and which standards and guidelines in the Forest Plan apply to the management area where the lease or claim is located. Management area direction that emphasizes wildlife habitat protection, high visual quality, high water quality, and unroaded landscapes will result in the highest degree of mitigation or rehabilitation.

In summary, the Plan recognizes that certain congressional and administrative withdrawals impact the availability of the minerals resource. Eldorado managers will keep administrative withdrawals at a minimum, while at the same time promoting the minerals development of non-withdrawn lands. Individual plans of operations establish resource and environmental protection and avoid conflicts for active operations that significantly affect the Forest. Mineral materials development is controlled by the conditions of special use permits.

## C. Outdoor Recreation

### 1. Issue Statement

What kinds and amounts of recreation opportunities should be emphasized and where should they be made available on the Eldorado?

### 2. Issue Summary

The Eldorado already provides the public a wide range of recreation opportunities. Natural attractions, closeness to large population centers, and a well-developed internal road system produce heavy use in several types of recreation activities. Annual use in the last 5 years has averaged more than 3,000,000 recreation visitor days.

Driving for pleasure registers the highest visitor numbers. Family camping, winter sports, and recreation residence use are popular developed recreation choices. Hunting, fishing, hiking, cross-country skiing, snow play, recreation vehicle travel, boating, and undeveloped site camping are familiar dispersed forms of recreation.

Not all recreation activities are compatible with each other, nor are they compatible with other resource activities. Overcrowding in developed sites and dispersed areas often impairs visitor experience. Conflicting uses become distracting.

The Forest land base is ample enough to meet therotical recreation demand over both the 10-year plan period and the 50-year long-term planning horizon. However, visitors have established set patterns of use and want to return to their longtime favorite spots. Competition for the same ground by divergent interests results in conflict, which must be resolved on-site, even though the land capacity to accommodate these recreation uses exists elsewhere in the Forest.

Reservation and fee systems apply to several high amenity developed sites. The using public generally is willing to pay for special services. The Eldorado has begun to contract facility operation and maintenance to private concessionaires on a selected basis, resulting in favorable public acceptance.

## 3. Issue Resolution

*Recreation use outside of wilderness is classified as either* developed or dispersed. Each class needs to be handled separately when dealing with issues.

Although the mix of public, semi-public, and private uses may change, the land base represented by existing and potential recreation sites *(listed in Chapter IV, red pages), is expected to meet future demands* on the Forest. Recreation planners will survey the Forest for additional suitable ground.

Some sites will be triggered by demand in the first decade of the Plan. These sites will accommodate induced use associated with hydroelectric projects. Developed recreation facilities are required under the terms of the FERC licenses to provide for recreation use related to project features such as reservoirs. Actual construction will be prompted by reaching peak use levels within project areas. Additional recreation facilities will be built by licensees at Crystal Basin and Silver Lake -- and potentially at Blue Lakes, Lower Bear River Reservoir, and Salt Springs Reservoir. Initial installation of recreation facilities may take place at Alder Reservoir, which may be developed under the El Dorado County SOFAR project. Kinds of facilities include boating sites, family campgrounds, group campgrounds, equestrian group campgrounds, sanitation stations, and interpretive sites.

A Forest Plan objective for the Eldorado is to furnish a standard level of maintenance to all sites that it operates and maintains. Concessionaires and licensees must also furnish a standard level of maintenance on sites they operate. A trend toward more concessionaire management of facilities is expected. Worn sites will be scheduled for rehabilitation or put in a rest-recovery status.

The Plan offers 4,017 acres of potential downhill ski sites for additional development by permittee. Special use permits are issued for recreation residences, organization camps, and resorts. A draft Future Recreation Use Determination Study (FRUD) *for special uses*

along Highway 88 was prepared and made available for review by the public in early 1987. Future use options considered were: (1) continuance of permits as currently authorized (status quo); (2) conversion of lands under permit to private status through a land adjustment process (disposal); or (3) termination of existing permits to accommodate a demonstrated higher public need (recovery). The study was temporarily withdrawn from public review because its comment period coincided with the comment period for the Chief's proposed new policy on recreation residences. These two important issues, overlapping as they did, resulted in some confusion among the permittees, and to separate the issues the Draft Environmental Statement was withdrawn in April 1987. Information obtained during preparation of the FRUD and through public scoping indicated that there is a firm basis for believing there may be a future higher public need in the Highway 88 area and elsewhere on the Forest. Therefore, the future needs of special use sites will be analyzed and considered before renewing the authorization for new terms, as directed by National Policy outlined in FSM 2721.23e.

The Eldorado has a high capacity for dealing with dispersed recreation needs. The potential to increase projected demand goes beyond the five decade horizon of the Plan. However, this long-term capacity relates to total recreation visitor days, not the types and intensities of dispersed use. Managers will rely on the Forest Service Recreation Opportunity Spectrum (ROS) system to establish priorities for the kinds of dispersed activities that can take place in a given Forest location. Standards and guidelines serve to make dispersed recreation use compatible with the desired ROS for each management area and reduce conflicts with other competing activities.

The approach to dispersed recreation taken by the Plan allows use to increase with demand, manages that use to provide a variety of non-conflicting activities, and makes land or facility commitments to enhance the Forest program.

Implementation of a new Forest ORV Plan, in 1990, will result in ORV use being restricted, almost exclusively, to a designated roads and trails system. Acres open for ORV's, other than trails, will be significantly reduced. Extensive trail construction and reconstruction is proposed. Enactment of the California Wilderness Act of 1984 and recommendation of the Caples Creek area for wilderness result in closure of some existing four-wheel drive roads and motorcycle trails. More ORV mileage will be reduced in nonwilderness parts of the Forest to conform to the resource emphasis of certain management areas. The Forest Plan offers sufficient opportunity to replace these miles with new roads and trails, but it cannot substitute the unique experiences associated with the original routes. This change might therefore be considered a loss by affected individuals and clubs.

Equestrian and cross-country skier needs are best met by high country zoning in the Plan. The Plan will give emphasis to the development of new trailhead facilities for both of these user groups. Standards and guidelines minimize conflicts between motorized and nonmotorized dispersed recreation, although both types may share common facilities in some cases.

Management emphasis in the Eldorado general forest zone is placed mainly on intensive resource activities such as timber harvesting, grazing, and minerals development. Dispersed recreation is designed to blend in with these intensive activities rather than take priority over them. However, viewsheds along heavily traveled roads, major rivers and reservoirs, and areas of concentrated public use are protected by a visual resource management system. Direction applied to these viewsheds limits the amount of landscape alteration in foreground and middleground view areas.

The Plan provides for new short loop hiking and riding trails in the general forest zone. These trails will typify and provide for public interpretation of management area activities in their vicinity.

## D. Timber

### 1. Issue Statement

How intensive and widespread should timber management activities be on the Eldorado?

### 2. Issue Summary

The Eldorado timber resource has previously been managed under the 1978 Timber Management Plan. The Forest Plan supersedes the Timber Management Plan. The former plan directed a scheduled annual sell volume of 138.3 million board feet of wood to be harvested from 292,000 acres of suitable timber land. An additional target called for recovery of 5.0 million board feet of sanitation-salvage and administrative sale volume annually. The National Forest Management Act requires the Eldorado to make a new assessment of timber land suitability and calculate an annual timber program quantity based on the management objectives of the Plan.

The Eldorado timber program has been relatively stable over the last 15 years. Sales offered by the Forest are consistently bought at bid prices above appraised value. Few sales have been passed over by prospective buyers in the lumber market. The Eldorado continually meets targeted sell volumes, and this wood supply source has played an important part in providing income and employment to nearby communities.

Residents of the local communities have historically accepted timber harvest activities and their accompanying economic and employment benefits. However, demand for nontimber resources has grown steadily over the same 15-year period. The social composition of an expanding local population has changed from one that was once market oriented to one that is now much more amenity oriented. Timber harvest is competing with recreation, wilderness, wildlife, and visual resources on a much broader scale.

The timber issue now centers around the potential effects of intensive harvest methods on the environment and nontimber values. The public is interested in what cutting practices are employed by the Forest, the number and location of acres logged, and the volumes removed under the timber program. Economic effectiveness of timber management has become a major management consideration.

## 3. Issue Resolution

The Forest Plan identifies 307,615 acres of suitable timber land. These suitable acres represent the productive land base that will be managed on a harvest schedule to maintain an annual Allowable Sale Quantity (ASQ). Both evenaged and unevenaged silvicultural systems are applied to this suitable timber land base.

Scheduled timber harvest is practiced in the general forest, wildlife, and streamside management zones. Cutting in the streamside management zone is modified to protect wildlife-dependent vegetation and preserve high water quality. Wildlife zones have management area standards and guidelines that perpetually provide timber stand conditions to manage spotted owl and goshawk habitat.

Unscheduled timber harvest is practiced in portions of the general forest, high country, developed, and dedicated zones. Cutting practices are restricted to sanitation-salvage, hazard tree removal, and other methods that either meet administrative needs or enhance multiple use resource values. Trees are normally removed on an individual selection basis except when salvaging large burns and insect or disease epidemics. Timber activities in wilderness are covered by Interim Directive No. 29 (May 10, 1985) of the Forest Service Manual.

The Plan directs a general strategy to perform the most intensive timber management practices on the most productive (highest) timber sites. Managers apply evenaged silviculture to high sites of Forest Survey Class 5 or better. All silvicultural systems are available on high site, but primarily clearcutting and shelterwood systems will be utilized. The Plan sets a maximum size of clearcut openings at 40 acres. Dispersion rules allow only a 15 percent overlap between harvest units until regenerated stands reach a height of 4.5 feet. Short rotations of 50-90 years are scheduled for the most intensively managed stands. This pattern will produce an evenaged mosaic that has less overall tree diversity throughout the general

forest zone. Reforestation of harvested stands constitutes a large future investment in timber and makes related fire protection a critical companion factor in meeting long-term outputs.

Managers will practice less intensive activities on low site suitable timber lands. The Plan prescribes typically unevenaged silviculture to low site stands. Individual tree selection or small group selection (less than 5 acres) are the most common harvest methods used in this case. Where low site stands are intermingled with high site stands, the trees may be clearcut incidental to the harvest of adjacent high site stands provided they can be regenerated within 5 years. The Plan directs longer rotations to low sites.

Cutting in the general forest zone is also controlled by visual quality objectives. The plan specifically names Highway 50 and Highway 88 as scenic corridors. Viewsheds surrounding other well-traveled roads or populated areas must meet visual quality management objectives. The Plan requires retention or partial retention of foreground and middleground areas seen from roads, trails, rivers, reservoirs and densely developed recreation sites. Unseen areas and background areas have a Visual Quality Objective of modification or maximum modification.

The Forest Plan, with its associated management requirements and land assignments, establishes a new first decade ASQ of 137.2 million board feet per year. The Forest Plan also estimates an unscheduled output of 9.3 million board feet per year. The new total timber sale program quantity is 146.5 million board feet annually. This resource production target essentially keeps an even flow of timber coming from the Eldorado while simultaneously being responsive to environmental issues and other nontimber Forest resources.

# E. Lands

## 1. Issue Statement

How should the Forest Service deal with the impact of intermingled and adjacent private land where it affects the public use of the Eldorado?

## 2. Issue Summary

The Forest has a complicated landownership pattern. The gross area is 786,994 acres, which includes 190,270 acres of other than National Forest ownership inside the administrative boundary. Intermingled parcels are mostly isolated and enclosed on all sides by government land. An opposite situation occurs outside the administrative boundary. Several small pieces of National Forest land are separated from the main body of the Eldorado and are surrounded by private property. The Forest boundary forms many miles of common line between National Forest and private ownership.

When local communities were part of a sparsely populated rural society, the Eldorado and neighboring land interests were mostly compatible and shared a certain interdependence. This rural society gradually urbanized, and its agricultural character gave way. Contrasting land philosophies appeared, and conflicts emerged, affecting the abilities of either private parties or government managers to use and develop their lands as they might prefer. Consequently, the mixed ownership pattern has caused concern for the Forest Service, state and local governments, Forest visitors, and affected private landowners.

## 3. Issue Resolution

Intermingled ownership conflicts are apt to increase during the Plan decade. One solution for consolidating interior government landownership and disposing of unmanageable parcels is a vigorous land adjustment program. Adjustment can be accomplished by purchases, exchanges, and donations. The plan lists Eldorado National Forest lands available for disposal. The list was excerpted from the Eldorado National Forest Landownership Adjustment Plan and appears in Appendix D. Land available for disposal adds up to 4,270 acres. The plan also projects a first decade average target of 159 acres to be acquired annually by the Forest. The land and market resource values of the inventoried disposal parcels furnishes comparable worth for exchange purposes.

Coordinated land management planning with local counties is another means of avoiding ownership conflicts. The Eldorado and the four counties whose boundaries partially overlap the Forest must identify common goals and objectives. The lands issue may also be resolved where private ownership reverts to entities who share a like need to meet National Forest management goals. The California Department of Fish and Game, for example, has investigated and completed land purchases to preserve winter deer range or protect wild trout streams like the Rubicon River.

Trespass is a lands related problem. Most trespass cases involve innocent encroachment onto National Forest land because common property lines between government and other ownership have not been surveyed and posted. Reduction and eventual elimination of backlog miles lower future trespass potential and aid the Eldorado and its neighbors in managing land adjacent to ownership lines.

The Plan aims at consolidating interior ownership and establishing future land patterns, which facilitate long-term management of the Forest. Prime candidate lands for acquisition are parcels with high recreation values, desirable wildlife habitat such as critical deer winter range, and private holdings inside wilderness. A continued active land line location program will reduce problems where intermingled and adjacent ownership stays in its current status.

Tax revenues from lands gained or lost to the Eldorado are a related part of the lands issue. Net loss of private ownership by government acquisition reduces the counties' property tax base. Boards of Supervisors usually acknowledge the resources benefits of a forest land adjustment program but are watchful for economic loss to road and school budgets.

## F. Fish and Wildlife

### 1. Issue Statement

What kinds and amounts of fish, wildlife, and plant habitat should be provided/protected on the Eldorado?

### 2. Issue Summary

The Forest provides habitat for 340 species of animal life. The total includes 202 birds, 79 mammals, 20 fish, 24 reptiles, and 15 amphibians. Past public interest was primarily concerned with harvest species such as deer, quail, cottontail rabbit, gray squirrel, bear, and trout. Today aesthetic wildlife values involving maintenance and enhancement of all species are becoming increasingly important to people. The Endangered Species Act, as well as other federal and state laws, express these changing public attitudes. Intensive resource activities can affect viable wildlife populations and the habitats on which they depend.

### 3. Issue Resolution

The Plan sets a mandatory priority of achieving legal requirements for threatened and endangered species of wildlife, fish and plants. Consultation has been requested of the U.S. Fish and Wildlife Service regarding the effects of Plan implementation upon threatened or endangered species. The U.S. Fish and Wildlife Service has declined formal consultation at the Forest Plan level and has requested that required consultation be initiated at the project level(letter dated 8/17/84). The Eldorado provides suitable habitat for two endangered species: bald eagle and peregrine falcon. Bald eagles spend the winter and one pair has been nesting on the Forest for the past two years. Peregrine falcons have also been sighted in 1986 and 1987. Forest biologists will manage bald eagle and peregrine falcon habitats according to the Federal Species Recovery Plans.

The Forest provides habitat for seven sensitive wildlife species: Sierra Nevada red fox, pine marten, fisher, spotted owl, great gray owl, goshawk, and willow flycatcher. The Plan designates individual management areas for spotted owls and goshawks because of potential impacts on their habitats by other resource activities. Wildlife management areas are distributed throughout the forest in networks of interconnecting habitat areas containing mature stands of timber. The spotted owl has 60,800 acres, 21,200 of which provide for timber harvest activities, and the goshawk has 2,550 acres in

these management areas. Great gray owls have been heard but not confirmed. No special management prescriptions are developed for the remaining sensitive species because Forest-wide standards and guidelines direct their habitat protection requirements.

The Forest has selected 10 vertebrates and/or invertebrates to serve as management indicator species. These indicator species represent the vegetative types, seral stages, and special habitat elements for the variety of wildlife species living on the Forest. Population changes in indicator species show the effects of management activities on other fish and wildlife populations. Biologists will monitor indicator species to measure and protect the vitality of the Forest-wide fish and wildlife populations.

Critical deer habitat information has been entered in the Eldorado resource data base. The habitat information was reviewed and validated by the California Department of Fish and Game. Project designers refer to the data base when they prepare environmental analyses of the effects of proposed Forest actions in order to avoid or mitigate effects on deer summer range, winter range, fawning areas, and migration corridors.

Jointly approved deer herd plans further allow the Forest Service and Fish and Game to provide expert habitat and species management to Eldorado deer populations. The Salt Springs, Grizzly Flat, Pacific, and Blue Canyon Deer Herd Plans supplement the Forest Plan with detailed wildlife management direction. The two agencies will jointly work to acquire private parcels of critical deer winter range. Acquisition under Forest Service authority will conform to the land adjustment objectives stated under the lands issue and stay consistent with the Department's deer herd plans.

Hydroelectric development is the most likely Eldorado activity to affect fisheries in the next 10 years. One objective of the Forest Plan is to maintain in-stream flows in affected river systems to keep Eldorado trout populations at current or increased levels. Hydroelectric development that has impoundment potential will involve the exchange of stream habitat for lake fisheries. However, hydroelectric project mitigation sometimes may involve exchanging cold water stream habitat for lake fisheries. The Forest intends to improve nine acres of resident fish habitat per year during the decade of the Plan. This planned improvement work, coupled with desirable streamflow releases, can help to offset any loss of cold water fish production resulting from hydroelectric development.

Sensitive plant species and potential sensitive plant habitats are managed to ensure that species do not become threatened or endangered because of Forest Service actions. Inventoried plant locations are recorded in the resource data base but omitted from public map display to protect them. Forest managers and project designers have access to this plant information in order to check locations against project boundaries. Sensitive plant disturbance is thereby avoided.

Implementation of the Forest Plan will produce a sufficiently diverse habitat to support viable populations of early, mid and late successional wildlife species. Threatened and endangered species will be managed according to recovery plans. The Plan gives special protection to spotted owl and goshawk by designating suitable habitat for these species in a network of habitat areas that provide for a distribution of interacting reproductive individuals.

Projected development of hydroelectric projects will reduce miles of cold water stream fisheries -- or lower the quality of trout habitat by decreasing in-stream flows of impacted river systems. Mitigation, consisting of suitable streamflow releases and habitat improvements, can replace or even increase the total pounds of fish available. Fish production may be transferred to two story (coldwater/warmwater) reservoir environments built by the licnesees. Hydroelectric development will create a related shift in the type of fishing experience found in the Eldorado.

Sensitive plants are protected as if they are threatened and endangered species.

## G. Fire

### 1. Issue Statement

To what extent should fire be managed as a way for the Eldorado to reduce its hazardous fuels backlog and enhance resource values?

### 2. Issue Summary

The Eldorado, like other National Forests, has strongly promoted fire prevention. Forest Service fire management policy states an objective to suppress wildfires at a minimum cost consistent with fire management direction and land and resources management objectives. Initial fire action is preplanned and designed to provide the most reasonable probability of minimizing the sum of suppression **costs** plus **net value change** (C + NVC) for resource damage. On escaped fires, responsible line officers promptly organize and implement an appropriate attack based on an escaped fire situation analysis (EFSA) when the fire will continue into the following day's burning period. Confine, contain or control strategies will be considered where appropriate.

In effect, the national program emphasis on fire prevention and the rapid suppression of fires have caused a buildup of natural fuels on the Eldorado. Forest Service land management practices such as timber harvesting have created an activity fuels buildup. The result of these actions is that live and dead fuel will accumulate during the plan decade. Some form of fuel treatment is needed to assure the continued flow of outputs stated in the Plan.

The public has expressed an interest in the disruption of the natural fuel cycle on the Eldorado -- and how breaking that natural cycle may affect the forest environment. On one hand, people show a serious concern for threat to life and property by wildfire and for air pollution from the smoke. On the other hand, the public recognizes a need to sustain the production of goods and services derived from the Forest, backed by an effective, cost-efficient fire management program.

## 3. Issue Resolution

The Plan addresses the fire issue in two ways: (1) by prescribing direction to individual management areas of the Forest, and (2) establishing a fire attack and fuels treatment program designed to assure targeted resource outputs.

The first method lists sets of standards and guidelines for fire practices. The practices cover prevention, detection, suppression, activity fuels management, natural fuels management, and prescriptive fire management. The purpose of the direction is to meet tolerable fire loss objectives. The Initial Attack Assessment (IAA) computer model performs the fire analysis by projecting acres burned at average fire intensity levels for the fuels inside the management areas.

Another form of fire analysis merges the IAA data mentioned above with FORPLAN. FORPLAN computes outputs, acres, and dollars for plan alternatives based on the management theme or objective function of that alternative. The connection between IAA and FORPLAN assures that burned acre limits are consistent with expected outputs -- and the cost of the fire program is not greater than the net value change of the resources protected.

Fire programs may invest dollars in fire attack or fuels treatment to produce the most cost effective approach to fire management. The current (1982) fire program is used as a base index for further analysis. The current program has an established mix of employees, fire equipment, fire facilities, attack, and fuels treatment funding. Alternative fire programs vary plus or minus from the base index. The mix can be weighted toward attack, fuels, or current emphasis.

The Plan proposes a current plus 20 percent fire program. The forest will increase the fire budget by 20 percent and stress initial attack more than fuels treatment to achieve tolerable burned acre limits that meet scheduled outputs of goods and services. The hazardous fuels reduction part of this program calls for annual treatment of 7,100 acres of activity and natural fuels. The expected acres burned by wildfire annually is 727 acres.

# H. Transportation System

## 1. Issue Statement

What types and standards of roads and trails should be built; what levels of maintenance are necessary; what construction methods and location practices should be used; and what regulatory policies should be adopted for all motorized travel, including recreation vehicles, on the Eldorado?

## 2. Issue Summary

Within the Forest, the Forest Service maintains 2,158 miles of road. Counties maintain 209 miles under their local jurisdiction. Private landowners separately operate on 400 miles of road inside the Forest boundary. The public road system, exclusive of state highways, consists of 14 percent paved, 28 percent gravel, and 58 percent native surfaces.

The Eldorado's past road program emphasis has been to complete the undeveloped part of the Forest Development Transportation System Plan and concurrently upgrade existing substandard roads. The Forest's intent is to basically meet current resource and administrative transportation needs. This active program has raised public interest about the number of miles of road built and individual construction standards applied to them. Several issue respondents felt the forest was building too many roads at too high a standard. Another segment of the public observed that the Forest places too many travel restrictions on public roads. Locked gates and seasonal road closures were stated as problems.

The Forest also contains an extensive trail system. Forest trails are divided into two categories: motorized and nonmotorized. Motorized trails have a tread of less than 40 inches, which by design makes them suitable for two-wheel trail cycle use only. Motorized trails are not available for three- and four-wheel drive travel. Trails of special interest are the Pacific Crest Trail, the Emigrant Summit National Recreation Trail, and the Pony Express National Recreation Trail. The Rubicon Springs four-wheel drive road has been nominated for National Recreation Trail status. The Emigrant Summit Trail is being considered for the National Historic Trail System. The Eldorado currently maintains 75 miles of motorized trails and 274 miles of nonmotorized trails.

Recreationists are constantly seeking additional trail miles and trailhead facilities for hiking, backpacking, horseback riding, cycling, over-snow vehicle travel and cross-country skiing. The public is also concerned about actual and potential conflicts created by multi-use of many of these Forest trails.

## 3. Issue Resolution

The Forest road system is largely built to planned levels. New construction and reconstruction of roads directed by the Forest Plan will, for the most part, tie to the Eldorado timber program.

The Forest builds three types of roads: (1) arterial, (2) collector, and (3) local. Arterials are high standard roads that are normally paved and double-laned. The arterial system, with 312 existing miles, is 95 percent complete. 25 to 30 percent of arterials are currently substandard and need some reconstruction. Existing collector roads cover 304 miles. The collector system is 90 percent complete. Collector roads funnel traffic from local project roads to the arterials. They are medium standard single-lane roads with aggregate base and often have chip-sealed surfaces. Approximately 50 percent of the existing collectors are substandard and need reconstruction.

Local roads generally have the lowest construction standards. They are project roads built within timber sale compartments to reach unaccessed timber stands. Locals are often dead end roads that are maintained for the life of the project -- then closed until they are needed for future projects. Extension of the local system is directly related to implementation of the forest plan. Existing locals cover 1,751 miles.

In summary, new arterials and collectors become essentially 100 percent completed during the plan decade. Substandard roads will be reconstructed to standard. There will be a noticeable decrease in construction of these two types of roads in the remaining four decades of the long-term planning horizon. Local roads will continue to be built on an individual project basis until the miles per acre density of this type of road serve the total Forest transportation need. The Forest Plan projects construction of 44.0 miles and reconstruction of 62.6 miles of roads annually for the next 10 years.

The Eldorado performs five levels of road maintenance on its transportation system. These maintenance levels are transformed to Forest wide standards and guidelines in Chapter IV of the Plan. Level I and Level II maintenance is applied to 1,528 miles of low standard local roads. Level III and Level IV maintenance is applied to 554 miles of combined local and collector roads, consisting of higher standard native surfaces and aggregate base surfaces with chip seals. Level V, the highest standard, is applied to 76 miles of arterial double-laned asphalt concrete roads. The construction program developed under the Plan will add the 440 miles to maintenance by the end of the first decade.

Eldorado engineers will design mainly for conventional construction practices in developing the Forest transportation system. Special design features may be employed on visually or environmentally

sensitive areas, based on individual project environmental assessments. Engineers will locate roads where they cause the least impact on the land and still serve resource management objectives.

Visual quality objectives will be achieved along sensitive roads by applying standards and guidelines for retention and partial retention of foreground and middleground view areas. Helicopter log transport may be used in lieu of roads where construction costs are excessive or the environment might be adversely impacted.

Building new roads into previously unroaded areas also concerns the public. The decision to build roads strongly ties to the emphasis given to each management area. Management areas assigned to primitive and semiprimitive nonmotorized high country emphasis have prescriptions that generally prohibit road building. Management areas assigned to semiprimitive motorized high country emphasis have prescriptions that usually allow only temporary low-standard local or permanent four-wheel drive roads. Temporary roads are built in semiprimitive motorized high country to serve one-time needs such as insect salvage or fire suppression. These temporary roads are then obliterated, and the land is returned to a natural condition. In total, 44,683 acres of high country management area remain essentially unroaded by implementing the Plan.

Management areas that are assigned to Research Natural Areas and Archaeological, Geological, and Botanical Special Interest Areas also have direction that limits or excludes road building. These include two research natural areas outside of wilderness and nine special interest areas containing 22,485 acres of the forest.

Two wildlife management area prescriptions affect road building. Direction applied to the nest stand areas for goshawks and core nesting areas for spotted owls restricts road building while these sites are occupied by nesting birds. However, these nesting cores are rotated with replacement habitat over a span of time and can eventually be roaded in future decades.

The remaining parts of the Forest that have no physical investments or developments -- and are situated outside specially designated management areas -- are open to more intensive kinds of multiple use management activities. The Plan directs that permanent roads can be built in any of these remaining management areas, even though some of them are presently roadless.

The California Wilderness Act of 1984 affects four-wheel drive roads and motorized trails. Designation of the Mokelume Wilderness addition legislatively removed 5.7 miles of four-wheel drive road and 9.8 miles of motorized cycle trails from the Forest transportation system. Designation of the proposed Caples Creek Wilderness will also reduce miles of motorized trail. The Forest offers sufficient opportunity to replace the reduced miles but not necessarily the original experience.

# I. Range

## 1. Issue Statement

How should the range on the Eldorado be utilized to meet the needs of livestock grazing, wildlife forage, and other related resource needs and values?

## 2. Issue Summary

The grazing resource consists of 111,059 acres of suitable range that is divided into 22 individual cattle allotments. Range Allotment Plans supplement the Forest Plan and give detailed grazing direction to Forest Service managers and allotment permittees. Irrigation and cultivation are not practiced to grow permanent range.

A transitory range situation makes cattle grazing partially dependent on natural events such as climate, insect and disease activity, and wildlife cycles. Timber harvesting creates additional forage following clearcuttings or other harvests that provide temporary stand openings. Recreation livestock and wildlife utilize the range resource as well as the allotted cattle. No wild and free-roaming horses or burros are found on the Forest.

Public issues about range relate to overgrazing, erosion, meadow degradation, competition for forage with wildlife, and disruption of wilderness solitude by cowbells. The 1982 Base Year index for permitted use is 12,000 animal unit months (AUM's).

## 3. Issue Resolution

The national RPA assessment for livestock grazing forecasts a substantial increase in demand over current use. The Plan proposes to maintain approximately current output levels. Forest grazing outputs will not meet Regional range production targets throughout the plan period.

The Forest will simultaneously carry out a timber harvest program that regenerates 4,300 acres of suitable forest land annually during the plan decade. Evenaged silvicultural systems will be used to a greater extent than in the past, resulting in increased Forest-wide forage (grass, forbs, and brush) availability.

Wide-scale overgrazing has not been a pronounced problem on the Forest, and resource damage has been reduced or eliminated by herding, animal distribution, and fencing. In general, the range condition is improving rather than declining. Each management area where grazing is permitted has standards and guidelines for range maintenance and for structural and nonstructural range improvements that result in an upward condition and trend. Seasons of use are determined by annual range readiness surveys.

Plan direction states that no new allotments will be created in wilderness but livestock operations may continue on allotments established at the time of designation and the permittee agrees to necessary changes. The social impact of cowbells will still occur in allotments that extend to Desolation and Mokelumne Wildernesses.

Plan direction, on the other hand, excludes livestock grazing from the Peavine and Station Creek Research Natural Areas. Allotments that extend to these management areas will have their boundaries adjusted to eliminate overlapping acres and reduce AUM's. Competition with wildlife refers mainly to wet high-mountain meadows where livestock compete with deer in spring and summer for highly nutritious grasses and forbs. Historical overuse by livestock has also contributed to conifer encroachment, loss of forb and grass cover, and riparian damage. Meadows are extremely important fawning habitat. To help reduce these problems, the Eldorado and the California Department of Fish and Game are cooperatively initiating corrective actions. Measures include improvement projects, modification of current allotment management plans, working with permittees to improve competition problems, and giving consideration to wildlife needs in allocation of forage.

# J. Water Quality and Quantity

## 1. Issue Statement

What management practices should be used/modified on the Eldorado to maintain or improve water quality or quantity?

## 2. Issue Summary

The major river systems that originate in the Forest yield an average 1.444 million acre feet of water per year. Some streams flow through as many as four hydroelectric power plants before waters are finally stored for agricultural, domestic, and industrial use outside of the forest. The downstream value of this water averages more than $100.00 per acre foot.

Water yield also plays a major part in public use of the Forest. Popular water related activities include fishing, floating, whitewater rafting, swimming, boating, water sports, and simple aesthetic enjoyment.

Water quality is an equally important aspect of management of the Forest. Intensive resource activities such as timber harvesting, road building, mining, and livestock grazing can increase sedimentation in streams and reduce the capacities of reservoirs. The public wants to maintain the existing high water quality found throughout the Eldorado. Forest practices must keep sediment

production and transport within a tolerable amount that does not cause either short-term or cumulative impacts to that high quality condition. Riparian areas must be protected to maintain wildlife habitat and streamside recreation values, as well as serve downstream needs for domestic water.

## 3. Issue Resolution

The way that Forest lands are managed affects both water quality and water quantity. Implementation of the plan will not degrade existing high water quality. This NFMA requirement quality is handled by three methods in the Plan.

First, all Forest activities are guided by the application of Best Management Practices (BMP) for the prevention of nonpoint pollution impacts. These BMP's are identified in the publication named Water Quality Management for National Forest Lands in California, April 1979, USDA Forest Service, Region Five and Plan Appendix F. Future monitoring of BMP's and cumulative watershed impacts will be employed to assure that high water quality is retained.

Second, the FORPLAN computer model, which simulates timber harvest schedules and other resource activities, limits cumulative watershed disturbance. Maximum watershed disturbance is a discretionary forest management requirement that is based on slope, soil erosion hazard rating, and whether the watersheds are considered a high value fishery or municipal water supply. The allowable disturbance ranges from 15.1 to 24.0 percent at any one time for Forest watersheds. Scheduled outputs are therefore held at a level that does not exceed the threshold at which water quality is diminished.

The third measure establishes a streamside management zone (SMZ). The SMZ always takes in the 100 foot (horizontal distance) riparian strip that borders both sides of all perennial streams and surrounds lake shores, high-mountain meadows, and wetlands. SMZ's widen beyond 100 feet based on stream class, slope, and soil stability. Management activities in the SMZ are directed by a separate set of standards and guidelines than those in the neighboring general forest zone. Shade and ground cover are retained to protect fish and wildlife habitat. The area serves as a filter strip to intercept sediment moving down from disturbed watershed lands above the zone. SMZ management practices are described in Chapter IV, Management Area Number 30. The Forest Plan treats 27,200 acres with an SMZ prescription.

Opportunities to increase water quantity are tied to weather modification, type conversion, snowpack management, and watershed improvement projects. Stationary cloud seeding stations have been in place in the Forest for several years. Stations will continue to operate under permit from the Forest Service to the utilities who own them. Aerial cloud seeding is still in a research stage. The Eldorado participates in the Sierra Cooperative Pilot Program, which conducts aerial seeding research activities.

The Forest Plan offers a snowpack management practice for harvesting red fir timber. Snowpack management is applied in conjunction with high site evenaged management in red fir timber stands. Snowpack cutting patterns (small openings in clusters) are established in the silvicultural prescriptions for timber compartments. Snowpack units increase usable water yield by prolonging the snowmelt period. Watershed improvement projects will be performed on 76 acres per year in the first decade of the Plan. Management efforts to increase water quantity will produce approximately 29,000 acre feet of water per year above the current background yield that occurs naturally.

Water rights concern Forest managers. The Forest Service is a water user. About two-thirds of the Forest's own needs have already been claimed. The remainder of these needs will be obtained under riparian rights, which are senior to appropriated rights licensed by the State of California.

The trend for water rights acquisition shows increased competition between potential users. Flows on the American River system are now almost fully appropriated. Proposed hydroelectric projects for the Mokelumne and Cosumnes river systems, when constructed, will utilize available flows remaining on those major streams. Small hydro project sponsors will appropriate tributary waters. Speculation is that all the water originating on the Eldorado will likely be appropriated by the close of the 10-year plan period.

The Plan also deals with land productivity. Past erosion and siltation have damaged productive Forest acres to a moderate degree. Watershed improvement practices have been incorporated into the Plan to maintain and improve watershed conditions. Many productive timber sites, meadows, and stream channels have been identified that can economically be rehabilitated. The aforementioned Forest target is to treat 76 acres annually to reduce this backlog.

## K. Roadless Areas

### 1. Issue Statement

What should be the future management of roadless areas on the Eldorado?

### 2. Issue Summary

This issue originally applied to ten RARE II roadless areas on the Eldorado. The Salt Springs roadless area and portions of the Raymond Peak and Tragedy-Elephants Back roadless areas have been designated wilderness by the California Wilderness Act of 1984. This Congressional action added 19,494 acres to the Mokelumne Wilderness. The balance of the land in Raymond Peak and

Tragedy-Elephants Back roadless areas, plus six other RARE II roadless areas, is released for multiple use management. Released areas total 58,100 acres, or about 60 percent of the land formerly considered for wilderness in the RARE II decision.

The California Wilderness Act names the Caples Creek roadless area for further planning. Caples Creek, therefore, is the only remaining RARE II roadless area evaluated for its wilderness potential in the Plan. The size of Caples Creek is 17,340 acres.

## 3. Issue Resolution

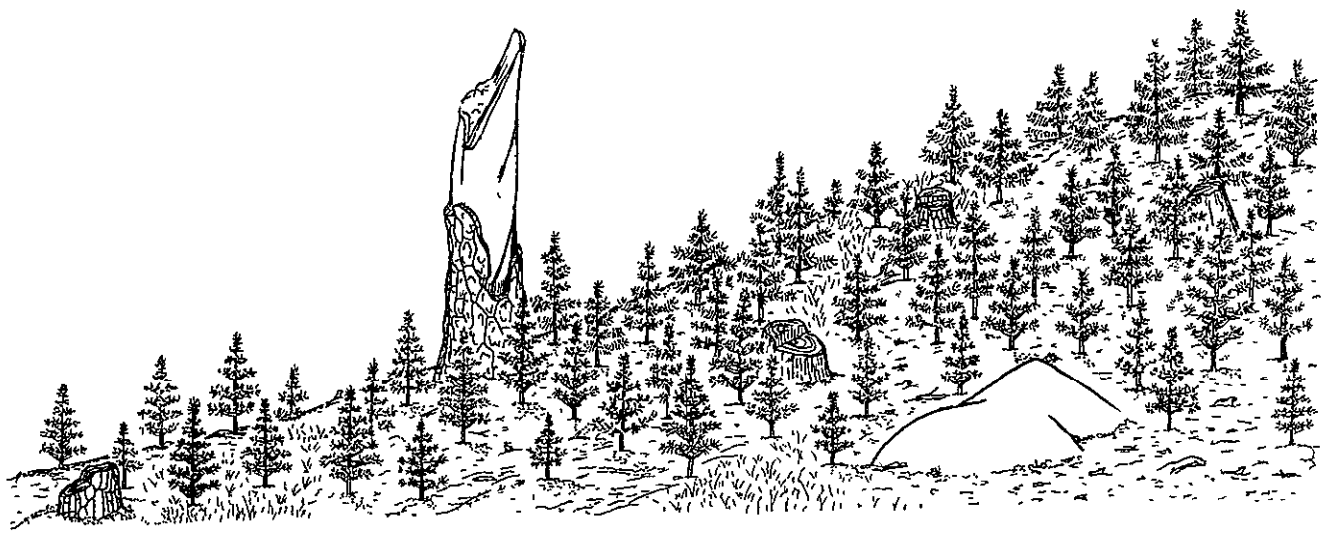
The Forest Plan recommends approximately 13,694 acres of Caples Creek for wilderness designation by Congress. The remaining portion of the roadless area will be released to multiple use management based on the Record of Decision.

A minor hydroelectric facility known as the Foottrail Project has been proposed near the confluence of Caples Creek with the Silver Fork of the American River. If Congress designates Caples as a wilderness, the Forest will recommend to the FERC that the proposal is inconsistent with National Forest purposes; however, the project could still be permitted in the wilderness with Presidential Approval.

Appendix M of the FEIS provides a display of the proposed management in each of the former RARE II Areas.

Chapter III

# Summary of the Analysis of the Management Situation



# III. Summary of the Analysis of the Management Situation

This chapter summarizes the analysis of the Eldorado management situation. It links the existing Forest situation to past, current, and future supply and demand trends for National Forest goods and services.

Subpart A describes the Forest as it is today. That picture includes the social, economic, physical, and biological setting of the Forest. Subpart B depicts the supply/demand trends and production potential for applicable resources. Subpart C addresses resource uses and opportunities.

## A. Existing Situation

### 1. Social and Economic Setting

The social and economic setting of the Forest is organized into two areas of influence. The first area is identified as the **Impact Counties.** These are the four California counties in which the Forest is located: Alpine, Amador, El Dorado, and Placer. The second area is called the **Extended Zone.** The Extended Zone consists of outlying urban regions of California and Nevada that use the Eldorado primarily for recreation. These urban regions are further known as standard metropolitan statistical areas (SMSA's). Each SMSA is an integrated social and economic unit with a large population nucleus. SMSA's that comprise the Eldorado's Extended Zone are:

Modesto
Reno
Sacramento
San Francisco - Oakland
San Jose
Stockton
Vallejo

Social - Social effects flow in two directions. Actions and policies of the Eldorado influence the Impact Counties and the Extended Zone. Residents of both of these two areas, in turn, influence Eldorado activities. They create a visitor demand for its uses and its amenities. As populations in the Impact Counties and Extended Zone grow, these demands on the Forest continue to increase. As the social composition of the people in these areas changes, the Eldorado will concurrently receive pressures for different management direction.

Seven social groups will interact with Forest managers as the Plan is implemented. These groups are (1) developed recreationists, (2) American Indians, (3) newcomers, (4) commuters, (5) timber communities, (6) environmentalists, and (7) local merchants. Persons may belong to more than one group. People in these groups have distinct lifestyles, attitudes, beliefs, and values. These social traits translate to individual thoughts, likes, and fears about how the Forest is managed.

The population of the Impact Counties has grown rapidly in the last decade, especially when compared to the State as a whole. As reflected by the statewide situation, both natural increase and immigration contribute to this population growth. Joining longtime residents of the Impact Counties is a new population composed of retirees, exurbanites, commuters, alternative lifestylers, and a substantial number of second homeowners. Statistically the second homeowners are not recorded in the Impact County populations but may eventually become fulltime residents.

Most of the Impact Counties have a higher proportion of their population over the age of 65 and a lower ratio under 18 than the State as a whole. A higher proportion of seniors also makes up the median age for the Impact Counties compared to the median age for the State.

The Impact Counties have a relatively small minority population when compared to either the State or the nation. Alpine County with a high American Indian population is an exception. The other three Impact Counties are fairly similar in racial and ethnic character. The only significant minority group is Hispanics.

All of the Impact Counties were predominantly rural in 1970, while the State was almost totally urban. In the 1980's, Alpine County is still totally rural; but Amador, El Dorado, and Placer Counties have increased their urban population. However, none of the Impact Counties could be considered predominantly urban when compared to the State.

The Extended Zone is more like the State in its characteristics than the Impact Counties. None of the SMSA's in the Extended Zone have rapid population growth rates equal to those found in the Impact Counties. The Reno, San Francisco-Oakland, Stockton, and Vallejo-Napa SMSA's all have comparable or lower proportions of persons in the under-18 age group than the State. Modesto, Stockton, and San Francisco-Oakland have considerably higher proportions of people over 65 than either the State or the remaining parts of the Extended Zone. These last three SMSA's serve as a large source of retiree immigrants to the Impact counties.

The Extended Zone has a relatively high minority population, except for the Reno SMSA. Minority members are predominantly Hispanic and Black. The Stockton and San Jose SMSA's both have a higher proportion of Hispanics than the State. Hispanics account for 10 to 13

percent of the population throughout the Extended Area. Relatively large proportions of Blacks are found in the Sacramento, San Francisco-Oakland, and Vallejo-Napa SMSA's. The Extended Zone SMSA's ranged from 70 to 98 percent urban in the 1970's. The trend is that the Extended Zone will gain even more urban population in the 1980's. Increasing urbanization is one of the main reasons why people leave the Extended Zone and move to Impact Counties. Urbanization is also a strong reason why people travel to the Eldorado for outdoor recreation opportunities that are not available closer to home.

The major industries in the Impact Counties are government, retail trade, services, and manufacturing. Retail trade and services include employment for tourism and recreation. These two industries also serve the growing population of the Impact Counties. The manufacturing industry, which includes wood products, is significant to total employment only in Amador County. However, in El Dorado and Placer Counties, the wood products industry is important to the local economics of the communities where mills are located or where other job opportunities are limited. Employment in Alpine County is not appreciably affected by the economics of the wood products industry.

Employment that is either seasonal or sensitive to regional and national markets is a problem faced by some of the major industries in the Impact Counties. Jobs vary with the national and state economy in both the wood products and construction industry. These two industries are largely seasonal. Some portions of the services and retail trade industry, such as skiing and government employment, can be seasonal, too. The average annual unemployment rate in the Impact Counties, in most cases, is higher than the average rate in the State. High unemployment may be attributed to the increasing population and the inability to add a correspondingly large number of job opportunities in the Impact Counties. The high unemployment situation is also due to the seasonal nature of jobs in some of the major industries of the Impact Counties.

Per capita incomes are lower in the Impact Counties than in either the Extended Zone or the State. The percent of families below the poverty level in the Impact Counties is comparable to or slightly higher than the State. Although incomes are lower in the Impact Counties than in the State, the percentage of families receiving public assistance from Food Stamps, and aid to Families with Dependent Children, is lower than in the State. However, the number of Social Security recipients is propor- tionately higher in the Impact Counties than in the State, reflecting a higher number of seniors. Crime rates are generally lower in the Impact Counties than in the state, except for Alpine County.

Economic - The Eldorado directly affects the economics of the Impact Counties. The Forest provides revenues to county government through receipts Act payments. The Forest provides employment opportunities

to Impact County residents through Forest Service work and procurement; the recreation opportunities it offers; and utilization of Forest resources such as timber, range, and minerals. The Forest provides recreation opportunities for residents of the Extended Zone. Finally the Forest provides two types of energy resources -- hydroelectricity and wood -- for both the Impact Counties and Extended Zone.

The two Forest resources that most directly affect the Impact Counties are recreation and timber. Recreation is important because of the employment and income it generates for the Impact Counties major industries of retail trade and services. Timber is important because of its contribution to Receipts Act payments and the mill employment it provides in Amador, El Dorado, and Placer Counties.

The Eldorado, the Impact Counties, and the Extended Zone are interrelated in their affects on one another. The Forest attracts people from the Extended Zone because of its recreation opportunities. Collections made by the Forest for recreation use contribute to Receipts Act payments received by the Impact Counties. Recreation use indirectly contributes to the Impact Counties growing reliance on tourism as an industry. Another example of the direct effects of Forest resources on the Impact Counties is the dependence of local mills for timber. Eldorado timber products substantially contribute to Receipts Act payments, provide local employment, and are marketed throughout the State.

Commodity versus noncommodity uses of the Forest have caused increasing scrutiny of Eldorado policies. The local communities that depend on timber for employment, as well as Impact County governments that partly rely on Receipts Act payments for school and road budgets, have tended to sustain or increase their demand for commodity uses. On the other hand, some residents of the Impact Counties who view the Forest with a strong environmental ethic choose to lobby the Eldorado to reduce commodity uses.

## 2. Physical and Biological Setting

The Forest ranges in elevation from less than 1,000 feet in the Mother Lode foothills to more than 10,000 feet above sea level along the Sierra crest. The mountainous topography is broken by the steep canyons of the Mokelumne, Cosumnes, American, and Rubicon Rivers. Plateaus of generally moderate relief are located between the steep canyons.

A Mediterranean type climate extends over most of the Forest, creating warm, dry summers and cold, wet winters. Average annual precipitation varies from 40 to 70 inches. More than 90 percent of this precipitation occurs from October through April, falling mainly as snow in the higher elevations. A deep snowpack of 5 to 10 feet or more is usually present above 6,500 feet from December to May. Winter low temperatures below zero and summer high temperatures above 100 degrees fahrenheit represent a normal seasonal climatic spread.

Adjacent Ownerships - Land status includes 190,270 acres of other than federal ownership inside the boundary. This figure is about one-quarter of the gross land area. Several large owners have in-holdings that exceed 10,000 acres. However, many of these large ownership parcels are not contiguous. Small, scattered ownership is also prevalent. All of these mixed pieces create a broken ownership pattern throughout the Forest. Intermingled ownership generally complicates use for both parties. Considerable surveying, monumenting, and boundary posting needs to be completed along common property lines to facilitate Forest administration and prevent trespass.

Air Quality - The Forest is located in the Mountain Counties Air Basin. The Forest Service complies with regulations implemented by the California Air Resources Board and the four local County Air Pollution Control Officers to meet California air quality standards.

This resource element is largely affected by external sources of air pollutants, principally those that originate in the Central Valley. Eldorado managers have very little ability to influence these outside factors. The continuous drift of pollutants from agricultural and metropolitan areas makes attainment of Class I Airshed condition in wilderness a difficult goal.

The management practice that internally affects the Forest air quality most is burning of logging debris. Besides adhering to County burn-day policies, the Forest follows an established federal Air Resource Management System (Forest Service Manual, Region 5 Supplement 5153). Under this system, the Forest manages all prescribed burning operations to prevent or minimize smoke penetration away from the Forest. Other Forest sources are wildfire, recreation vehicle traffic exhaust, and dust from travel on unsurfaced Forest roads. All of these are short-term effects, which essentially are manageable under forest practices, standards, and guidelines.

Biomass - The Forest has not extensively entered the biomass market. Biomass management in forest terms is the conversion of vegetative fiber to energy. The Forest's potential in biomass production lies in recovering precommercial thinnings of young stands of marketable tree species, cleared brush, and logging residue. Recovery of biomass normally involves chipping materials at the source and hauling them to an off-forest generation plant. Much of the logging residue is harvested by individual firewood gatherers for home heating. However, the surplus biomass estimated to be available annually for energy conversion is one-million tons green weight.

Chaparral - Woodland chaparral is not extensive on the Forest. A chaparral management program per se is not practical because of the low acreage and scattered nature of this vegetative type. Therefore chaparral is lumped with other vegetative types under a stand maintenance management prescription. Existing species and

composition of chaparral are primarily protected for watershed and wildlife values. In the few instances where chaparral grows on high-site soils, it may be type-converted to grass or forbs for range and wildlife.

Diversity - Diversity is a characteristic that represents the richness, relative abundance, and patterns of different species of plants and animals. Seven successional (seral) stages of plant and animal communities occur on the Forest. The abundance and location of these habitat stages in contrast to one another has been changed by land altering practices such as timber harvesting and road building. Diversity will continue to change over time as forest management intensifies.

The affects of change relate to both the visual appearance of the Forest and the perpetuation of fish and wildlife associated with early, mid, and late successional vegetative species. While the practice is even-aged silviculture (which reduces old-growth trees and favors early successional species), the guiding management requirement is to always maintain a sufficient level of habitat appropriate for all native species, providing this minimum habitat Forest-wide is accomplished by retaining at least 5 percent of each seral stage existing at the start of the plan. No existing seral stage is now below the minimum percentage.

Energy - Potential sources of energy on the Eldorado include hydroelectric, fuelwood, biomass, geothermal, solar, and wind. Only the hydroelectric and fuelwood sources have been extensively utilized in the past. Hydroelectric, fuelwood, and biomass are described as separate resource elements elsewhere in this section of Chapter III.

Biomass, solar, and wind sources have not yet been assessed in detail by the Forest. Timber harvest and other management activities such as precommercial thinning, planting site preparation, and vegetative type conversion constantly create material that could be made available for biomass energy generation. A market has not been developed locally to take advantage of the supply potential.

The State Energy Commission has identified sites within the Forest that offer the best wind development opportunities. These sites have been entered in the resource data base. Solar energy has relatively high potential because of the clean air, latitude, and number of cloudless days found here. However, solar development opportunities are restricted by mountainous terrain and distance to major points of use. Front country areas that are reasonably level and close to existing transmission corridors have the best potential.

Facilities - The Forest has a high density transportation system containing 2,367 miles of roads and 349 miles of trails. An additional 400 miles of privately owned roads are located inside the Forest boundary. The Eldorado Dam System Inventory shows 70 dams or diversions on National Forest land. These diversions are related to

hydroelectric projects, wildlife improvements, and livestock watering facilities. Two major airports serve the Forest: Sacramento Metropolitan Airport and South Lake Tahoe Airport. Three smaller county airports are situated in Georgetown, Placerville, and Jackson. None significantly affect Forest use patterns. The Forest maintains 86 federally owned buildings that are used for housing, office space, and service and storage.

Fire and Fuels - The Forest adheres to national fire policy. The Forest has essentially applied suppression action to control each wildfire in order to meet land management objectives at a least cost effort.

The Forest has historically experienced an average of 88 fires per year. Lightning accounts for 42 fires annually; the rest are person-caused. Large, extended burning-period fires occur every 7-14 years, usually during periods of extreme weather conditions. Recent large fires such as the Ice House, Pilliken, Chili Bar, and Wrights have brought major resource damage to the Forest and have required heavy investments in burn rehabilitation. The future protection of the extensive plantations on these burns is a critical job.

Two factors contribute to the complexity of protection. The first problem is created by a buildup of live and dead fuels. Live fuels have increased because of the emphasis on fire prevention and interruption of natural burn cycles. Dead fuels have accumulated from Forest activities such as timber harvesting. The second problem is tied to land ownership. Twenty-seven percent of the lands within the Eldorado fire protection boundary are privately owned. Residential and other capital developments located on intermingled lands have increased the risk of fire and placed added emphasis on protecting private improvements from wildfire loss.

Fish - The Forest has about 611.4 miles of fishable streams in four major drainage systems: North Fork of the Mokelumne River, Cosumnes River, South Fork of the American River, and the Middle Fork of the American River (including Rubicon). The Forest contains 297 lakes and reservoirs totaling 11,994 acres in both public and private ownership. Eleven large reservoirs alone account for 9,000 surface acres. The remaining water bodies are small, high-elevation lakes.

Rainbow, brown, and eastern brook trout are the main sport fish species. The California Department of Fish and Game operates an active trout fingerling stocking program in the high-elevation lakes and reservoirs and plants more than 200,000 catchables annually in streams and reservoirs.

Forest Pests - The Forest regularly practices pest management as a protection measure. Annual mortality levels vary between years, but past surveys indicate that between 0.1 and 0.3 trees per acre per year are affected. This mortality is usually the result of one or more pests, often in association with adverse environmental

conditions. Pests also cause growth loss, loss of regeneration, top kill, product degradation, and hazard to recreationists. Several pests have been, and will continue to be, significant. These include annosus root rot, black stain root disease, dwarf mistletoe, blister rust, western pine beetle, fir engraver, pine engraver, Douglas-fir tussock moth, pocket gopher, deer, squirrels, and chipmunks.

The activities and impacts of these pests are mitigated by the application of accepted management control practices. Methods of control include biological, chemical, cultural, regulatory, mechanical, and manual. Selection of appropriate methods depends on the pest environment situation and the value of the resources involved. The treatment selection is made at the project level and tiered to the Plan.

Fuelwood - Both commercial and domestic fuelwood is gathered on the Forest. Commercial use involves timber sale permittees who seek to earn a living or supplement their income by supplying firewood to local and extended markets. Domestic use involves private individuals or families that remove firewood for heating their private homes. Individual permits were issued free until 1983. Now these permits are sold at a nominal fee of $10.00 per cord.

Two main sources of fuelwood supply are found on the Forest. One source is commercial timber sale residuals, which are the cull sawlogs or unmerchantable limbwood and top material left in the woods after harvest of green sales. The second source is the dead material that comes from trees and large limbs that fall to the ground, or the smaller suppressed trees that die from competition with other trees. Frequently fire salvage material is made available for firewood sale.

Geology - The Forest is made up of several major types of geological formations. A series of steeply tilted, metamorphic rocks trending northeast-southwest is found along the western part of the forest. Slates, phyllites, and shists dominate this formation. Ultramafic rock interrupts this metamorphic formation in a small north-south belt on the Georgetown District. Granite rocks of the Sierra Nevada batholith are found underlying the remainder of the Forest. Volcanic breccias and flows now overlay the granite batholith along major ridges. This volcanic formation once covered much of the Forest, but subsequent erosion and glaciation have removed it, exposing the underlying granite rocks. Glaciation has occurred from the crest of the Sierra down to 6,000 feet, and glacial deposits are interspersed with the granitic and volcanic formations.

Historical and Cultural - The cultural resources of the Eldorado National Forest are many and varied. American Indians, Europeans, Asians, and non-Indian Americans have left their cultural mark on the land in the form of villages, hunting and food processing sites,

mining camps, railroad grades and railroad logging camps, emigrant way stations and wagon trails, and many other sites. Approximately 750 historic and prehistoric sites have been recorded on the forest, and many more undoubtedly exist.

The Eldorado has had a Cultural Resources Management (CRM) program since 1973. The three main components of the program, as directed by law and National Forest policy, are inventory, evaluation, and enhancement of cultural sites. These management directions are also guided by a "cultural ecology" theoretical orientation that emphasizes the interrelationship between technology and environment, and the effect of both on social and ideological systems. Coordination and consultation with the Office of Historic Preservation (OHP) and the Advisory Council on Historic Preservation (ACHP) are guided by regulations expressed in 36 CFR 800. The current CRM overview will be sent to the OHP; and CRM program alternatives will be coordinated with the State History Plan to ensure compatibility.

The primary cultural resources management emphasis on the Eldorado is inventory. To date, 142,000 acres, or about 24 percent of the total forest area, have been surveyed. Inventories are conducted on a project-by-project basis. They are not guided by a rigorous, scientifically derived model, but rather an intuitive model based on stratification of sensitivity using extensive prefield research and sampling of areas of low sensitivity. Most inventories have been conducted primarily in forested environments. More, intensive inventories are needed in non-project related areas such as high elevation and non-forested environments in order to expand the data base.

At present, project avoidance of known sites is the standard measure of impact mitigation. This approach has the effect of limiting other management options and dedicating portions of the land base to a single use. An emphasis on evaluation of cultural sites would undoubtedly contribute to expanding general management options. Thus far, evaluations have been limited. The lack of an organized, research oriented data base, or regional research designs hinders evaluation of particular classes of cultural resources. Organization of the Forest into study units such as major watersheds, and elaboration of the cultural resources overviews will contribute to the resolution of the situation.

Although no cultural resources on the Eldorado are currently listed on the National Register of Historic Places (NRHP), several sites have been formally determined to be eligible. In order to be considered significant, sites must meet NRHP criteria or must possess local, commemorative value.

Protection and maintenance of significant cultural sites is problematic. On going damage associated with intensive recreational use, vandalism, and erosional processes threatens the integrity of sites. Historic properties such as administrative sites, railroad

trestles and grades, and cabins are especially vulnerable to natural processes of deterioration and decay. The Cultural Resources Monitoring Plan, public education, and enhancement of cultural properties are mechanisms for alleviating the situation. Some enhancement, in the form of cultural interpretation, has been planned for the PiPi prehistoric site and the Emigrant Summit and Pony Express historic trails.

Hydroelectric - The Eldorado is typical of the western Sierra Nevada, where large volumes of water runoff and mountainous terrain provide head (elevational difference) and reservoir sites to run hydroelectric generators. The development of hydroelectric power is a process that is initiated by agencies and individuals outside of the Forest Service. The FERC, upon consultation with the Forest Service, is responsible for determining whether proposals for hydroelectric development are (1) compatible with purposes for which the National Forest was created and (2) consistent with the nation's need for energy in light of the other public needs for the land proposed for development. The final authorization for a project rests with the FERC.

The Forest Service role is (1) to recommend to the FERC if a project interferes or is inconsistent with the purposes for which the National Forest was created or acquired (this is a recommendation only; it is not binding) and (2) to protect National Forest resources by conditioning the license through Section 4(e) of the Federal Water Power Act.

The Forest Service policy for hydroelectric generation is contained in Section 2770.3 of the Forest Service Manual. The manual states, "Consider energy potential a National Forest resource in arriving at management decisions concerning proposed hydroelectric projects." Hydroelectric potential of National Forest land is recognized as a valid and important resource, but it msut be balanced with other uses and resources of the Forest.

Lands - The Forest is located in four counties: Alpine, Amador, El Dorado and Placer. Nearly all of the National Forest land is reserved from the public domain by Presidential proclamation dated prior to 1911. Before the establishment of the Eldorado, private acquisition of public domain was possible by means of various land acts that encouraged settlement of the west. This private acquisition established an irregular ownership pattern and Forest boundary. As a result, the Forest has become engaged in an active lands program to consolidate interior ownership and simplify management. Adjustment is accomplished by land exchange, purchase, or donation.

The Forest also conducts an annual land line location program. Current programming results in the marking and posting of approximately 90 miles of property line per year. Marking and posting reduces the potential for trespass and allows Forest Service project designers to accurately locate their proposed work on the ground.

Private lands inside and along the western edge of the Forest are continually being developed by their owners. Use of these private lands has brought the need for access, water, sewage treatment, fire protection, communications, utilities and other public services. The Eldorado also contains facilities associated with 24 water and power reservoirs operated by 5 municipal and private utilities. The Forest has issued nearly 500 separate nonrecreation special use permits and easements to authorize the occupancy of a wide range of roads, buildings, and facilities.

Law Enforcement - The Forest has experienced an obvious increase in intentional unlawful activities during the past 10 years. These crimes have mostly been directed towards theft of government property, primarily wood products. The acts also include willful disregard of regulations, nonpayment of user fees, occupancy trespass, serious vandalism, and threats to Forest employees performing their official duties.

Similar increases of crime have occurred on private lands and improvements inside the Forest boundary. Permittees who legitimately occupy federal lands have experienced increases in civil disobedience, burglary of residences, and property theft. Recreational thefts have risen sharply, with sizeable losses from parked cars or unattended campsites. Significant winter losses of ski and winter sports equipment occur at special use ski facilities.

Crimes are predominantly in the misdemeanor or petty offense category. Felony crimes against Forest visitors, residents, and employees are rare by comparison. The misdemeanor crimes are usually associated with minor fire violations, fuelwood theft, vandalism, theft from parked cars, and failure to pay recreation fees.

Claims against the government have become more frequent. The Eldorado must treat routine incidents as having potential for future litigation against the Forest. Potential claims require thorough investigation by law enforcement personnel.

Law enforcement actions normally are the responsibility of the local agency such as the County Sheriff; however, the complexity and volume of offenses involving the Forest have led the Eldorado into an expanded program. The changing role of the Forest Service in this field has resulted in both stepping up the Eldorado's internal law enforcement program and adding to reliance upon free and paid cooperative services from the counties.

Minerals - Numerous mineral commodities occur throughout the Forest in deposits varying in size, grade, and development potential. A geothermal source possibly extends into the Forest west of Markleeville. These resources are handled by claim location, by lease, or by mineral materials permit, depending on the type of discovery. Activity in leasables and mineral materials has been minor in the past and is not expected to significantly increase during the period of the Plan.

Claims are continually being filed for locatable minerals, however. The Forest annually receives 75 to 100 notices of intent to operate mining claims. Formal plans of operations are eventually developed for about 10 percent of these notices because proposed mineral activities will cause surface disturbance of National Forest land. Plans of operations are formal agreements between the claimant and the District Ranger to schedule work and provide environmental protection of forest resources. This prevailing interest in locatables should continue through the next 10 years or more.

Range - The Forest authorizes 24 grazing allotment permits that cover approximately 111,000 acres of suitable range. These permittees have been utilizing available forage at the rate of 12,000 - 14,000 animal unit months (AUM) per year. This is mainly transitory range that permittees graze from May to October to supplement or round out their private land operations.

Recreation - The Forest is located within 3-4 hours driving time from the San Francisco Bay Area metropolitan complex of 4.5 million people. The Forest is located within 1-2 hours driving time from Sacramento, where the city and surrounding population is nearing 1.0 million. Outdoor recreation is a major use of the Eldorado because of its location and direct highway access to these large population centers.

The Forest offers a wide variety of recreation opportunities, both winter and summer, with its range of climate, vegetation, and topography. The principal outdoor recreation activities are sightseeing, camping, picnicking, hiking, hunting, fishing, horseback riding, boating, downhill skiing, cross-country skiing, and off-road vehicle travel.

All four of the existing alpine ski areas have potential for expansion and the potential exists for development of one new area. The Forest, in 1984, began development and improvement of ORV areas through funding provided by the State of California "Green Sticker" Program. It is anticipated that this will be a continuing program of the Forest. In 1985 the Forest began an "analysis of continuance" for recreation residences, organization camps, and resorts along Highway 88 on the Amador Ranger District. After completion of this study it is planned to proceed with similar studies on the balance of the Forest.

Water is a major recreation attraction on the Forest. Streams, natural lakes, and man-made reservoirs provide key features for a substantial share of the recreation activities. Public access to some of the more desirable streams and lakeshores is impeded by other uses. Several of the reserviors have recreation developments provided under the terms of FERC licenses. Amador and Pacific Ranger Districts receive the heaviest concentrations of developed use; however, increasing numbers of recreationists each year are

using ORV areas, wilderness, and other dispersed areas. The Forest averages more than 3.0 million recreation visitor days annually. About 57 percent of the Eldorado's use takes place in dispersed areas.

Riparian - Riparian areas consist of riparian ecosystems, aquatic ecosystems, wetlands, and flood plains. These areas are among the most productive, sensitive, diverse, and geographically limited lands in the Forest. Many important resources such as fish, wildlife, and certain vegetation communities, are totally dependent on these riparian areas for their existence. The natural and beneficial values of riparian areas include ground water recharge, moderating of flood peaks, visual and recreational enjoyment, timber production, forage production, wildlife habitat, and cultural resources. Geographical boundaries of riparian areas are determined by soil and vegetation.

Riparian areas have four characteristics in common: (1) they create well-defined habitat zones within much drier surrounding areas; (2) they make up a minor portion of the overall Forest; (3) they are generally more productive in terms of biomass, plants, and animals; and (4) they are critical sources of diversity within the Forest ecosystem.

Sensitive Plants - Eight sensitive plant species are known, and two species is suspected to occur on the Forest. None of them are Federally listed as threatened or endangered; one, Senecio layneae, is listed by the State of California as rare. Sensitive plant species growing on National Forest lands are managed to ensure they will not become threatened or endangered because of Forest Service actions.

Sensitive plants of the Eldorado are:

| | | |
|---|---|---|
| | Calochortus clavatus var. avius | Eldorado tulip |
| | Draba asterophora var. asterophora | Tahoe draba |
| | Draba asterophora var. macrocarpa | Cup Lake draba |
| | Lewisia pygmaea ssp. longipetala | Long-petaled lewisia |
| | Lewisia serrata | Saw-leaved lewisia |
| | Lomatium stebbinsii | Stebbins' lomatium |
| * | Navarretia prolifera ssp. lutea | Yellow bur navarretia |
| | Phacelia stebbinsii | Stebbins' phacelia |
| ** | Senecio layneae | Layne's butterweed |
| | Silene invisa | Camouflaged campion |

* Endemic to the Eldorado National Forest and El Dorado County.
** Rare, State of California.

Soils - Over 30 major soil series have been identified and mapped on the Eldorado National Forest. Their characteristics are extremely diverse due to the variety of such soil forming factors as vegetation, topography and geology. Soils weathered from volcanic parent materials dominate our productive timber lands. Typically

soils found below 4,500 feet are considered to be highly productive because soil above 4,500 feet become coarser in texture, shallower in depth and have reduced productivity over the lower elevation soils. At the higher elevations of the Forest, most of the soils have been removed by glacial action leaving large expanses of glaciated rock outcrop with pockets of soils weathered from alluvium, glacial till and outwash, and granitic rock.

Special Areas - The Forest has several potential special areas. The term special area, in this case, is used to categorize formally dedicated areas other than wilderness or wild and scenic rivers. They fall into three separate classes: (1) Research Natural Areas, (2) Botanical/Geological/Archaeological Special Interest Areas, and (3) National Trails.

The inventoried sites and trails are listed as follows:

Candidate Research Natural Areas

Peavine
Station Creek
Snow Canyon
Middle Mountain

Botanical/Geological Special Interest Areas

Big Crater - Geological
Leonardi Falls - Botanical
Little Crater - Geological
Rock Creek - Botanical
Round Top - Botanical/Geological
Traverse Creek - Botanical
Wrights Lake Bog - Botanical
Pyramid Creek - Geological
Mokelumne - Archaeological

National Trails

Emigrant Summit Trail
Pacific Crest Trail
Pony Express Trail
Rubicon Springs 4WD Trail

Timber - The major commercial timber species are ponderosa pine, Jeffrey pine, sugar pine, white fir, California red fir, Douglas-fir, and incense cedar. The tolerance of the majority of these commercial species is high enough to allow seedlings to endure fairly heavy shade, but it is too low to allow for full tree development unless the tree is dominant in the stand. These species grow best as evenaged stands of one species, or as dominant individual trees in evenaged stands of mixed species, due primarily to sunlight requirements.

The principal vegetative types native to the Forest are:

Woodland Chaparral - found in canyon areas up to 4,000 feet. Major species are digger pine, interior live oak, yerba santa, western redbud, scrub oak, California laurel, and many grasses and forbs.

Mixed Conifer - growing in the 2,000 to 6,500 foot elevation range. Major species include ponderosa pine, sugar pine, incense cedar, white fir, Douglas-fir, bigleaf maple, California black oak, and interior live oak. Secondary species include deerbrush, mountain whitethorn, Sierra mountain misery (bear clover), greenleaf manzanita, thimble berry, and Sierra currant. This forest type also has extensive meadows consisting of grasses and forbs.

True fir - growing in the 6,500 to 8,000 foot elevation range. Species include red fir, lodgepole pine, western white pine, Jeffrey pine, chinquapin, snowbrush, quaking aspen, grasses, and forbs.

Subalpine - growing in the 7,500 to 9,000 foot elevation range. Species include mountain hemlock, western juniper, whitebark pine, alpine willow, wild buckwheat, squaw currant, columbine, brush cinquefoil, white heather, and penstemon. Tree growth is scattered in this type.

Lands suitable for timber production are, for the most part, presently accessed, situated on gentle slopes (35 percent or less), and supported by productive soils. Long term sustained yield (LTSY) is calculated at approximately 143.4 million board feet per year. The allowable sale quantity (ASQ) is 138.4 million board feet annually.

Visual Resources - The Forest lies within the Sierra Nevada Landscape Province. The western slope of the Sierra Nevada is dominated by uniform summit altitudes, giving the appearance of a widely-extended and deeply-trenched sloping plateau. It is typified by dark blue-green forest terrain that is moderately rugged and often dissected by deep valleys and river canyons. The existing visual condition exceeds forest visual quality objectives.

The character of the landscape can be represented by three general descriptions: (1) the front country, (2) the mixed conifer/red fir zone, and (3) the crest zone. Ponderosa pine stands are of lighter color, more open, and frequently interrupted by large brushfields at the lower elevations.

The Eldorado uses the Forest Service Visual Resource Management system to deal with its visual resources. Forest landscapes are mapped by their visual quality, known as Variety Class; by magnitude of public concern for scenic quality, known as Sensitivity Level; and by measurable standards for visual resource management, known as Visual Quality Objectives.

Existing Visual Condition (EVC) refers to the levels of natural character that currently exist within the Forest. The EVC assessment provides a baseline for evaluating the amount of change in visual quality that will result from management activities.

Water - Water is a major resource. The average Forest acre receives about 60 inches of precipitation annually. Average annual runoff is about 29 inches. This runoff is roughly equal to a yield of 2.42 acre-feet of water per acre of land per year. Forest lands yield an estimated 1,444,000 acre-feet per year. The present water quality of surface waters is excellent yearlong. A few periods of moderate degradation are caused by sediment moving from disturbed lands such as timber harvest areas, roads, and wildfire burned areas.

Water quality maintenance and improvement measures called Best Management Practices (BMP's), developed in compliance with Section 208 of the Federal Clear Water Act PL92-500, are currently being implemented on the Eldorado. The (BMP's) are the measures both State and Federal water quality regulatory agencies expect the Forest Service to implement to meet water quality objectives. See Appendix F, Water Quality Management for a listing of these (BMP's).

Wild and Scenic Rivers - The Forest does not have any currently designated wild and scenic rivers within its boundaries; however, segments of four rivers appear as candidates on the National Park Service nationwide inventory. These rivers are segment 1 of the North Fork of the Mokelumne, and all segments of the Rubicon and the North and Middle Forks of the Cosumnes. The North Fork of the Mokelumne can be considered for dual designation because the Eldorado segment lies within the Mokelumne Wilderness. The Forest has the responsibility for assessing the suitability and eligibility of these streams for each class (recreation, scenic, wild) of wild and scenic river. The Stanislaus National Forest will be responsible for making recommendations on the North Fork of the Mokelumne above Salt Springs Reservoir.

Wilderness - The Eldorado contains portions of the Desolation and Mokelumne Wildernesses. Desolation is shared with the Lake Tahoe Basin Management Unit. Mokelumne is shared with the Stanislaus and Toiyabe National Forests. Desolation contains 42,194 acres. Mokelumne contains 59,865 acres, 19,494 acres of which were added by the California Wilderness Act of 1984. The Mokelumne addition is comprised of parts of the former Salt Springs, Tragedy-Elephants Back, and Raymond Peak RARE II roadless areas.

Desolation Wilderness lies immediately southwest of Lake Tahoe and approximately 90 miles east of Sacramento. It includes the headwaters of the Rubicon River, the South Fork of the American River, and numerous lesser drainages that empty into Lake Tahoe. Desolation Wilderness is a spectacular area of high, glaciated basins, craggy peaks, and more than 80 mountain lakes. Elevations range from 6,000 to 10,000 feet. As one of the most heavily used

wildernesses in the National Forest System, Desolation operates on a daily visitor quota basis that sets an overnight camping limit of 700 people from June 15 through Labor Day. There are numerous pre-existing uses in the wilderness, including streamflow and snow measurement devices, streamflow maintenance dams, power company reservoirs, and range management facilities. These uses create nonconformities and some conflicts of use.

Mokelumne Wilderness lies on both sides of the Sierra crest, but the Eldorado portion is on the west slope. It is situated entirely within the North Fork of the Mokelumne watershed. The terrain is rugged and remote. Elevations range from 4,000 to 10,400 feet. The area is spectacular and rugged. Much of the boundary is inaccessible except by foot and horse trails. Most of the area is sparsely timbered, although numerous small scattered stands provide good examples of various forest types. The area provides an excellent challenge to wilderness users who desire primitive naturalness and solitude. The recent expansion of the area included about 600 acres of private land. However, there are few existing nonconformities or conflicts in this wilderness. Visitor use is light in Mokelumne Wilderness in contrast to Desolation. The quality of the wilderness experience is considered excellent.

The balance of the nondesignated acres in the Mokelumne proposal and five other former Eldorado RARE II areas have been released for multiple use management by the California Wilderness Act. Other released RARE II areas are: Pyramid Peak, Poison Hole, Rubicon, Fawn Lake, and Dardanelles. Unroaded sections of these areas may once again be evaluated for wilderness in second generation forest plans 10 years from now. The California Wilderness Act named Caples Creek RARE II area for further study in the planning process.

Wildlife - The Forest provides habitat for 320 species of birds, mammals, reptiles, and amphibians. Wildlife on the Forest has been affected by habitat changes that have occurred since the middle 1800's. However, most of the components of the original ecosystem are still present today -- only in different amounts. Some species, such as grizzly bears and wolves, have disappeared. Man has introduced many other species, which have never naturally occurred here, such as English sparrows, starlings, wild turkeys, beavers, muskrats, and bullfrogs. The few animals listed as endangered or sensitive never thrived here in great numbers but will now be maintained at viable population levels.

Woodlands - Two woodland types grow on the Forest. They are digger pine-oak and black oak. Digger pine-oak is characterized by a digger pine and blue oak overstory, with an understory consisting of mixtures of mariposa manzanita, buckbrush, redberry, California coffeeberry, western mountain mahogany, other shrub species, and annual grasses. This type occurs at low elevations under 4,000 feet.

The black oak woodland is a vegetative community characterized by dense to open stands of black oak and associated hardwoods, with minor amounts of interspersed conifers. The shrub understory is usually sparse but may be dense in openings. Other hardwoods associated with black oak include canyon live oak, bigleaf maple and Pacific madrone. Understory includes poison oak, deerbrush, and various forbs. The black oak woodland type ranges from 1,000 feet of elevation at the western forest boundary up to about 6,000 feet in the interior.

## B. Supply/Demand Situation

A detailed supply/demand analysis was made for several Eldorado resource elements. This part of the summary of the management situation focuses on past, present, and future trends for those resources that have reliable economic analysis data available. Production potential is incorporated into the supply trends where applicable.

### 1. Range

a. Supply - The total supply estimate is a result of three forms of activities. These are: (1) background, (2) timber induced, and (3) range capital investments. Each of these items are discussed below.

The background supply is determined by the existing vegetation. Vegetation has different grazing capacities prior to any activities being performed. Table III-1 illustrates the total background grazing supply.

TABLE III-1
BACKGROUND GRAZING SUPPLY
(AUM Capacity by Vegetative Type)

| Vegetation | AUM's/Acre | Number of Acres | AUM's |
|---|---|---|---|
| Grassland | .333 | 949 | 316 |
| Meadow | .5 | 2,937 | 1,469 |
| Perennial Forbs | .2 | 851 | 170 |
| Sagebrush | .125 | 1,646 | 206 |
| Browse | .167 | 25,435 | 4,240 |
| Conifer | .05 | 77,620 | 3,881 |
| Broadleaf Trees | .05 | 1,018 | 51 |
| Annual Grass | .333 | 422 | 141 |
| Total | | | 10,474 |

An additional supply of forage for grazing is made available through timber activities. Clearcutting makes additional forage available for a short time before the timber stand is reestablished; however, this availability occurs only if the forage species are not suppressed to promote the growth of the desired conifer species. Table III-2 shows the potential AUM's per acre made available through these activities.

TABLE III-2
GRAZING SUPPLY INDUCED BY TIMBER ACTIVITIES
(Animal Unit Months Per Year)

| Timber Activity | AUM's Per Acre 1st Decade | 2nd Decade | 3rd Decade | 4th Decade |
|---|---|---|---|---|
| Clearcut | .1 | .063 | .045 | 0.0 |
| Shelterwood | .1 | .1 | .063 | .045 |

The third form of grazing supply results from range capital investments. These are vegetation altering activities designed for the specific purpose of enhancing range. These activities include: (1) type conversion of low site timber to grass, (2) type conversion of hardwoods to grass, (3) brush regeneration, (4) intensive meadow management, and (5) lodgepole conversion to meadows. The increase in range supply resulting from these activities is illustrated in Table III-3.

TABLE III-3
INCREASE IN FORAGE SUPPLY
FROM RANGE CAPITAL INVESTMENTS
(Animal Unit Months Per Acre Per Year)

| Activity | AUM's Per Acre 1st Decade | 2nd Decade | 3rd Decade |
|---|---|---|---|
| Hardwood Type Conversion | .200 | .200 | .200 |
| Low Site Timber Type Conversion | .200 | .200 | .200 |
| Brush Regeneration | .333 | .143 | .125 |
| Meadow Management | | | |
| Wet Meadows | 2.0 | 2.0 | 2.0 |
| Dry Meadows | 1.0 | 1.0 | 1.0 |
| Lodgepole to Meadow Conversion | 1.0 | 1.0 | 1.0 |

When grazing supply is desired beyond background and timber induced levels, some combination of the above activities may be performed. These activities carry a higher cost, however.

b. Demand - The Forest provides approximately 2 percent of the total local and regional supply of range forage.

Historically there has been a regional demand for new forage areas. Livestock are being transported hundreds of miles to obtain forage. When new forage areas have been offered to the market in viable allotments, they have been taken. The demand for range forage exceeds the 24,600 animal unit month production capacity of the Forest. This trend of demand exceeding supply is expected to continue throughout the 10-year plan period.

## 2. Recreation

a. Supply - The current and potential supply was estimated for the following forms of recreation: (1) dispersed, (2) downhill skiing, (3) campgrounds, and (4) other developed sites. Because of the different nature of these types of recreation, different procedures were used to estimate their individual supplies. The following discussion details that process and the results for each.

All the forms of developed recreation supply (campgrounds, ski areas, and other) were based on the following three factors: (1) persons-at-one-time (PAOT) capacity, (2) season of use, and (3) utilization. PAOT capacity is simply a measure of how many individuals can physically occupy the site at a given time. This is multiplied by the number of days the site is open (season of use) to arrive at the theoretical supply. The final step to arrive at the actual supply is to multiply the theoretical supply by the utilization factor. The utilization factor takes peak use days and midweek vacancies into account. It is not practical to have every site full every day. The utilization factor thus reduces the theoretical capacity to a level that may realistically be achieved. The utilization factor for the Forest was assumed to be 50 percent.

The potential supply of campground, ski area, and other developed recreation considers the construction of new sites and the expansion of existing ones. The Forest Service has the ability to expand its current recreation supply through such capital investments as trailheads, parking lots, picnic grounds, and campgrounds. Table III-4 shows the existing and potential supply of developed recreation. The potential supply includes the development of all areas identified as potential.

TABLE III-4

CURRENT AND POTENTIAL DEVELOPED RECREATION SUPPLY
(MRVD - Thousand Recreation Visitor Days)

| Type | MRVD Current Supply | Potential Supply |
|---|---|---|
| Campgrounds | 1,239.4 | 1,728.0 |
| Ski Areas | 2,451.4 | 3,480.5 |
| Other Developed | 1,174.0 | 4,223.0 |
| Total | 4,864.8 | 9,431.5 |

Current recreation resource planning uses a concept called Recreation Opportunity Spectrum (ROS). It consists of combinations of activities, physical settings, and experience opportunities. The five ROS classes used are: (1) Primitive - P, (2) Semiprimitive Nonmotorized - SPNM, (3) Semiprimitive Motorized - SPM, (4) Roaded Natural - RN, (5) Rural - R. Definitions of each class are in the glossary of the Environmental Impact Statement.

Table III-5 displays the existing situation using these ROS classes. Shown for each ROS class are acres, PAOT's and developed and dispersed RVD's in 1982.

TABLE III-5
EXISTING SITUATION BY ROS CLASS
(MRVD - Thousand Recreation Visitor Days)

| ROS Class | N.F. Acres | PAOT | 1982 MRVD Use | |
|---|---|---|---|---|
| | | | Developed | Dispersed |
| P | 81,029 | 648 | 0 | 80.4 |
| SPNM | 57,920 | 521 | 0 | 126.4 |
| SPM | 56,114 | 617 | 3.0 | 203.5 |
| RN | 396,954 | 32,947 | 1,046.1 | 1,426.4 |
| R | 4,707 | 3,907 | 415.3 | 2.8 |
| Total | 596,724 | 38,640 | 1,464.4 | 1,839.5 |

b. Demand - The quantity demanded of RVD's has been steadily increasing for all forms of recreation (see Table III-6). The largest increase has been in total developed use where the quantity demanded has increased 38 percent over the last 5 years. The smallest increase during the same period has been only 9 percent in motorized recreation.

TABLE III-6
QUANTITY DEMANDED OF RECREATION VISITOR DAYS
(MRVD - Thousand Recreation Visitor Days 1975-1982) 1/

| Year | Dispersed Nonmotorized | Dispersed Motorized | Developed | Wilderness |
|---|---|---|---|---|
| 1975 | 848.6 | 609.5 | 1092.3 | 108.8 |
| 1976 | 735.2 | 609.3 | 1001.3 | 98.6 |
| 1977 | 771.0 | 611.3 | 1161.0 | 117.2 |
| 1978 | 795.1 | 624.9 | 1320.7 | 151.2 |
| 1979 | 931.5 | 616.4 | 1560.9 | 111.5 |
| 1980 | 1015.3 | 664.1 | 1512.6 | 129.0 |
| 1981 | 1069.9 | 713.3 | 1435.4 | 129.0 |
| 1982 | 1019.8 | 679.9 | 1464.4 | 139.8 |

1/ Use figures from prior years were not calculated in a similar manner, and therefore, are not comparable.

The figures for 1976 and portions of 1977 are abnormally low because of the combined drought and gas shortage that kept large numbers of recreationists away from the Forest during that time. Some portions of the Forest were even closed due to the exceptionally high fire hazard.

Demand projections were made for two forms of recreation: total developed, and dispersed combined with wilderness. Wilderness was combined with dispersed because wilderness can create its own demand. If a person has been backpacking in an area with primitive characteristics, and if the area is recommended for wilderness, the person would become a wilderness user. Consequently, limiting a wilderness demand analysis only to use in existing wilderness may be misleading when the same kind of recreation experience occurs just outside the wilderness and could result in underestimating wilderness demand. Combining dispersed with wilderness demand also allows economic competition between those two forms of recreation for land allocations. If an area is recommended for wilderness, there is a net loss to dispersed recreation. Combining these two forms of recreation into one demand constraint provides the Forest with the ability to assess the trade-offs between wilderness use and general dispersed recreation.

The demand projections for total developed recreation and the combination of wilderness and dispersed recreation are shown in Table III-7. Demand was considered as a function of population in the market area.

TABLE III-7
PROJECTED RECREATION DEMAND
(MRVD - Thousand Recreation Visitor Days)

| Decade | Year | Total Developed | Dispersed/Wilderness |
|---|---|---|---|
| 1 | 1990 | 2,483.8 | 2,140.7 |
| 2 | 2000 | 3,227.2 | 2,470.2 |
| 3 | 2010 | 3,842.5 | 2,742.9 |
| 4 | 2020 | 4,410.0 | 2,995.2 |
| 5 | 2030 | 4,951.5 | 3,237.7 |

Table III-7 shows that the largest increase in demand is expected for total developed recreation. A lesser increase is expected for the dispersed/wilderness combination.

Using the ROS class concept, potential capacity and demand are displayed in the following table.

TABLE III-8
POTENTIAL RECREATION CAPACITY AND DEMAND
(Capacity and Demand in Thousands of RVD's)

| ROS | N.F. | Total | Potential | Demand | | | | |
|---|---|---|---|---|---|---|---|---|
| Class | Acres | PAOT | Capacity | 1990 | 2000 | 2010 | 2020 | 2030 |
| P | 81,029 | 891 | 190 | 192 | 214 | 234 | 252 | 272 |
| SPNM | 57,920 | 753 | 304 | 155 | 172 | 188 | 201 | 217 |
| SPM | 56,114 | 1,066 | 347 | 274 | 303 | 330 | 356 | 383 |
| RN | 396,954 | 50,413 | 8,271 | 3,498 | 4,409 | 5,166 | 5,833 | 6,483 |
| R | 4,707 | 4,924 | 794 | 505 | 599 | 667 | 763 | 834 |
| TOTAL | 596,724 | 58,047 | 9,906 | 4,624 | 5,697 | 6,585 | 7,405 | 8,189 |

## 3. Timber

a. Supply - The Forest reinventoried its timber resource in 1984 ("Automated Forest Classification and Inventory in the Eldorado National Forest," USDA, Forest Service, March 1983). The previous inventory was made in 1972. The latest version was completed using land satellite imagery to produce timber type maps with associated vegetation labels. Each timber type was field sampled for inventory data. The results are displayed in Tables III-9 thru 11.

TABLE III-9
EXISTING COMMERCIAL CONIFER INVENTORY BY STRATA

| | | Cubic Volume | | Scribner Volume | |
|---|---|---|---|---|---|
| Strata | Acres | Vol/Acre | Total (MMCF) | Vol/Acre (MBF) | Total (MMBF) |
| M3G | 77,986 | 5,371.6 | 418.9 | 35.121 | 2,738.9 |
| M3P | 116,557 | 3,121.2 | 363.8 | 20.721 | 2,415.2 |
| M4G | 54,511 | 7,982.4 | 435.1 | 52.103 | 2,840.2 |
| M4P | 36,958 | 5,047.6 | 186.5 | 32.864 | 1,215.6 |
| R3G | 10,627 | 8,458.3 | 89.9 | 53.781 | 571.5 |
| R3P | 13,526 | 2,906.9 | 39.3 | 18.997 | 257.0 |
| R4G | 12,364 | 8,877.5 | 109.7 | 57.004 | 704.8 |
| R4P | 13,185 | 5,088.4 | 67.1 | 32.760 | 431.9 |
| TOTAL | 335,714 | 5,094.5 | 1,710.3 | 33.288 | 11,175.1 1/ |

Average Mixed Conifer Volume per Acre = 32.201 (Plantations Excluded)
Average Red Fir Volume per Acre = 39.540 (Plantations Excluded)

1/ An estimated additional 33.3 MMBF of mixed conifer inventory is within the oak strata.

TABLE III-10
COMMERCIAL CONIFER VOLUME SUMMARY BY STRATA

1. Wilderness Inventory:

| Strata | Acres | MBF/Acre | Total Volume (MBF) |
|---|---|---|---|
| M3G | 216 | 35.121 | 7,586.1 |
| M3P | 1,897 | 20.721 | 39,307.7 |
| M4G | 126 | 52.103 | 6,565.0 |
| M4P | 181 | 32.864 | 5,948.4 |
| R3G | 772 | 53.781 | 41,519.0 |
| R3P | 832 | 18.997 | 15,805.5 |
| R4G | 766 | 57.004 | 43,665.1 |
| R4P | 731 | 32.760 | 23,947.6 |
| TOTAL | 5,521 | 33.390 | 184,344.4 MBF |

2. Low Site Commercial Conifer Inventory:

| Strata | Acres | MBF/Acre | Total Volume (MBF) |
|---|---|---|---|
| M3P | 27,609 | 20.721 | 572,086.1 |
| M4P | 1,326 | 32.864 | 43,577.7 |
| R3P | 4,114 | 18.997 | 78,153.7 |
| R4P | 634 | 32.760 | 20,769.8 |
| TOTAL | 33,683 | 21.185 MBF | 713,587.3 MBF |

3. Hardwood 1/ Inventory - Oak Strata and Mixed Conifer

| | Acres | Cubic Volume (MMCF) | Scribner Volume (MMBF) |
|---|---|---|---|
| Oak Strata | 7,933 | 24.9 | 95.8 |
| Mixed Conifer | 286,012 | 907.5 | 508.9 |
| TOTAL | 293,945 | 932.4 | 604.7 |

1/ Black Oak only

TABLE III-11
PERCENT SPECIES COMPOSITION

| | |
|---|---|
| Douglas-fir | 11% |
| Ponderosa Pine | 16% |
| Jeffrey Pine | 4% |
| Sugar Pine | 6% |
| Western Whitepine | Nominal |
| Lodgepole Pine | 2% |
| White Fir | 25% |
| Red Fir | 7% |
| Incense Cedar | 20% |
| Black Oak | 8% |
| Other Hardwoods | 1% |
| TOTAL | 100% |

b. Demand - Timber demand cannot be projected from historical sale trends. All timber offered in viable sale packages in the past decade was sold; therefore, past sale trends only reflect the amount of timber that the Forest was able to put up for sale rather than the amount demanded. Almost all of the timber is sold to 17 companies operating 11 sawmills, a peeler plant, and a box plant within 50 miles of the Forest. Only the short run (0-5 years) mill capacity in the local area could limit the amount of timber that can be sold. However, over longer periods, both the number and size of mills operating in the local area historically have adjusted to fit the supply of available private and National Forest timber.

The demand for timber is determined by trends in regional and national markets for wood products. These markets are primarily influenced by population and income levels, interest rates, the number of housing starts, and the level of imports and exports in wood products. The size of regional and national markets is very large in comparison to the

productive capacity of the Forest, and the Forest itself is unable to significantly affect market prices. Timber prices have trended upward, reflecting the increasing scarcity of timber. This pattern is expected to continue. 1/

## 4. Water

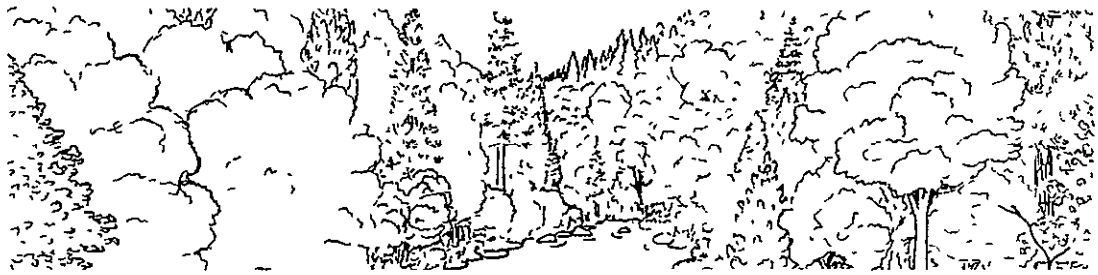
a. Supply - Water supply is generated from three different sources. These are: (1) background, (2) timber induced, and (3) intensive water yield practices.

Background water is yield that naturally occurs prior to any vegetative manipulation. Stream flow records show that the average acre of land within the Forest boundary yields 2.4 acre-feet per year; however, various elevation zones, as represented by vegetation and soil types, give predictably different yields. These yields were approximated so that the parts are equal to the whole. Background yields that representing the base period from 1911 to 1960 are approximated in Table III-12.

TABLE III-12
BACKGROUND WATER SUPPLY

| Elevation | Vegetative Type | Yield Ac. Ft./Acre/yr |
|---|---|---|
| 1,000-3,500 | Ponderosa pine and brush | 1.1 |
| 3,500-6,000 | Mixed conifer | 2.3 |
| 6,000-8,000 | Red fir and lodgepole | 3.0 |
| 8,000-10,000 | Subalpine and barren | 4.0 |
| Average | | 2.4 |

Additional water yield is generated by clearcutting and shelterwood harvests. This extra water yield is an induced benefit of timber activities that were not designed to promote water yield. Table III-13 illustrates the amount of induced water yield that results from these practices.



1/ See DEIS Appendix B for the timber prices and trends used in the modeling and analysis process. For a comprehensive analysis of timber markets, see An Analysis of the Timber Situation in the United States 1952-2030, U.S. Department of Agriculture Forest Service, Forest Resource Report No. 23, December 1982.

TABLE III-13
INDUCED WATER YIELD FROM TIMBER ACTIVITIES
(Acre-feet Per Acre Per Year)

| Practice | Area | Yield in Acre-Feet/Acre/Yr Decade 1 | Decade 2 | Decade 3 |
|---|---|---|---|---|
| Thinnings | All | .00 | .00 | .00 |
| Clearcut | Ponderosa pine | .50 | .17 | .00 |
| Clearcut | Mixed conifer | .75 | .25 | .00 |
| Clearcut | Red fir | .92 | .67 | .25 |
| Shelterwood Prep. Cut | Ponderosa pine | .42 | .17 | .00 |
| Shelterwood Prep. Cut | Mixed conifer | .58 | .25 | .00 |
| Shelterwood Prep. Cut | Red fir | .75 | .42 | .08 |
| Shelterwood Regen. Cut | Ponderosa pine | .08 | .00 | .00 |
| Shelterwood Regen. Cut | Mixed conifer | .17 | .00 | .00 |
| Shelterwood Regen. Cut | Red fir | .17 | .08 | .00 |
| Selection Cutting | All | .00 | .00 | .00 |
| Group Selection | Ponderosa pine | .20 | .07 | .00 |
| Group Selection | Mixed conifer | .38 | .13 | .00 |
| Group Selection | Red fir | .55 | .40 | .15 |

Intensive water practices are specifically designed to enhance water yield. These include type conversions of low site timber lands, type conversion of hardwoods, and snowpack selection in the red fir zone. Table III-14 displays the induced water yield generated by these intensive practices.

TABLE III-14
INDUCED WATER YIELD FROM INTENSIVE WATER PRACTICES
(Average Yield in Acre-Feet Per Acre Per Year)

| Practice | Area | Decade 1 | Decade 2 | Decade 3 | Decade 4 | Decade 5 |
|---|---|---|---|---|---|---|
| Type Conversion | Hardwoods | 1.58 | 1.58 | 1.58 | 1.58 | 1.58 |
| Type Conversion | Ponderosa pine | .42 | .42 | .42 | .42 | .42 |
| Type Conversion | Mixed conifer | .58 | .58 | .58 | .58 | .58 |
| Type Conversion | Red fir | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Snow Pack Selection | Red fir | 1.50 | 1.50 | 1.50 | 1.50 | 1.50 |

The maximum supply of water was estimated by a Forest water yield opportunity evaluation that considered all the activities that increase water yield. The results of the analysis to project maximum water yields for 5 decades is shown in Table III-15 below.

TABLE III-15
ANNUAL MAXIMUM WATER SUPPLY FOR THE 50-YEAR HORIZON
(Thousand Acre-Feet Per Year)

| | Decade 1 | Decade 2 | Decade 3 | Decade 4 | Decade 5 |
|---|---|---|---|---|---|
| Background Yield | 1444 | 1444 | 1444 | 1444 | 1444 |
| Induced Water Yield | 48 | 49 | 59 | 52 | 38 |
| Total Water Yield | 1492 | 1493 | 1503 | 1496 | 1482 |

The Forest is currently targeted to yield 1,823,000 acre-feet per year of water meeting State and Federal water quality objectives by 1990, and 1,842,000 acre-feet per year by 2030. These outputs are not feasibly attainable, however, as they represent outputs in excess of the total water yielded from National Forest lands, which averages only 1,444,000 acre-feet per year. Currently, 1,386,000 acre feet of water yielded from National Forest Lands, approximately 96 percent, meets State and Federal water quality objectives.

b. Demand - The demand for water can be divided into three categories: (1) withdrawal use, such as hydroelectric, which removes water from its natural courses, uses it, and then returns it to a stream or underground source for reuse; (2) consumptive use, which represents that portion of the withdrawal consumed through evaporation, transpiration, or by discharge to irretrievable locations; and (3) instream uses such as rafting, swimming, and fisheries.

Each of the above types of use will increase as population increases. The demand for water from the Eldorado, which supplies only a portion of total regional demand, is expected to increase throughout the 50-year planning horizon.

## 5. Wilderness

a. Supply - Wilderness supply is based on the miles of trails in the wilderness as well as acres. Trails provide access into these areas and distribute use. If these trails did not exist, the majority of the use would not occur. The Desolation Wilderness was studied to estimate the available supply. As one of the most heavily used wildernesses, it is already regulated to avoid overcrowding. No greater use can be attained beyond the current use in Desolation without degrading the wilderness experience. Desolation also has the maximum trail density per acre. Therefore, its use represents the maximum wilderness RVD's per mile of trail and per acre. The calculation for wilderness supply is shown in Table III-16. The coefficient of 2.89 RVD's/acre was used only for areas presently accessed with trails. Areas without trails used a coefficient of 0.0 RVD's/Acre.

TABLE III-16
WILDERNESS SUPPLY ESTIMATE
(Recreation Visitor Days Per Year)

| | | |
|---|---|---|
| Maximum Use | 121,900 | RVD's |
| Miles of Trails | 70.3 | Miles |
| Use Per Mile | 1,734 | RVD's |
| Acres Accessible | 42,194 | Acres |
| Use Per Acre with Trails | 2.89 | RVD's |
| Use Per Acre without Trails | 0.0 | RVD's |

This coefficient was applied to both Desolation and Mokelumne Wilderness to estimate the existing supply. The existing available wilderness supply is 189,179 RVD's.

If additional wilderness supply is desired, there are two options: either construct more trails in the existing Mokelumne Wilderness area or add more wilderness. Table III-17 shows the current wilderness supply and the potential supply available from additional trail construction or the additions of Further Planning Areas.

TABLE III-17
WILDERNESS SUPPLY UNDER VARIOUS ASSUMPTIONS

| Assumption | RVD's |
|---|---|
| Current Situation | 248,500 |
| Additional Trails in Existing Areas | 46,500 |
| Caples Creek (with trails) | 50,100 |
| TOTAL | 345,100 |

The maximum wilderness supply that could be created is 477,857 recreation visitor days.

b. Demand - The demand for wilderness recreation has been steadily increasing on the Eldorado. Desolation Wilderness, one of the most popular wilderness areas in California, has experienced such heavy use that it is now on a quota system. Table III-18 shows the past wilderness use on the Eldorado.

TABLE III-18
PAST WILDERNESS USED
(Thousands of Visitor Days)

| Year | RVD's | Year | RVD's |
|---|---|---|---|
| 1970 | 52.1 | 1976 | 108.8 |
| 1971 | 76.2 | 1977 | 98.6 |
| 1972 | 100.2 | 1978 | 117.2 |
| 1973 | 99.3 | 1979 | 151.2 |
| 1974 | 108.2 | 1980 | 111.5 |
| 1975 | 106.2 | 1981 | 129.0 |
| | | 1982 | 139.8 |

A discussion of demand projections for wilderness is referred to previously under recreation demand.

## 6. Wildlife

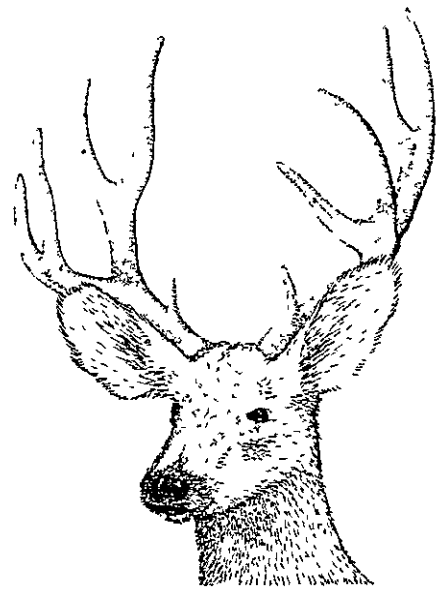
a. Supply - The forest has an inventory of wildlife habitat types based on Wildlife Habitat Relationships (Verner and Boss, 1980) and Forest timber type mapping. Wildlife population data and trends for most of the indicator species are derived from estimates based on habitat models and input from species experts within the California Department of Fish and Game.

Table III-19 displays the current knowledge about supply (populations) and demand for wildlife. The California Department of Fish and Game does not have supply/demand figures in the approved deer herd management plans. However, the increased herd management goals prescribed in the plans imply a potential increase in demand for deer hunting and harvest in the future.

Current use of wildlife is estimated using Wildlife and Fish User Days (WFUDs). Combined consumptive and nonconsumptive use in 1982 was estimated at 143,000 WFUDs. Each WFUD represents 12 hours of wildlife use such as hunting, bird-watching, or photography. WFUDs can most accurately be calculated for deer and bear because hunter success and the number of animals taken is known. Estimated WFUDs in 1982 for deer, bear, and small/upland game are listed in Table III-19.

b. Demand - Data for predicting nonconsumptive demand for wildlife is sketchy. Overall, nonconsumptive uses such as bird-watching and nature photography are increasing and will continue.

The RPA objectives for habitat show an increase in capability for species that are harvested for consumptive use. Deer habitat capability is targeted to increase 20 to 25 percent (depending on subspecies) by 2030. An increase in hunting use is implied.



# C. Resource Use and Opportunities

## 1. Adjacent Ownership

Opportunity exists to obtain optimum landownership patterns for both public and private ownership. The Forest will conduct a land ownership adjustment program that includes purchases, exchanges, and donations to reduce conflicts caused by intermingled holdings. Management activities will become less encumbered, and costs will go down. The likelihood of trespass by either public or private owners will decrease sharply as adjustment progresses.

## 2. Air Quality

The Eldorado can take the opportunity to attain high air quality levels for the Forest except in Class I wilderness airsheds. Pollutants from outside sources, unless controlled at their point of origin in the future, will prevent attainment of Class I conditions for Desolation and Mokelumne Wilderness. Forest managers will mitigate air polluting activities to achieve air quality goals on National Forest land and prevent or minimize the penetration of activity smoke into surrounding populated areas.

## 3. Biomass

The Forest is potentially a vast source of unused biomass. None is being presently recovered other than for firewood. Full utilization of biomass in the future would provide an excellent opportunity to eliminate energy deficits and reduce hazardous fuel loadings in the Forest.

## 4. Chaparral

The opportunity to deal with chaparral is limited because of the low net acreage in this forest type. Most chaparral stands will be left undisturbed to retain their wildlife benefits.

## 5. Diversity

The timber program will affect diversity most. Harvesting will continually change the structure and composition of Forest vegetation. Changes can be designed to improve and redistribute seral stages to benefit early, mid, and late successional wildlife species habitats. No seral stage will be altered to the point that it comprises less than 5 percent of the total vegetation composition of the Forest.

## 6. Facilities

Facilities opportunities center mainly around the Forest Development Transportation System, including roads and trails. The network will be nearly built to completion by the end of the first decade, providing access to suitable timber stands to be managed on a long-term sustained yield basis. Other roads and trails serving recreation and general purpose uses will also be substantially in place. Some portions of the Forest, however, will remain sparsely roaded or unroaded. Emphasis will shift to dispersed recreation in these natural surroundings, accessed by designated four-wheel drive roads as well as trails for two-wheel cyclers, equestrians, cross-country skiers, snowmobilers, mountain bicyclists, and hikers.

## 7. Fire and Fuels

A current plus 20 percent fire program will provide the Forest an opportunity to minimize wildfire losses to calculated tolerable limits. The public's individual safety and property will be protected. Scheduled outputs of resource goods and services will be achieved without disruption.

Prescribed fire will be employed to reduce natural and activity fuels buildup. The ability to implement new wilderness fire management policy offers the Eldorado an opportunity to utilize fire, as an additional tool, to meet wilderness management objectives. The Forest will be able to take advantage of planned and unplanned (lightning) ignitions to duplicate the ecological role of fire in the wilderness.

## 8. Fish

The Eldorado fishery has 377 miles of stream that can be improved to increase trout populations and pounds of fish. In some cases, fish releases from reservoirs can be regulated to provide more beneficial yearlong instream flows for trout -- even though total annual water volumes are reduced. The ultimate development of several proposed hydroelectric power projects will bring an attendant opportunity to enhance two story (cold water/warm water) lake fish populations and total pounds of fish available for harvest. Thus, total fishing success should occur for a greater number of people.

## 9. Forest Pests

Forest pest management will remain an integral part of the program of work. An Integrated Pest Management (IPM) approach will continue to be implemented by Forest managers to prevent or reduce pest related problems.

## 10. Fuelwood

Fuelwood demand for home heating is increasing with population growth. An upward trend in conventional gas and electric heating costs has made firewood a desirable alternative source of energy. The Eldorado anticipates being able to meet the demand for this product, but the Forest must make logging residue more available to prospective fuelwood gatherers. More innovative sources, including byproducts of precommercial thinning and other timber stand improvement activities, must be made available to the public.

## 11. Geology and Groundwater

The Forest must exercise leadership to prevent mass earth movement or unacceptable soil loss associated with future resource management activities. Completion of an Order 3 Geologic Resource Inventory will assist Forest managers in preventing erosion or major geological failures. Interdisciplinary team specialists will have the opportunity to incorporate accurate geologic data into project design when the GRI becomes available.

## 12. Historical and Cultural

Protection of historical and cultural resources is a major concern. In the past, inadequate field identification of sites and dissemination of information has led to significant impacts on cultural properties. The Eldorado will take the opportunity to reverse that trend by employing a systematic integration of inventories with evaluations, protection measures, and site monitoring with respect to ongoing resource management activities. The Forest will also initiate a public awareness program to reduce inadvertent damage that occurs through recreational pursuits or deliberate loss by vandalism.

## 13. Hydroelectric Projects

Hydroelectric development is generally compatible with management of the Forest. Once adverse impacts are successfully mitigated or sensitive environmental areas are avoided by hydro proponents, there is usually ample opportunity to design recreation, wildlife, and other resource amenities into the project. Such benefits will be brought out by continued Forest Service participation in the EIS and FERC licensing processes related to hydroelectric development. Each successive compatible project reduces energy deficits and dependence on depletable energy reserves such as coal, oil, and gas. Hydroelectric power generation obviously offers a much cleaner source of energy than fossil fuels it may replace.

## 14. Lands

Part of the lands program revolves around permitted uses that confer exclusive or incompatible uses to those that are open for general public enjoyment. In certain locations permitted use of an area or site does allow for enjoyment of non-conforming uses by the general public and other Forest users. Future accomplishment of land ownership adjustment will provide opportunity to reduce the number of special use permits that now serve the private needs of intermingled owners.

Another task that needs to be substantially completed during the first decade is the land line location (LLL) program. When backlogs are finally surveyed and posted, the Eldorado will be provided the opportunity to resolve existing boundary discrepancies and reduce potential trespass.

## 15. Law Enforcement

Field staffing lags behind law enforcement organization needs. Added emphasis on employee responsibility, improved professional training, and other management prerogatives have narrowed the gap, but the Forest organization is currently inadequate to provide a crime prevention program that measurably reduces unlawful acts against the Forest Service or National Forest visitors.

Opportunity for significant improvement exists but fulfillment seems limited. Cooperative efforts with local, state, and other government agencies will likely be maintained or strengthened. This cooperation is vital to the Eldorado law enforcement program. Forest Service internal law enforcement support services are established exclusive of planning. They are subject almost entirely to annual funding with no solid interrelationship to concurrent forest activities.

## 16. Minerals

Withdrawals will be reviewed to determine their continued need. The Forest will recommend withdrawals that should be rescinded where they are no longer warranted. In turn, some new withdrawals will be recommended, mainly to cover proposed land designations such as research natural areas and special interest areas. The Forest will be able to present a more accurate accounting of Eldorado lands that are open to mineral entry by lease and claim as a result of this review action.

## 17. Range

Range opportunities fit into three areas: (1) range condition, (2) range trend, and (3) long-term supply for forage. The Forest currently has 2,437 acres of range in poor condition. The Eldorado will implement improvement projects to restore this condition to

good before the land becomes irreversibly damaged. Another 1,605 acres are now in a downward trend that can be reversed by resting the areas from livestock grazing until they recover. Finally, a concurrent emphasis on evenaged silviculture will increase projected long-term forage supply above the present background capacity of 10,474 AUM's.

## 18. Recreation

The Forest will take the opportunity to meet both short-term and long-term demand for developed recreation. Capacity may be increased by enlarging existing sites or building new sites. The recent trend for operation and maintenance indicates that private concessionaires will operate National Forest facilities under contract. Fees commensurate with recreation amenities will be charged to visitors, but the Forest anticipates providing a quality standard of maintenance at all developed sites administered by the Forest Service, Licensee/Permittee, or private contractor.

Land managers will employ Forest Plan standards and guidelines to meet dispersed recreation demands. The ROS system of dispersed area management will form the basis for future decisions on kinds and extent of dispersed use. The Forest has the overall dispersed recreation capacity to meet long-term demand; however, people quotas as well as geographic and season-of-use controls may become more prevalent in an attempt to reduce user conflicts.

## 19. Riparian

The Forest will take the opportunity to reduce or eliminate impacts to riparian vegetation. Standards and guidelines for the streamside management zone incorporate direction that protects riparian strips 100-feet on both sides of Class I, II and III streams, lakeshores, and wetlands. Watershed improvement projects are scheduled to further protect and enhance riparian strips. Treatment and mitigation will be blended into project EA's that affect riparian vegetation, followed by monitoring and evaluation of the results of project activities.

## 20. Sensitive Plants

Eight sensitive plant species are known and two sensitive plant species are suspected to occur on the Forest. The Eldorado will afford them protection under law to ensure that these species do not become threatened and endangered. Species management guides will be prepared for all of these species.

## 21. Soils

The impacts on the soil resource will become greater as the level of uses of Forest lands and products increase. The potential for adversely effecting soil productivity will be reduced through proper evaluation of present soil conditions to determine if soil charac-

teristics are compatible with the planned activity. Standards and guidelines for soil resource protection will be utilized to minimize potential impacts within acceptable levels. Opportunities to improve soil productivity on impacted ground will also be identified and treated.

## 22. Special Areas

The Eldorado proposes an ambitious contribution to the establishment of special areas. Two candidate RNA's are recommended for approval by the Chief of the Forest Service and two other are proposed for nomination by the Forest Supervisor. Nine geological, botanical, and archaeological special interest areas have been identified for approval by the Regional Forester under authority delegated to him by the Chief. Two trails totaling 32 miles are candidates for national recreation trail designation. Adoption of the Forest Plan affords the opportunity to preserve the special features which make these candidate areas and trails unique.

## 23. Timber

A prime opportunity resulting from intensive timber management practices is the replacement of many poorly stocked stands with fully stocked stands of thrifty confers that will obtain an optimum growth rate. Mortality losses will be recovered at the same time. The Forest will gradually become regulated on suitable timber sites.

The Forest will provide a continuous supply of wood fiber to the forest products industry and ultimately the consumer. Vegetation manipulation by timber harvest practices provides many fringe benefits to other resources such as creating suitable wildlife habitat and providing road access for recreation.

Fuelwood demands will be met, and biomass recovery shows favorable but untested opportunity.

## 24. Visual

Current Visual Resource Management technology offers an opportunity for the Forest to intensively manage commodity resources without significantly altering the landscape. The Forest will establish and meet a series of Visual Quality Objectives which assure that visitors will be afforded views of natural looking landscapes seen from Sensitivity Level 1 and 2 roads, trails, streams, and areas of concentrated public use.

## 25. Water

The Forest will continue to produce high quality water for recreational, agricultural, industrial, and domestic purposes. The Best Management Practices (BMP's) will continue being implemented on the Forest to insure production of this high quality water. See

Appendix F Water Quality Management for a listing of these (BMP's). Hydroelectric development will tend to dominate Forest activities in the first decade of the Plan. The Forest Service will work jointly with proponents to take advantage of opportunities to develop this energy source to the maximum extent compatible with other resource use and protection of the environment.

The ability to increase water production is somewhat limited. Snowpack management in red fir timber stands and other direct improvement projects to watersheds and streams will provide modest increases in the water quantity output.

## 26. Wild and Scenic Rivers

The Eldorado will nominate one candidate wild and scenic river. The Rubicon River will be nominated to the national system.

The North Fork of the Mokelumne above Salt Springs Reservoir is being studied and a recommendation for designation, if any, will be made in the Stanislaus National Forest Plan. That portion of the river on the Eldorado will be managed to protect its values until a decision is made.

It has been determined that the North Fork of the Mokelumne River west from Salt Springs Reservoir to Tiger Creek Reservoir is eligible for inclusion in the national system. A suitability study will be scheduled and undertaken to evaluate alternative courses of action for this stretch of river.

## 27. Wilderness

The Caples Creek area was carried forward in the 1984 California Wilderness Act as a Further Planning Area. This Act designated nearly 20,000 acres of additional Mokelumne Wilderness inside the boundary of the Eldorado. All other RARE II roadless areas are released for multiple use management under the terms of the California Wilderness Act.

The Eldorado proposes splitting the Caples Creek further planning area into wilderness and general forest emphasis. The general Forest emphasis will provide a regulated timber harvest that contributes to the Eldorado's allowable sale quantity. If Congress designates a portion of Caples Creek as a wilderness, the Forest Service will recommend to the FERC that the proposed foottrail hydroelectric project is inconsistent with National Forest purposes; however, the project could still be permitted in the wilderness with presidential approval.

## 28. Wildlife

Wildlife opportunities are realized by performing direct habitat improvements and receiving the fringe benefits of other resource activities such as timber harvesting and prescribed burning of natural fuels. Opportunities can also be gained from acquiring lands that are key habitat for wildlife species such as deer.

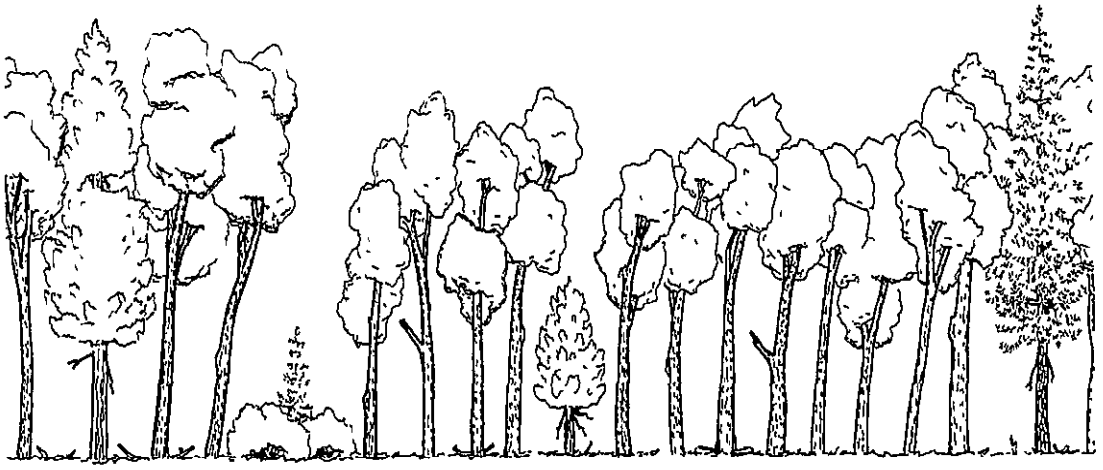
The Forest proposes all of these means to maintain viable populations of native species. Management indicator species will be monitored when land altering activities take place. A sufficient proportion of Forest vegetation will be retained in each seral stage to assure viability.

Recovery plans will be implemented and site specific management plans will be prepared for the threatened and endangered bald eagle and peregrine falcon. Management for two sensitive species, the spotted owl and goshawk, will be carried out at 32 designated spotted owl habitat areas and 51 designated goshawk habitat areas.

## 29. Woodland

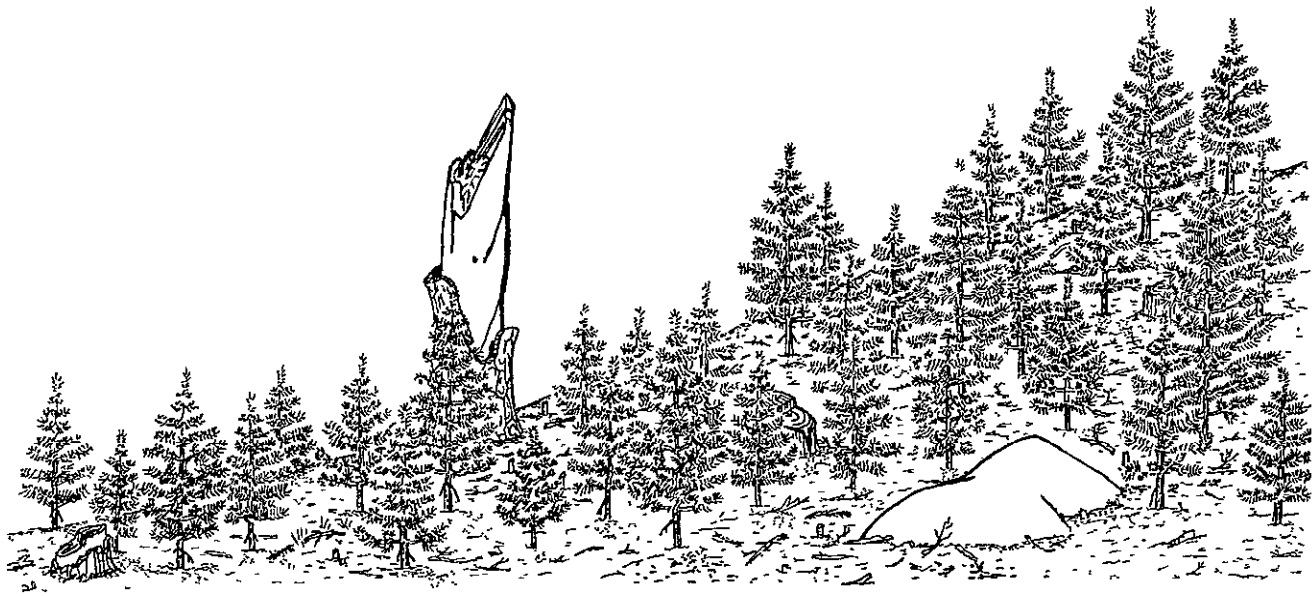
The most important concern about woodland is the possible conversion of California black oak to conifer forest following regeneration cutting of timber stands. Retention of black oaks, especially in deer winter range, is needed for mast production. An additional concern relates to potential loss of conifer timber growth if black oaks are retained in the canopy of the mixed conifer strata.

The Forest will employ standards and guidelines that provide a stocking level requirement for black oaks.



Chapter IV

# Management Direction



# IV. Management Direction

## A. Introduction

Chapter IV outlines the direction for managing the Eldorado. Management direction makes the Plan functional and enables its users to perform on-the-ground activities. Forest personnel apply management direction to attain long-term program results and achieve a desired future condition for National Forest land.

### 1. Concept of Management Direction

Management direction provides the means to implement the Forest Plan. Direction is the key to dealing with planning issues and translating long-term forest goals and objectives into measurable short-term production of goods and services from the Forest.

Management direction descends several levels of development. Initially direction is formulated on a national plane. Federal laws and regulations serve as primary sources of management direction. Forest planning nationally is guided by such laws as RPA, NFMA, and NEPA. Each of these laws are expanded under various Codes of Federal Regulations (CFR's) that correspond to them. State laws for water and air quality must be met on federal lands.

The Forest Service further interprets these forms of national direction into service-wide policy. The policy for land and resource management planning is stated in the 1920 section of the Forest Service Manual (FSM). Social analysis policy for planning is found in 1970 FSM.

The next sequential level of agency direction appears in Forest Service Regional Guides described in the NFMA. The Eldorado gets further direction from both the Pacific Southwest (R-5) Regional Guide and the LMP Direction supplement to the Regional Guide. This direction contains detailed instruction to forests on preparation of individual plans.

The Plan itself conveys all of these higher orders of direction to Chapter IV, where it is displayed in the form of goals, objectives, management emphasis, practices, standards, and guidelines. *Therefore, the concept of management direction is that it becomes* more refined as it reaches closer to the land. Broad national direction funnels down to site-specific direction for the Eldorado National Forest.

### 2. Plan Implementation

Forest plan implementation is activated by an annual planning, programming, and budgeting (PPB) process. PPB is a system that is external to the Plan, but it converts long-range planning goals and objectives to fiscal year programs and budgets. Congressional

appropriations to the Eldorado help establish management attainment targets for the Supervisor and District Rangers to meet the average annual outputs projected for the entire planning decade.

The negotiated annual program of work for the Eldorado is turned into an Action Plan when each fiscal year's budget is final. A District Action Plan is made up from several individual Project Work Plans (PWP's). The PWP's respond in detail to the broader program level direction in the Forest Plan. A related Program Accounting and Management Attainment Reporting System (PAMARS) provides feedback to assess managerial accountability and assist in monitoring and evaluation of the Plan.

Most of the above mentioned projects are covered by Environmental Assessments and Decision Notices. Normally Forest Plan direction is used as an umbrella for project environmental analysis. These EA's are tiered to the Eldorado EIS and Forest Plan to disclose the environmental consequences of project actions not precisely analyzed at the program level.

### 3. Direction Components

Forest management direction is divided into five descending levels of application, as follows:

Goals
Objectives
Management Emphasis
Forest Practices
Standards and Guidelines

Standards and guidelines express the most explicit direction for land managers. They are stated on either a Forest-wide basis or for individual management areas.

## B. Goals and Objectives

### 1. Goals

Forest goals attempt to describe the future condition of the land that the Forest Plan is expected to achieve. Objectives and subsequent levels of direction are aimed at accomplishing these goals. The Forest goals tie closely to planning issues described in Chapter II and comply with applicable laws and regulations. The goals of the Eldorado are as follows:

<u>Recreation</u>

* Provide a wide range of developed and dispersed recreation opportunities that meet projected demand at the end of the planning period. Public uses take priority over uses of a semipublic nature, and these in turn take priority over private uses. Stress simpler, more natural recreation experiences over dense, sophisticated developments.

Visual Resources

* Protect the most visually sensitive areas of the Forest by placing major roads, trails, streams, and areas of concentrated visitor use in scenic corridors and managed viewsheds.

Cultural Resources

* Locate, preserve and enhance representative historical and archaeological properties that typify the social and economic evolution of Forest lands and cultures.

Wilderness

* Maintain a lasting system of quality Wilderness for public use and appreciation of the unique characteristics of wilderness, consistent with preserving its values.

Wild and scenic Rivers

* Manage the Wild, Scenic, and Recreation Rivers to preserve their free flowing characteristics and protect their outstandingly remarkable values.

Special Interest Areas

* Preserve the integrity of the botanical, archeological, geological, and recreational features for which the areas were established.

Wildlife and Fish

* Maintain and enhance populations of threatened and endangered wildlife and plant species and maintain viable populations of sensitive species. Provide a diverse habitat for all species, including harvestable game fish and wildlife.

Range

* Maintain current levels of livestock grazing and take advantage of additional forage induced by even-aged timber management.

Timber

* Sustain a long-term yield of logs and other wood products by practicing the most intensive forms of timber management on the most productive sites. Increase this yield by application of high utilization standards and scientific silvicultural growth techniques.

Pest Management

* Employ an integrated pest management program to minimize losses from forest pests and aid in reforestation and timber stand improvement.

Geology and Groundwater

* In areas identified as susceptible to slope instability, analyze risks of management activities so as to avoid initiation or acceleration of slope movement and to protect human safety and Forest resources.

* Prevent degradation or groundwater quality and develop groundwater sources to meet domestic, livestock and wildlife needs.

Soil, Water, and Air

* Conserve or improve the inherent long-term soil productivity through the incorporation of soils information into land management decisions and through soil quality monitoring.

* Protect streams, lakes, wetlands and the riparian vegetation that surrounds them. Establish a permanent Streamside Management Zone to furnish shade, ground cover and natural environmental elements, which maintain high water quality and enhance fish and wildlife habitat. Limit cumulative disturbing impacts on watershed within the Forest.

* Induce moderate increased in water yield by direct watershed improvement projects, meadow rehabilitation and expansion projects, and snowpack manipulation associated with timber harvest practices in true fir timber stands.

* Conduct all Forest activities affecting air quality to meet airshed standards established by the California State Air Resources Board.

Energy

* Provide for energy efficiency in management of government buildings, facilities, and vehicles.

* Develop the potential to produce wind and biomass energy.

* Facilitate permitting of hydroelectric and other new energy development that reasonably protects all resources.

Minerals

* Cooperate and participate with mineral lessees, claimants and permittees in the development of mineral resources under the laws and regulations that govern them.

* Develop and maintain a materials source inventory for Forest uses.

Lands

* Seek optimum landownership patterns by means of land adjustment in order to reduce problems related to intermingled private lands.

Human Resources

* Utilize human resource programs to meet equal employment opportunity and affirmative action goals both through concerted community outreach and as employment contacts.

Fire

* Provide a sufficient level of fire protection and treat natural and activity fuels to assure a continuous flow of projected outputs and amenities from the Forest.

Transportation

* Develop and maintain the Forest transportation system for the through traveling public, while providing safe, efficient routes for recreationists.

Facilities

* Build and maintain fire and other (FA&O) facilities to serve resource, and support program needs. Make them functional, energy efficient, and attractive to the public.

* Remove or replace unsafe, obsolete facilities.

Research

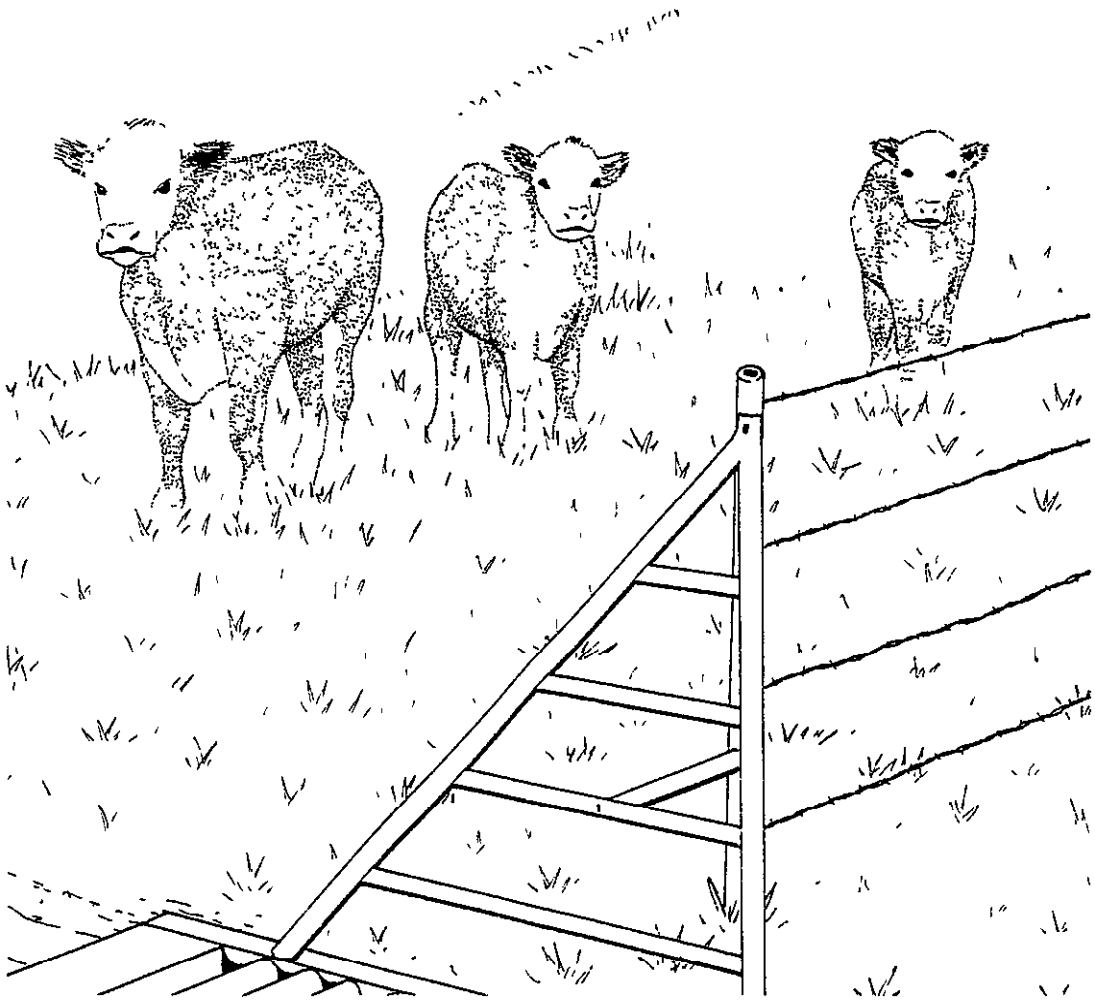
* Provide opportunities for baseline ecological research in the Station Creek, Peavine, and Snow Canyon Research Natural Areas.

Budget

* Produce Forest goods and services in the most cost efficient way consistent with providing net public benefits.

## 2. Objectives

Objectives are the average annual outputs that are calculated to accomplish planning goals and address the planning issues. Table IV-1 itemizes the average annual outputs for decades one and two for the resource elements of the Forest Plan. These outputs can be compared to the 1982 base year outputs and the 1990 and 2000 RPA program targets.



The RPA targets shown on Table IV-1 are derived from an assessment of the Forest's capability and suitability for producing resource outputs. The numbers represent the Eldorado's share of meeting national targets published in the 1980 RPA Program. Attainment of these targets was a prime consideration in formulation of the Plan. The output data gives a graphic evaluation of how the Plan meets RPA goals for decades 1990 and 2000.

The base year in Table IV-1 is 1982. Targets are expressed in average annual outputs per decade. A 50-year planning horizon, comprised of 5 decades or planning periods, was used to estimate outputs. The first decade lists short-term planning objectives, and the figures are firm unless the Forest Plan is revised or amended. The next decade projects long-term planning objectives, which may be reconsidered when a subsequent 10-year Forest Plan is prepared.

Recreation

The Forest Plan will substantially exceed RPA targets for Developed Recreation throughout its 50-year planning horizon. Developed Recreation includes RVD use attributed to both the public and private sector. The Forest Recreation Information Management (RIM) records show that the Eldorado has a sufficient number of potential sites available to handle the Forest Plan's increased RVD output over RPA, although some adjustments in types of use may be necessary. A significant portion of the public sector facilities will be associated with reservoirs to be built for upcoming hydroelectric projects. The private sector RVD increase is generally related to development of potential downhill ski facilities. Overall, the Forest will boost Developed Recreation by 1,019.4 MRVD's from the 1982 Base Year to the end of the first decade of the Forest Plan.

Dispersed Recreation will increase more gradually over the 50-year planning horizon but will also exceed RPA targets in every decade. Dispersed Recreation includes Wilderness RVD's and WFUD's. The Eldorado has sufficient dispersed area acres available to accommodate the total RVD use, but individual types of Dispersed Recreation visitors may be competing with others for popular segments of the Forest, both winter and summer. This competition will lead to further regulatory policy to mitigate user conflicts. Dispersed Recreation shows an increase of 245 MRVD's from the 1982 Base Year to the end of the first decade.

Other measures of recreation outputs not tracked in the RPA Program are Visual Quality, Wilderness, Wild and Scenic Rivers, Research Natural Areas, and Special Interest Areas. The Visual Quality Index (VQI) is 39.41 for the first decade.

Wilderness acres have increased from 82,565 in the 1982 Base Year to 102,059 in the first decade of the Forest Plan. The additional 19,494 acres resulted from Congressional designation of the Mokelumne

Addition in the California Wilderness Act of 1984. An additional 13,694 acres of the Caples Creek Further Planning Area is recommended for addition to the wilderness system. If Congress designates this area as wilderness, the total wilderness on the Eldorado will be 115,753 acres.

The Forest Plan recommends designation of the Rubicon River as a Scenic River. The North Fork of the Mokelumne above Salt Springs Reservoir is being studied and a recommendation, if any, will be made in the Stanislaus National Forest Plan. That portion of the river on the Eldorado will be managed to protect its values until a decision is made. The Forest did not previously have any designated Wild and Scenic Rivers, so there would be an increase of 17,881 acres over the zero acres in the 1982 Base Year. The North Fork of the Mokelumne, if designated by Congress, will be shared with the Stanislaus National Forest. The river is located entirely inside the Mokelumne Wilderness on the Eldorado portion. Further study of the North Fork of the Mokelumne below Salt Springs Reservoir is recommended to determine suitability for inclusion in the Wild and River Scenic River System.

The Forest Plan also recommends establishment of two Research Natural Areas where none previously existed on the Forest. Peavine and Station Creek RNA's total 1,862 acres, representing an increase over the zero acres in the 1982 Base Year. Two RNA's (Snow Canyon and Middle Mountain) are also recommended for study for possible inclusion in the system.

Nine Special Interest Areas will be established with approval of this Plan. Again, none of these types of areas previously existed, resulting in an increase of approximately 20,623 acres over the zero acres in the 1982 Base Year. National Recreation Trails will increase by 32.0 miles, with congressional approval, over the existing 52.3 miles in the 1982 Base Year.

Wildlife and Fish

The National RPA target for Wildlife and Fish is measured in terms of acres of direct Wildlife Habitat Improvement. The Forest Plan reflects an increase in targets over RPA. The Forest Plan also shows an increase of 776 acres of direct improvement over the 1982 Base Year.

The Pacific Southwest Regional Guide identifies additional Wildlife and Fish targets, which are referenced as RPA Program Objectives. These targets are projected for 1990 only. Outputs include (1) animal numbers of Deer Habitat Capability, (2) Numbers of Cavity Nesting Birds expressed as a percent of the 1982 Base Year, and (3) thousand pounds of Resident Fish produced in Eldorado streams. The Forest will contribute a portion of the target for deer habitat capability improvement on the winter range. In some cases, a majority of the critical winter range for some herds is on private

land adjacent to the Forest where the Forest Service has no authority to manage. Winter range improvements on National Forest land will follow guidelines developed in cooperation with the California Department of Fish and Game.

The percent of Cavity Nesting Birds will gradually decrease in the long-term. A predicted 2% loss over 10-15 years is attributed to the inability to save snags in cable-logged clearcutting units. Resident Fish production in the Forest Plan increases 6.3 M pounds over the 1982 Base Year and 2.7 M pounds over the Regional RPA Program Objective.

The RPA program does not set targets for threatened, endangered, or sensitive species. However, the Forest will continue to work toward increasing populations of threatened and endangered species to meet recovery plan goals. It is anticipated that the Forest will support one pair of bald eagles and one pair of peregrine falcons within the first decade. Habitat capability will remain to support an estimated 73 pairs of spotted owls through the first decade based on the current population estimate and the effects of future timber sale activity. Habitat capability to support 51 pairs of goshawk will remain unchanged through the first decade since all 51 habitat areas identified in the 1983 survey are being protected. It is likely that additional habitat areas exist but have not been identified.

Range

The Forest Plan provides for continuing the grazing program at approximately current output levels. Adherence to Standards and Guidelines will result in increased quality of rangelands on the Forest. The Eldorado will not meet the Regional Range Production Target projected for the year 2030.

Timber

The volumes to be offered are slightly lower than RPA timber targets for the first decade. Volume Offered for Sale is to 146.5 MMBF/22.5 MMCF in the first decade and remains at that level through the next four periods. The figures are based on using a 1984 land-satellite timber inventory, which replaced the conventional aerial photo inventory used for the 1978 Eldorado Timber Management Plan. The land-satellite inventory much more accurately reflects standing volumes.

Timber Stand Improvement acres increase to a high of 8,600 in the second decade. Both figures are substantially above the RPA targets of 1,556 acres for the Year 1990 and 1,597 acres for the Year 2000. The FY 1982 Base Year is 2,300 acres; therefore, output never falls below the base level.

Reforestation acres take their sharpest rise in the first decade at 4,300 acres. The sharp difference between the Year 1990 RPA target and the first Decade of the Forest Plan is the most obvious increase, representing a rise of 2,510 acres per year. Both Timber Stand Improvement and Reforestation acres reflect a management shift to even-aged silviculture on suitable timber lands.

Cords of Firewood and cubic feet of Biomass are not RPA targets. However, the Eldorado shows increases over the 1982 Base Year for both of these timber products in the Forest Plan.

Pest Management

Pest Management does not have an RPA target. Activities tie to the support given to other Eldorado programs by Pest Management.

Soil, Water, and Air

The Forest Plan does not meet RPA targets, which are measured by M acre-feet of Water Quality at standard and acres of Watershed Improvement. The RPA figures erroneously show Water Quality outputs that are higher than the forest is capable of producing, regardless of vegetative management or watershed improvement projects that could be implemented. This resulted from including areas of land in the base which are now administered by the Lake Tahoe Basin Management Unit. The Forest Plan does increase M acre-feet outputs over the 1982 Base Year, because limited improvements increase runoff slightly. The important factor here is that all runoff from the Eldorado will meet Water Quality objectives. This accomplishment is notable in that the Forest Plan simultaneously indicates an increase in Watershed Disturbance from the 1982 Base Year Index of 25.0 M acres. Water Quality objectives are maintained because of employment of Best Management Practices (BMP's), application of a Streamside Management Zone, and use of Watershed Disturbance requirements, which hold cumulative watershed impacts below a damaging threshold level.

The RPA Program does not identify numerical targets for Air Quality. The Eldorado will adhere to California State Air Resources Board requirements for clean air.

Energy

The RPA Program does not set targets for energy.

Geology and Groundwater

The RPA Program does not set targets for geology and groundwater.

Special Areas

The RPA Program does not set targets for special areas.

Minerals

The Forest Plan exceeds the RPA Minerals target. Minerals activities are measured in the RPA Program by the number of Plans of Operations filed annually with District Rangers. The projected outputs for the Forest Plan include Plans of Operations, Notices of Intent, and Leases and Permits issued. For this reason, 1982 Base Year and Forest Plan periodic outputs are more than 10 times greater than the 7 and 9 Plans of Operations scheduled for RPA Years 1990 and 2030. The assumption made by the Eldorado is that the enlarged numbers generated by handling all three types of minerals documents satisfies RPA projections.

Lands

The RPA Program carries a target item for Lands Purchased or Acquired by number of acres. The Eldorado National Forest was assigned zero outputs in this category by the Region. Lands Purchased or Acquired do not carry a 1982 Base Year number of outputs.

The Forest, however, has carried on an active landownership adjustment program for several years and expects to continue consolidating intermingled private lands and disposing of scattered, unmanageable lands by donation, purchase, and exchange. Therefore, the Plan lists acres of Land Acquisition to be obtained mainly from Land and Water Conservation Act (LWCA) fee collection purchases of eligible recreation lands and planned exchanges. Outputs average about 150 acres annually during the planning period.

Fire

Fire is defined as Protection under RPA terminology. Targets are measured in acres of Fuel Treatment. Both treatment of Natural Fuels and Activity Fuels is counted. The Forest Plan again significantly exceeds the RPA targets of 2,500 acres for the Year 1990 and 2,600 acres for the Year 2000. The first decade produces 7,100 acres of Fuel Treatment annually. The output level tapers off slightly in the second decade to 4,900 acres.

Expected Wildfire acres are not an RPA target. Implementation of an "Current Plus 20 percent" Fire Program in the Forest Plan results in an initial drop in Expected Wildfire acres burned. The first decade shows 727 acres in all Fire Intensity Classes as opposed to 1,072 acres in the 1982 Base Year. Burned acres then increase to 744 acres in the second decade. While the Fire Program remains the same, the increase in Expected Wildfire acres burned is attributed to the steady change of the forest condition to a much greater distribution of younger tree age-classes.

The fire management program will emphasize the current program with approximately 18 percent of the program budgeted for prevention, 5 percent for detection, 47 percent for initial attack, 11 percent for air support, and 19 percent for fuel treatment. This program mix will then be given added strength and depth with an additional 20 percent increase in funding.

Transportation

The Forest Plan exceeds RPA targets for Road and Trail Construction and Reconstruction. The RPA targets are measured in terms of combined construction/reconstruction miles. The 1982 Base Year shows a total construction/reconstruction program of 120 miles of road, while the RPA targets are 12 miles for Year 1990 and 18 miles for Year 2030. Annually, the Forest will handle 106 combined miles in the first decade, 42.8 miles of which are scheduled for construction. The miles of new Road Construction then drop to 3.4 miles in the second decade, because the Eldorado Transportation Development System becomes substantially complete in the next 10 years. On the other hand, Road Reconstruction is scheduled at 50-60 miles per year over the long-term, reflecting an active upkeep and improvement program for existing roads. The majority of all roads constructed or reconstructed serve the timber program in the General Forest Zone and are not located in the High Country.

The Forest Plan gives emphasis to the trail program, stressing extensive new construction in the first decade to complete the system early in the planning horizon. The overall trail program exceeds RPA targets and is an increase over the 1982 Base Year. Development includes foot, stock, and motorized trails of less than 40-inch tread width. Part of the miles of new construction will be devoted to short loop trails in the General Forest Zone.

Facilities

The RPA Program does not set targets for facilities. Most Forest Service Dams and Reservoirs will remain status quo in the long-term. The number of Forest Service owned Administrative Sites will reduce from 17 to 13, while Leased Sites will reduce from 4 to 2.

The most notable feature listed under Facilities is the number of Private or State/Local Dams and Reservoirs. These will climb significantly in quantity because of the large number of major and minor hydroelectric projects proposed to be built on the Eldorado. Many of these are large-scale projects entailing high dams backing up reservoirs of 1,000 acres or more of surface area.

Research

The Research outlook for the Eldorado is listed in Forest Plan Appendix B, Research Needs and Technical Planning Needs.

Human Resources

The Forest Plan nearly triples RPA Human Resource targets for Program Enrollees. The RPA Program lists 14 individuals for each of the Years 1990 and 2000. The 1982 Base Year is 33 individuals, while the Forest Plan raises total Program Enrollees to 37 per year.

Budget

The Forest Plan generally exceeds the above RPA targets, with most budget levels being less than those projected by the RPA Program. The measure is Total Cost in millions of dollars. The Eldorado appears to be operating quite efficiently by producing more outputs at a lower Total Cost than forecast by RPA. The first decade Forest Plan annual budget is very close to meeting RPA at $17.6 MM versus $17.1 MM. Then the Forest Plan budget dips to $14.4 MM annually in the second decade. Finally, the Forest Plan Total Cost exceeds the 1982 Base Year in the first decade and drops below the target in the second decade.

## C. Future Condition of the Forest

The future condition of the Forest can also be described by the same resource elements as goals and objectives.

Recreation

Recreation has been an important Eldorado resource in the past. It will become even more prominent in the future, because of the Forest's natural scenic and environmental attractions and proximity to major metropolitan areas.

The projected increase in developed and dispersed RVD's will saturate the Forest with visitors on peak weekends and holidays. Facilities will be built in both the public and private recreation sectors to accommodate the increased developed use. Roads and trails will be constructed to support recreation travel. Dispersed use will intensify in numbers of RVD's and purpose of visit as the interest and variety of dispersed recreation uses magnify. The local economy, which provides retail sales and services for tourism, will thrive.

Increased visitor numbers may prompt establishment of more rigid Eldorado policy or restrictions for managing recreation and other internal resource conflicts. Permit and quota systems may be set up in addition to those now in force. It appears likely that user fees will increase and charges will be expanded to cover recreation uses that are now free. Operation and maintenance of visitor facilities may be contracted to Concessionaires. "Pay as you go" will become a general theme for most forms of recreation.

Conflicts with reference to 1979 ORV Plan

After implementation of the new Forest ORV Plan in 1990, ORV use will take place almost exclusively on a trail system. The Forest will be closed to ORV use except on trails and areas specifi- cally designated as "OPEN". Extensive ORV trail construction is proposed.

The Eldorado will retain quality experiences for all classes of use on the Recreation Opportunity Spectrum. The Forest Plan, in particular, will conserve a reasonable amount of visual quality, mostly along primary roads, recreation sites, and other high use areas. Large amounts of the Forest will be maintained in a natural or near-natural state in Wildernesses; Wild, Scenic, and Recreation Rivers; Research Natural Areas; Special Interest Areas; and Primitive and Semiprimitive Nonmotorized Management Areas, which emphasize dispersed use.

Wildlife and Fish

Diversity of wildlife habitat types will be maintained in all seral stages to provide a balanced distribution of viable populations of species now found on the Eldorado. Special management requirements will perpetuate the sensitive spotted owl and goshawk species. Recovery plans will be employed to reintroduce peregrine falcons and provide habitat management to meet Forest recovery targets for peregrine falcons and bald eagles. Deer herd habitat will be managed in accordance with California Department of Fish and Game Deer Herd Plans to perpetuate this important game species.

Fishable streams will continue to meet high standards for water quality through maintenance of riparian zones, by redistribution of cattle in range management, and a reduction of timber harvest in the streamside management zone. Future hydroelectric development on the Eldorado will alter the natural flow regime. Pounds of fish, however, can increase when planned fish habitat improvement projects are completed or when regulated hydro flows provide a better year-round release of water from reservoirs into downstream fisheries. Hydro projects with storage capacity will replace stream fisheries with two-story (warm water/cold water) reservoir fisheries, offering a diversified fishing experience. Thus, the fishing experience will show a slight decrease in stream fishing and a corresponding increase in reservoir fishing.

Range

Grazing of livestock will remain at current levels. Increased forage will be produced in suitable timber areas that are regenerated under even-aged silvicultural systems. Forage grown in cutting units will generally be made available to cattle while the seedlings will be protected from trampling.

Timber

Timber management practices will progressively bring intensively managed portions of the Forest closer to future regulation. Even-aged and uneven-aged silvicultural systems will be employed on 307,615 acres of the General Forest Zone and Streamside Management Zone to produce an Allowable Sale Quantity of 137.2 MMBF per year for the next five decades. As time moves ahead an even-aged stand mosaic will clearly begin to appear in those timber stands not otherwise affected by Visual Quality and Streamside Management Requirements. Individual tree selection or group selection harvests will be practiced in the Retention Foreground view areas in Scenic Corridors and other Sensitivity Level 1 viewsheds. Uneven-aged silviculture will generally be practiced in the Streamside Management Zone, including the 100-foot riparian strips surrounding lakes and on both sides of Class I, II, and III Streams.

Openings created by clearcutting and shelterwood harvest methods will be more apparent to visitors who travel beyond the Sensitivity Level 1 view areas while in the General Forest Zone. The Forest Plan calls for 20,840 total acres of clearcutting and 18,360 total acres of shelterwood cutting in the first decade. Clearcut units may be laid out to a maximum size of 40 acres in areas where the Visual Quality Objective is Modification or Maximum Modification.

Many low sites are located in the regulated or suitable timber part of the Forest. As a rule, trees on low sites will also be removed by selection or group selection, except clearcutting and shelterwood cutting may be practiced where harvest units can be regenerated in 5 years and where long-term soil productivity can be maintained.

All other timber harvesting outside the above areas (and exclusive of designated areas where cutting is prohibited by law or regulation) is performed on an unregulated basis. Approximately 9.3 MMBF per year will be removed from 150,366 acres classified as unsuitable for regulated harvest. Very little disturbance due to timber harvesting will be noted on these acres, as most cutting methods deal with intermediate sanitation and salvage to keep the stands healthy for reasons other than timber emphasis.

Pest Management

The Eldorado will continue to employ a full range of techniques to prevent damage to the Forest, reduce pest populations, and create vegetative situations that are least susceptible to pest damage. The future Forest condition will remain healthy and visually attractive because active pest management practices will reduce resource losses and improve productivity.

Soil, Water, and Air

The amount of soil disturbing activities will continue to increase on the Forest. Timber management practices will use even-age and uneven-age silvicultural systems to bring the Forest close to regulation. In order to prevent the degradation of soil productivity, water and air quality, the Forest Plan incorporated several management requirements. Water disturbance limits, Streamside Management Zone requirements, and application of Best Management Practices are designed to maintain and improve water quality. The implementation of these measures, to the extent they reduce/preclude accelerated erosion and compaction will have synergistic benefits to the maintenance of soil productivity. Cumulative effects on watershed will be studied to keep disturbing activities below thresholds at which potential damage might occur.

Air quality attainment on the Eldorado will be largely influenced by pollutants drifting in from outside sources that are beyond the Forest's control to manage. Management activities internal to the Eldorado will adhere to rules applied by the California State Air Resources Board and the Forest Service Air Resource Management System. In general, visitors can expect to find clean air conditions over the Forest, which improves with an increase in elevation and the distance from pollution sources in the Central Valley of California.

Energy

Hydroelectric power is the primary energy resource on the Eldorado. It is a clean and relatively cheap source of energy that still has considerable developmental potential on the Forest. Each subsequent project affects the environment, and adverse consequences will have to be mitigated by the proponent. The South Fork of the American River (SOFAR), the North Fork of the Cosumnes River (CRWPA), Cole Creek (Willow Springs Water District), Bear River (PG&E), and Devils' Nose on the lower North Fork of the Mokelumne (Amador County) are major hydroelectric projects that may completed in the first two decades of the Forest Plan. Besides meeting regional and national energy needs, these large projects usually carry consid- erable recreation benefits, because Licensees are required to provide facilities for recreation use induced by such projects.

Areas with wind energy resource potential are generally situated too far from existing electrical transmission lines to make them feasible sites for wind turbines. Potential sites are inventoried but environmental effects on the Forest have never been analyzed. The likelihood for future development appears slim. Solar and geothermal do not appear to be feasible sources of energy on the Eldorado. The Forest has no known oil, gas, or coal reserves.

Minerals

Most of the Eldorado will remain open to mineral leases and claims. Statutory withdrawals are in effect for 102,059 acres of wilderness, subject to valid existing rights. The Forest Plan recommends additional withdrawals for wilderness, designated Wild and Scenic Rivers, Research Natural Areas, Public and Private Sector Developed Recreation, Winter Sports Sites, and Administrative Sites. This action would add 20,330 acres to the withdrawal total in the first decade. As potential Developed Recreation and Winter Sports sites are built, they would also be withdrawn. Eventually another 6,552 acres could be withdrawn over the planning horizon. As a result, 465,214 acres of the Eldorado National Forest, or about 78 percent of the net land base would remain open to mineral entry. Saleable mineral materials will be handled by permit on an individual case basis. Future saleable activity is unpredictable and tends to fluctuate with the minerals commodity market. However, a largely unrestricted opportunity for further development will exist over a high proportion of Eldorado lands.

On Forest use of mineral materials may increase in the 1st decade as some of the most remote and steepest (and final) portions of the Forest Transportation System are completed. Additional materials sources will be developed to provide aggregate pit run material, riprap, and borrow material for new road surfacing, on-going road reconstruction and maintenance, and watershed restoration projects.

Lands

The future landownership pattern should have fewer intermingled public and private holdings. Large interior private ownership will be consolidated into contiguous blocks. The Eldorado will dispose of many small parcels scattered outside the main western boundary of the Forest. In general, an effective landownership program will make administration of the Eldorado easier, while the purchase or acquisition of lands by exchange will add to the Forest's resource potential. Lands with high future recreation value, for instance, may be purchased with Land and Water Conservation Act funds.

The Land Line Location program will be substantially completed along common property boundaries in the first decade, making project implementation smoother and eliminating most future trespass possibilities.

As build-out on adjacent private lands progresses, requests for use of National Forest land will increase. Types of uses usually associated with private development include telephone and electric power transmission lines, roads, driveways, water supply, and water transmission lines. Efforts will be directed toward restricting the private use of public land to those cases where private land cannot meet the need and such use will not be adverse to the public interest.

The demand for electronic sites will continue, however, advancement in technology and satelite use may reduce this use in the future.

Acquisition of rights-of-way will essentially be completed by the end of the first decade, because the road and trail network will have been essentially completed by then.

There are no transportation and utility corridors designated. Future proposals to construct a corridor through the Eldorado may be anticipated; however, the potential for conflicts between such a corridor and other Forest uses are likely to increase over time.

Geology and Groundwater

In the next one to two decades, some of the more landslide prone terrain will be accessed by constructing the final portions of the Forest road system and associated temporary roads. Also, some of the steeper timbered areas will be harvested, increasingly utilizing clearcutting and shelterwood harvest methods. However, due to increased emphasis on maintaining soil productivity and water quality, application of geologic and geotechnical techniques and mitigation measures to these areas will help reduce the risks of landslide activity and keep it within acceptable limits.

More recreation areas and other sites requiring safe drinking water will be supplied by properly installed wells.

Special Areas

Nine Special Interest Areas, and five National Recreation Trails will be managed principally for their recreation use, substantially in their natural condition. The SIA's will be managed to preserve the integrity of the feature for which they were established. Research Natural Areas will be maintained in their natural condition for research, educational, and other uses.

Fire

Expected wildfire acres burned will decrease from current averages in the first two decades. The Forest Plan employs a "Current Plus 20 percent" Fire Program that is weighted to an aggressive attack (suppression) effort rather than having heavy reliance on fuel treatment practices. This program is predicated on a tolerable net resource loss limit, and will result in some large fires occurring on the landscape. Change from the present will be subtle.

The Forest Plan proposes the preparation of a Fire Management Action Plan for Desolation and Mokelumne Wildernesses. Implementation of the Fire Management Action Plans in the first decade will allow unplanned and planned ignitions in these two Wildernesses to be managed in a manner that duplicates the role of natural fire in the environment and reduces isolated heavy fuel loadings.

The Eldorado proposes to treat both natural fuels and activity fuels. The activity fuels are largely generated by timber and road construction activities. The minimum level of planned treatment in the future is 4,900 combined acres per year. The maximum level of treatment, which occurs in the first decade, is 7,100 combined acres per year. The future benefit is reduced fire hazard throughout treated areas of the Forest. An adverse future effect is that more smoke from fuels that are treated by prescribed burning will penetrate the air.

Transportation

Both the road and trail portion of the Forest Transportation Development System Plan will be substantially complete by the end of the first decade. New road and trail construction substantially decreases in the subsequent decades, meaning that the Forest will quickly have a transportation system in place to support the other resource activities to be implemented in the Forest Plan. Reconstruction will hold steady at 50-60 miles of road and 16-18 miles of trail per year throughout the planning horizon.

The future condition of the Eldorado from a transportation management standpoint is that it will be densely roaded in areas scheduled for intensive market activities such as timber harvesting and developed recreation. Other large blocks of land having a dispersed recreation, watershed, wildlife, or research emphasis will either be sparsely roaded or unroaded.

Trails normally support dispersed recreation use in these same less densely roaded areas, except that short loop trails are earmarked for construction in the General Forest Zone. These loop trails will be designed to complement intensive management practices that normally take place adjacent to them.

Facilities

Efforts will be taken to reduce the future number of administrative sites that are now needed to support projected management activities.

The number of dams and reservoirs in non-Forest Service ownership will increase in proportion to hydroelectric power development on the Forest. Placement of these facilities will not only create striking changes in the future landscape but provide many other amenity benefits for recreationists. The increase in dams and reservoirs will cause significant social, economic, and environmental impacts on the forest and result in irreversible commitment of resources on the Eldorado.

Research

Future Research activities on the Eldorado will include measurement of ecological factors in the candidate Peavine and Station Creek RNA's and in the Middle Mountain and Snow Canyon RNA's if additional

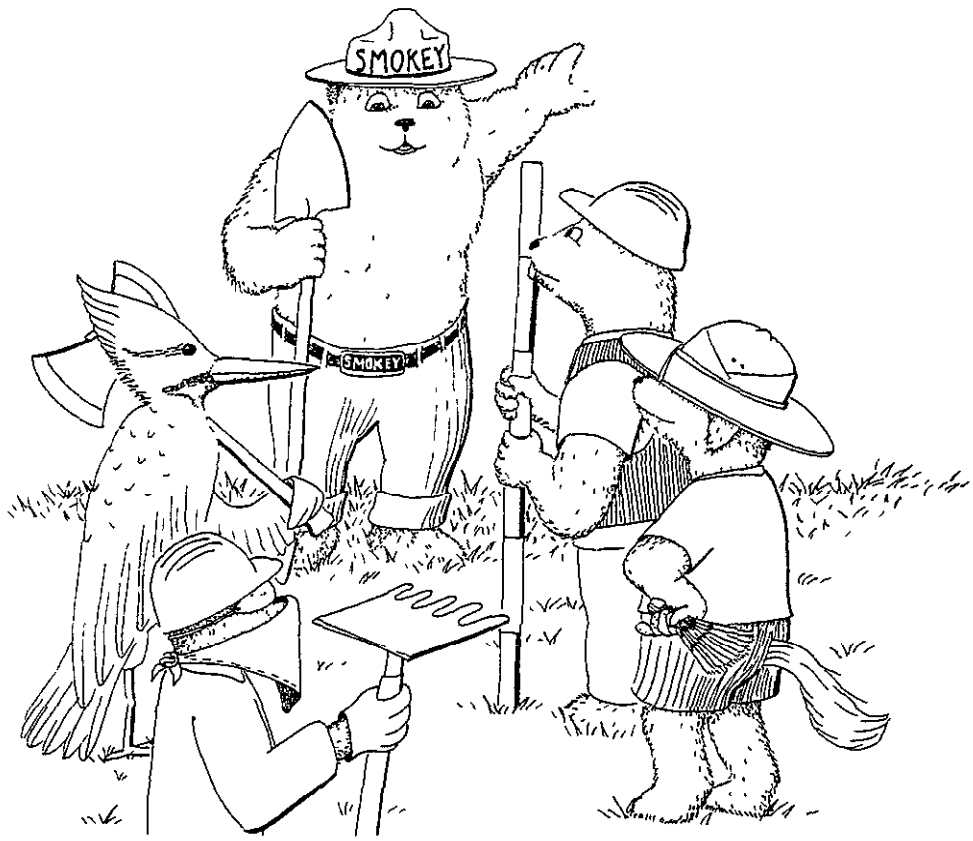
analysis results in their recommendation. These areas will serve as benchmarks for physical and environmental change over time. Non-research use of these areas will be discouraged and mineral entry will be withdrawn upon official designation.

The Institute of Forest Genetics will conduct research in conifer characteristics, cross breeding, and experimental plantings on the three sites it presently manages.

## D. Management Emphasis

The Eldorado National Forest land base is classified into six major Emphasis Zones. Emphasis Zones are geographic locations where similar combinations of resource opportunities and land use potential exist simultaneously. These zones are not normally located in one spot. Usually they are found in multiple numbers scattered throughout the Forest and vary widely in physical dimensions.

Each Emphasis Zone stresses a predominant management theme subject to treatment by integrated, compatible management prescriptions and practices. Each Emphasis Zone is distinctly different in theme and reaction to treatment from surrounding Emphasis Zones. Six different *colors are used to identify Emphasis Zones on the map. Corresponding* colors are used in the text of the plan to group the direction pages for the six Emphasis Zones, as follows:



ORANGE ZONE I - Designated

Lands set aside by legal or official designation.

Congress designates Wilderness and Wild and Scenic Rivers. The Chief of the Forest Service designates Research Natural Areas. The Regional Forester classifies Special Areas under delegated authority from the Chief. Lands in dedicated status must be managed strictly according to federal laws, regulations, or policy that apply to them.

Four areas of the Eldorado would have dual designation with Mokelumne Wilderness: (1) the Mokelumne Wild and Scenic River, 2,880 acres; (2) Snow Canyon Research Natural Area, 300 acres; (3) the Round Top Botanical/Geological Area, 3,156 acres; and (4) the Mokelumne Archeological District, 1920 acres.

If the Middle Mountain Research Natural Area is eventually designated, it will have dual designation with Desolation Wilderness.

YELLOW ZONE II - High Country

Lands that are largely undeveloped, and in some cases, unroaded.

High Country lands occur in large tracts that are generally located above 6,000 feet of elevation and are characterized by natural crest-like Sierran landscapes. Lands in this status lend themselves to dispersed recreation. High Country produces forage for livestock grazing and provides diverse habitat for wildlife species. These lands, combined with upper elevation wilderness, retain the important Sierra Nevada snowpack.

The High Country Zone was categorized using the Forest Service Recreation Opportunity Spectrum (ROS) system. The four types of Management Areas within this Zone are: (1) Primitive, (2) Semiprimitive Nonmotorized, (3) Semiprimitive Motorized, (4) Roaded Natural.

RED ZONE III - Developed

Lands with prior commitments that are managed to emphasize several kinds of developed uses.

There may be an established investment in buildings and facilities in the Developed Zone. Lands in this status include existing developed and potential recreation sites, such as campgrounds, ski areas, interpretive sites and administrative sites. Recreation facilities may be operated and maintained by the Forest Service, Special Use Permittee, Licensee, or Concessionaire. The Forest Nursery and Institute of Forest Genetics are also in the Developed Zone.

BROWN ZONE IV - Wildlife

Lands managed to maintain viable populations of spotted owls and goshawks.

The habitats of these two sensitive species are treated to provide suitable nesting and foraging ground to perpetuate their existence. Lands in this status are intermingled with the General Forest Zone.

GREEN ZONE V - General Forest

Lands that are most favorable for growth and harvest of commercial conifer species.

Lands in this status are the most intensively managed areas in the Forest. The widest range of activities and the most changes in the landscape occur in the General Forest Zone. Major tree species include sugar pine, ponderosa pine, Douglas-fir, white fir, and incense cedar. Brush fields, natural openings, oak woodlands, small meadows, and other grassy areas are routinely mixed with productive timber lands. Nonsuitable timber stands (less than 20 cubic feet per acre per year growth) are placed in a Maintenance Management Area within the General Forest Zone. Lands of high visual sensitivity are also located in the General Forest Zone. These visual corridors are in viewsheds that can be readily seen by visitors and that generally border major roads, trails, rivers, and developed recreation sites. Foreground and middleground areas viewed from the visual corridors are retained or partially retained in a natural condition.

The entire General Forest Zone is a heterogeneous mixture of several different Management Areas that are consistent with the timber emphasis.

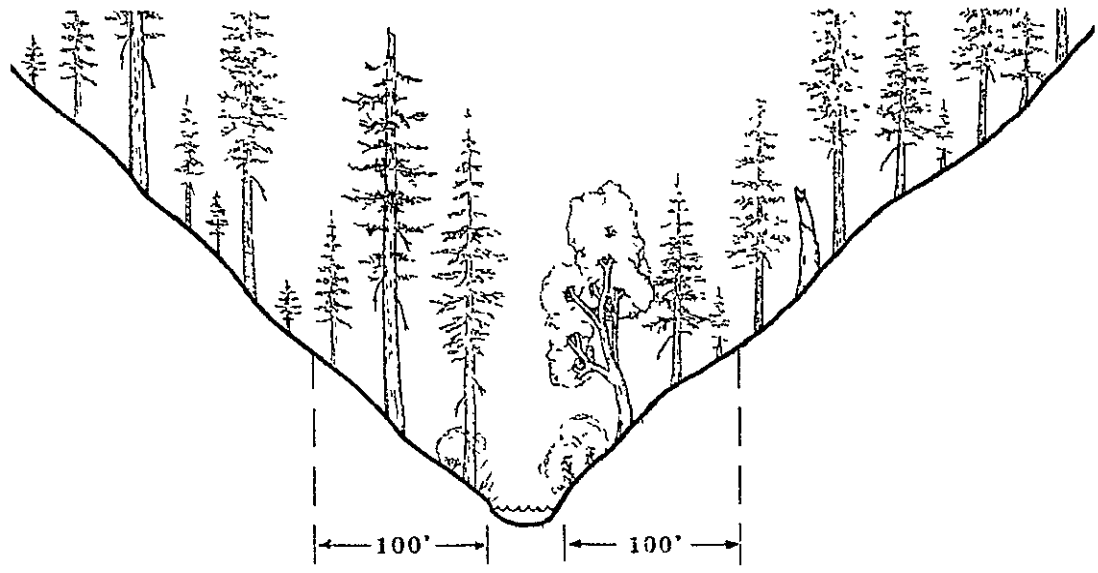
BLUE ZONE VI - Streamside Management

Lands that border lakes and streams.

Lands in this status include a 100-foot riparian strip on both sides of Class I, II, and III streams, and a 100-foot strip surrounding lakes and reservoirs. The riparian strip provides food, cover, and water for many dependent species of fish and wildlife.

The Streamside Management Zone is extended to wider limits than the riparian strip where needed to maintain the high quality of water currently yielded from the Forest. These extensions are variable land widths that are based on soil stability, percent slope, and stream class.

The Streamside Management Zone receives heavy recreation use because of the popularity of fishing and the natural visitor attraction to water.




## E. Management Areas

Emphasis Zones are subdivided into Management Areas. Management Areas are numbered subunits or map cells of the Eldorado. A Management Area Prescription is applied to each of these cells. Management Area Prescriptions are made up of compatible sets of practices aimed at producing goods, services, and environmental effects.

Management Areas are composed of both Forest-wide and individual practices. Each practice is defined by Standards and Guidelines. National Forest land inside the boundary of the Forest is included in one of the following Management Areas listed in the following Table IV-2.

TABLE IV-2

ELDORADO MANAGEMENT AREAS

| Zone | Management Area | Page Reference |
|---|---|---|
| I - Orange Designated | 1 - Wilderness | 4-122 |
| | 2 - Wild and Scenic River | 4-130 |
| | 3 - Research Natural Area | 4-137 |
| | 4 - Special Area | 4-142 |
| II - Yellow High Country | 5 - Primitive | 4-151 |
| | 6 - Semiprimitive Nonmotorized | 4-155 |
| | 7 - Semiprimitive Motorized | 4-160 |
| | 8 - Roaded Natural | 4-166 |
| III - Red Developed | 9 - Existing Recreation | 4-173 |
| | 10 - Potential Recreation | 4-179 |
| | 11 - Existing Winter Sports | 4-184 |
| | 12 - Potential Winter Sports | 4-190 |
| | 13 - Private Sector Recreation | 4-194 |
| | 14 - Administrative Sites | 4-200 |
| | 15 - Placerville Nursery | 4-205 |
| | 16 - Institute of Forest Genetics | 4-209 |
| IV - Brown Wildlife | 18 - Spotted Owl | 4-211 |
| | 19 - Goshawk | 4-217 |
| V - Green General Forest | 20 - Visual Foreground Retention | 4-221 |
| | 21 - Visual Foreground Partial Retention | 4-229 |
| | 22 - Visual Middleground Retention | 4-238 |
| | 23 - Visual Middleground Partial Retention | 4-246 |
| | 24 - High Site Timber | 4-254 |
| | 25 - Uneven-Aged Timber | 4-262 |
| | 26 - Low Site Timber | 4-271 |
| | 28 - Meadow Management | 4-277 |
| | 29 - Maintenance | 4-283 |
| VI - Blue Streamside | 30 - Streamside Management Zone | 4-287 |

## F. Forest Practices

Forest practices are management actions that achieve the goals and objectives of the Plan. Practices are grouped by Program Elements.

Certain practices apply to the whole Forest, although they may not necessarily be employed simultaneously in every Management Area. These Forest-wide Practices are normally listed only once with the implication that their scope is broad and provides general direction. However, supplemental direction, when needed, is stated in the Standards and Guidelines for the separate Management Areas.

Other practices are individual. These practices are customized for the various Eldorado Management Areas, where their combined application leads to producing desired emphasis, outputs, and environmental effects. Individual practices may be repeated in several Management Areas but do not fit all cases as do the Forest-wide kind.

Practices involve planning, inventory, and physical actions. Monitoring and evaluation of project actions is handled separately in Chapter V of the Plan. The entire list of forest practices applicable to the Eldorado is summarized in Table IV-3. The criteria used to develop practices and a full definition of each one follows the summary. Forest-wide practices are marked by an asterisk next to their title.

TABLE IV-3

FOREST PRACTICES

| Practice Number | Title | Activity Code 1/ |
|---|---|---|
| 1 | * Recreation Planning and Inventory | A01 |
| 2 | * Recreation Opportunity Spectrum - Primitive | A02 |
| 3 | * Recreation Opportunity Spectrum - Semiprimitive Nonmotorized | A02 |
| 4 | * Recreation Opportunity Spectrum - Semiprimitive Motorized | A02 |
| 5 | * Recreation Opportunity Spectrum - Roaded Natural | A02 |
| 6 | * Recreation Opportunity Spectrum - Rural | A02 |
| 8 | Research Natural Areas | A08 |
| 9 | * Cultural Resources Inventory and Evaluation | A03 |
| 10 | * Cultural Resources Protection | A04 |
| 11 | * Cultural Resources Enhancement | A04 |
| 12 | Special Interest Area Investigations | G02 |
| 13 | * Visual Resource Inventory and Planning | A02 |
| 14 | * Visual Quality Objective - Preservation | A02 |
| 15 | * Visual Quality Objective - Retention | A02 |

1/ Program Element activity codes are used in the ADVENT computer model to link practices to program budgets.

| Practice Number | | Title | Activity Code |
|---|---|---|---|
| 16 | * | Visual Quality Objective - Partial Retention | A02 |
| 17 | * | Visual Quality Objective - Modification | A02 |
| 18 | * | Visual Quality Objective - Maximum Modification | A02 |
| 19 | * | Visual Resource Improvement | A02 |
| 20 | | Developed Recreation and Visitor Information Services Site Construction and Rehabilitation | A06 |
| 21 | * | Interpretive Services Planning | A01 |
| 22 | * | Interpretive Services Management | A07, P24 |
| 23 | | Installation and Construction of Interpretive Services not on Interpretive Service Sites | A06 |
| 24 | | Developed Recreation Site Management, Public Sector | A07, P24 |
| 25 | | Dispersed Recreation Management | A08, P24 |
| 26 | * | Open Off-Road Vehicle Management | A08 |
| 27 | * | Restricted Off-Road Vehicle Management | A08 |
| 28 | * | Closed Off-Road Vehicle Management | A08 |
| 29 | | Cross-Country Skiing | A08 |
| 30 | | Wild, Scenic or Recreation River Dispersed Recreation | A08 |
| 31 | | Wild, Scenic or Recreation River Study | A01 |
| 32 | | Recreation Management - Private and Other Public Sector | A07, P24 |
| 33 | | Wilderness Inventory and Planning | B01 |
| 34 | | Wilderness Area Management | B03, P24 |
| 35 | * | Fish and Wildlife Habitat Coordination | C01 |
| 36 | | Stream Fisheries Habitat Improvement and Maintenance - Structural Improvements | C03, C04 |
| 37 | | Stream Fisheries Habitat Improvements and Maintenance - Nonstructural Improvements | C02 |
| 38 | | Lake Fisheries Habitat Improvement and Maintenance - Structural Improvements | C03, C04 |
| 39 | | Lake Fisheries Habitat Improvement and Maintenance - Nonstructural Improvements | C02 |
| 40 | | Wetlands Habitat Improvement and Maintenance | C03, C04 |
| 41 | * | Habitat Improvement - Early/Mid Successional Stage | C02 |
| 42 | * | Habitat Improvement - Old Growth | C02 |
| 43 | | Habitat Improvement - Vegetative Enhancement | C02 |
| 44 | * | Snag and Down Log Management | C02 |
| 45 | * | Hardwood Management | C02 |
| 46 | * | Meadow Vegetative Management | C02, C03 |
| 47 | | Structural Wildlife Habitat Improvement and Maintenance | C03, C04 |
| 48 | * | Recovery Species Administrative Management | C01 |
| 49 | * | Sensitive Plants Interim and Recovery Management | C03 |
| 50 | * | Administration, Inventory and Coordination - Fish, Wildlife and Sensitive Plants | C01 |
| 51 | * | Range Planning and Analysis | D01 |

| Practice Number | | Title | Activity Code |
|---|---|---|---|
| 52 | | Range Management | D07 |
| 53 | | Range Improvement - Nonstructural | D03, D04 |
| 54 | | Range Improvement - Structural | D05 |
| 55 | | Range Improvement - Structural Maintenance | D06 |
| 56 | * | Timber Program Administration | E00, E06, E07, P24 |
| 57 | * | Compartment Examination | E03 |
| 58 | | Clearcut Cutting Method | E01 |
| 59 | | Shelterwood Cutting Method - Seed Cut | E01 |
| 60 | | Shelterwood Cutting Method - Removal Cut | E01 |
| 61 | | Intermediate Cutting Method - Sanitation and Salvage | E02 |
| 62 | | Intermediate Cutting Method - Thinning | E02 |
| 63 | | Intermediate Cutting Method - Predominant Removal | E02 |
| 64 | | Selection Cutting Method | E01 |
| 65 | | Special Cutting - Streamside Managememt Zone | E02 |
| 66 | | Special Cutting - Other | E02 |
| 67 | * | Snowpack Cutting Method | E02 |
| 68 | | Low Site Stand Maintenance | E02 |
| 69 | * | Ground Based Harvest System | E01, E02 |
| 70 | * | Cable Harvest System | E01, E02 |
| 71 | * | Skyline Harvest System | E01, E02 |
| 72 | * | Special Harvest System | E01, E02 |
| 73 | * | Artificial Stand Reestablishment | E04 |
| 74 | * | Natural Stand Reestablishment | E04 |
| 75 | | Tree Improvement | E09 |
| 76 | | Nursery | E08 |
| 77 | | Release and Weeding | E05 |
| 78 | | Precommercial Thinning | E05 |
| 79 | * | Fuelwood | E07 |
| 80 | | Christmas Tree and Miscellaneous Forest Products | E07 |
| 81 | * | Water Yield Improvement | F03 |
| 82 | * | Runoff Regulation | F03 |
| 83 | * | Watershed Maintenance and Rehabilitation | F03 |
| 84 | * | Water Resource Management | F04 |
| 85 | * | Water Rights Use/Management | F07 |
| 86 | * | Soil Support Services | F01, F02 |
| 87 | * | Soil Resource Maintenance and Improvement | F03 |
| 88 | * | Minerals Management - Locatables | G03, G05, G06 |
| 89 | * | Minerals Management - Leasables | G03, G05, G06 |
| 90 | * | Minerals Management - Mineral Materials | G06 |
| 91 | * | Geologic Inventory and Evaluation | G01 |
| 92 | * | Geologic Technical Investigations | G02 |

| Practice Number | Title | Activity Code |
|---|---|---|
| 93 | * Withdrawals and Revocations | G01 |
| 94 | * Land Adjustments | J12, J13, J15, J16, J17 |
| 95 | * Acquisition of Rights-of-Way | J18 |
| 96 | * Special Use Management - Nonrecreation | J01 |
| 97 | * Right-of-Way Grants - Roads and Trails | J18 |
| 98 | * Power Related Licenses and Permits | J03 |
| 99 | * Property Boundary Location and Marking | J06 |
| 100 | * Timber Access Road Development - Construction and Reconstruction | L01 to L14 |
| 101 | * General Resource Access Road Development - Construction and Reconstruction | L01 to L13 |
| 102 | * Transportation Management - Roads Open | L19 |
| 103 | * Transportation Management - Roads Regulated | L19 |
| 104 | * Transportation Management - Roads Closed | L19 |
| 105 | * Transportation Management - Road Obliteration | L19 |
| 106 | * Trail Construction and Reconstruction | L21 to L24 |
| 107 | * Trail Construction and Reconstruction - Special Purpose | L21 to L24 |
| 108 | * Transportation Management - Trails | L20 |
| 109 | Fire, Administration and Other (FA&O) Facility Construction and Reconstruction | L24 |
| 110 | Fire, Administration and Other (FA&O) Facility Operation and Maintenance | L25 |
| 111 | * Fire Management | P01 to P10, P24 |
| 112 | Activity Fuels Management | P11 |
| 113 | Prescriptive Fire Management | P14 |
| 114 | Natural Fuels Management | P12, P10, P14 |
| 115 | * Law Enforcement | P24, P25 |
| 116 | * Integrated Pest Management | P35 |
| 117 | * Air Quality Management | P38 |

## 1. Criteria

The Eldorado Interdisciplinary Team prepared the practices for the Forest Plan using the following criteria:

(a) Forest practices will address resource use and development opportunities to provide a link to issues.

(b) Forest practices will be written in sufficient detail to set long-range direction in the Forest Plan for each resource activity or land assignment.

(c) Forest practices will be technically sound, biologically feasible, and compatible with other practices when applied concurrently in the same Management Area prescription.

(d) Forest practices will be written in accordance with NFMA regulations.

(e) Forest practices, when possible, will be tied to Management Information Handbook (MIH) activity code definitions (FSH 1309.11a) to provide continuity with future program budgeting.

## 2. Descriptions

A brief situation statement for each Program Element precedes the set of practices included in that element.

Each practice is headed by number, title, and MIH Activity Code, followed by a description of the action, measure, or land treatment involved. Forest-wide practices are once again identified by a star.

# Practices

## Element A - Recreation

The Forest recreation management program is designed to provide outdoor recreation opportunities for visitors to the Eldorado. This element includes all practices necessary to protect, administer, and develop recreational opportunities so that the Forest contributes its appropriate share of recreation in a manner compatible with other resource values. It also covers protection, management, and development of trails for public access to recreation opportunities.

Recreation management provides public sector facilities (such as campgrounds, picnic sites, and trails) and permitted private sector facilities (such as ski areas). It promotes recreational development, which complements local, regional, and national needs and is responsive to energy concerns. A broad spectrum of recreational opportunities is maintained, both dispersed and developed. Guidance and expertise in the management of visual resources is given, and a continuing program of interpretive services is maintained. A further responsibility involves cultural resources, which are protected by law and are recognized as an integral part of the total land and resource management program.

| Practice Number | Title | Activity Code |
|---|---|---|
| 1 * | Recreation Planning and Inventory | A01 |

Recreation Inventory Management (RIM) sampling and reports. Recreation planning and inventory. Off-road vehicle (ORV) use planning and inventory. Officially designated area (except Wilderness) planning and inventory, including National Recreation Areas, National Recreation Trails, Wild and Scenic Rivers, and many Special Areas of botanical, historic or scenic interest.

2 * Recreation Opportunity Spectrum - Primitive A02

Areas managed to meet the ROS objective of Primitive, characterized by an essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other area users is minimal. The area is managed to be essentially free from evidence of man-induced restrictions and controls. Motorized vehicle use is not permitted except where Forest Supervisor approval of an escaped fire situation analysis authorizes entry.

3 * Recreation Opportunity Spectrum - Semiprimitive Nonmotorized A02

Areas managed to meet the ROS objective of Semiprimitive Nonmotorized, characterized by a predominantly natural or natural-appearing environment of moderate to large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but they are subtle. Permanent motorized vehicle use is not permitted. Temporary vehicle use may be authorized based on special needs, but only for the duration of the project, and where roads are then obliterated. Examples of special needs are insect salvage, vehicle and equipment access supported by an escaped fire situation analysis, and placement or removal of facilities under Special Use Permit.

| Practice Number | Title | Activity Code |
|---|---|---|
| 4 * | Recreation Opportunity Spectrum - Semi-primitive Motorized | A02 |

Areas managed to meet the ROS objective of Semi-primitive Motorized, characterized by a predominantly natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but they are subtle. Motorized vehicle use is permitted, and access roads to facilitate resource management shall be maintenance level I and II local roads.

5 * Recreation Opportunity Spectrum - Roaded Natural A02

Areas managed to meet the ROS objective of Roaded Natural, characterized by predominantly natural or natural appearing environments with moderate evidences of the sights and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate but with evidence of other users prevalent. Resource modification and utilization practices are evident but harmonize with the natural environment. Conventional motorized use is provided in construction standards and design of road facilities.

6 * Recreation Opportunity Spectrum - Rural A02

Areas managed to meet the ROS objective of Rural, characterized by substantially modified natural environment. Resource modification and utilization practices are used primarily to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sound of man are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available.

| Practice Number | | Title | Activity Code |
|---|---|---|---|
| 8 | | Research Natural Areas | A08 |
| | | Management of designated Research Natural Areas to protect their undisturbed ecosystems for future research and observation of the specific plant associations for which they were nominated. Unit of measure is acres. | |
| 9 | * | Cultural Resources Inventory and Evaluation | A03 |
| | | Cultural resource inventories and cultural resource evaluations of historical districts, sites, buildings, structures, objects, or areas that may have historical, cultural, or scientific value. | |
| 10 | * | Cultural Resources Protection | A04 |
| | | Physical protection, public contact, signing, or other activities associated with protection of properties. Includes review, processing, and administration of cultural resource use permits. Can occur on only those National Forest lands containing significant cultural sites. Unit of measure is properties. | |
| 11 | * | Cultural Resources Enhancement | A04 |
| | | Analysis, and intensive research, of cultural resource properties for public interpretation or scientific or ethnic use. Can occur on only those National Forest lands containing significant cultural sites. Unit of measure is properties. | |
| 12 | | Special Interest Area Investigations | G02 |
| | | Examination of areas that possess geological, paleontological, botanical, scenic, zoological, archaeological, historical, and other features that warrant protection through Special Area classification. Unit of measure is acres. | |

| Practice Number | Title | Activity Code |
|---|---|---|
| 13 * | Visual Resource Inventory and Planning | A02 |

Developing and administering plans for visual resource projects. Includes plans prepared for resource improvement, special studies, demonstration areas, and other activities. Also covers the development or participation in project environmental analyses and rehabilitation program plans. Unit of measure is number of planned acres.

Visual Quality Inventory: Determination of inherent visual quality (variety classes) and sensitivity levels for the purpose of developing basic data and interpretations. Includes the development of inventory Visual Quality levels.

Visual Absorption Capacity: Inventory of visual absorption capacity for the purpose of developing basic data on interpretations.

Existing Visual Condition: Inventory of existing visual condition of the landscape for the purpose of developing basic data and interpretation. Provides a base from which to measure change. Unit of measure is acres.

| | | |
|---|---|---|
| 14 * | Visual Quality Objective - Preservation | A02 |

Areas managed to meet the Visual Quality Objective of Preservation. Allows ecological changes only. Management activities, except for very low visual impact recreation facilities, are prohibited. Unit of measure is acres.

| | | |
|---|---|---|
| 15 * | Visual Quality Objective - Retention | A02 |

Areas managed to meet the Visual Quality Objective of Retention. Provides for management activities, that are not visually evident. Activities may only repeat form, line, color, and texture, which are frequently found in the characteristic landscape. Changes in the qualities of size, amount, intensity, direction, and pattern should not be evident. Unit of measure is acres.

| Practice Number | Title | Activity Code |
|---|---|---|
| 16 * | Visual Quality Objective - Partial Retention | A02 |

Areas managed to meet the Visual Quality Objective of Partial Retention. Management activities remain visually subordinate to the characteristic landscape. Activities may repeat form, line, color, or texture common to the characteristic landscape, and may also introduce form, line, color, or texture, which are found infrequently or not at all in the characteristic landscape. Unit of measure is acres.

17 * Visual Quality Objective - Modification A02

Areas managed to meet the Visual Quality Objective of Modification. Management activities may visually dominate the original characteristic landscape. However, activities of vegetative and land form alteration must borrow from naturally established form, line, color, or texture so completely and at such a scale that its visual characteristics are those of natural occurrences within the surrounding area or character type. Unit of measure is acres.

18 * Visual Quality Objective - Maximum Modification A02

Areas managed to meet the Visual Quality Objective of Maximum Modification. Management activities of vegetative and landform alterations may dominate the characteristic landscape. However, when viewed as background, the visual characteristics must be those of natural occurrences within the surrounding area or character type. When viewed as foreground or middleground, they may not appear to completely borrow from naturally established form, line, color, or texture. Alterations may also be out of scale or contain detail that is incongruent with natural occurrences as seen in foreground or middleground. Unit of measure is acres.

19 * Visual Resource Improvement A05

Activities carried out on visual rehabilitation to restore facilities, lands, and resources to the visual quality objectives adopted in the approved Forest Plan. Unit of measure is acres.

| Practice Number | Title | Activity Code |
|---|---|---|
| 20 | Developed Recreation and Visitor Information Services Site Construction and Rehabilitation | A06 |

Feasibility studies and plans, preconstruction, contract administration, and construction and rehabilitation (major cost facility investment) of inventoried sites. The unit of work is the capacity of the completed site or additions of existing sites.

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|---|---|---|---|
| 21 | * | Interpretive Services Planning | A01 |

Preparation and review of interpretive service plans. Includes interpretive plans, and proposals for interpretive service projects not classified as construction or reconstruction of facilities under Practice 20.

| | | | |
|---|---|---|---|
| 22 | * | Interpretive Services Management | A07, P24 |

Administration, operation, and maintenance of Interpretive Services at:

a. Standard Management (to established standards and management objectives).

b. Low Standard Management (below established standards and management objectives).

Activity units are persons-at-one-time (PAOT); output units are recreation visitor days (RVD).

| | | | |
|---|---|---|---|
| 23 | | Installation and Construction of Interpretive Services Facilities not on Interpretive Services Sites | A06 |

Labor and materials for installation or construction of interpretive facilities not located on formal VIS sites. Planned work and costs should approximate needs shown on current Recreation Inventory Management (RIM) Facility Condition Inventory. Activity units are sites; output units are recreation visitor days (RVD).

| Practice Number | Title | Activity Code |
|---|---|---|
| 24 | Developed Recreation Site Management, Public Sector | A07, P24 |

Administration, operation, and maintenance of developed sites at:

a. Standard Management (to established standards and management objectives).

b. Low Standard Management (below established standards and management objectives).

Activity units are persons-at-one-time (PAOT); output units are recreation visitor days (RVD).

| | | | |
|---|---|---|---|
| 25 | | Dispersed Recreation Management | A08, P24 |

Management of areas for dispersed recreation that are not designated Wilderness or listed as developed sites in the RIM system. Includes administration, operation, and maintenance. Activities will make provision for protecting other resources by limiting facilities and discouraging concentrated use in sensitive areas such as meadows, old-growth timber, and identified threatened and endangered or sensitive species habitat. Activity units are managed acres; output units are recreation visitor days (RVD).

| | | | |
|---|---|---|---|
| 26 | * | Open Off-Road Vehicle Management | A08 |

Off-road vehicle snow and land travel within areas designated open. Mountain bicycle use is also covered by this practice. Modification to ORV use will be made, as needed during the life of the Plan, based on such criteria as changing use patterns, changes in equipment and technology, and evidence of resource damage. Activity units are managed acres; output units are recreation visitor days (RVD)

| | | | |
|---|---|---|---|
| 27 | * | Restricted Off-Road Vehicle Management | A08 |

Off-road vehicle use restricted to designated routes for summer or winter periods or both, or use restricted by time of year. Mountain bicycle use is also covered by this practice. Modification to ORV use will be made, as needed during the life of the

| Practice Number | Title | Activity Code |
|---|---|---|
| | Plan, based on such criteria as changing use patterns, changes in equipment and technology, and evidence of resource damage. Activity units are managed acres; output units are recreation visitor days (RVD). | |
| 28 * | Closed Off-Road Vehicle Management | A08 |
| | No off-road vehicle use allowed. Mountain bicycle use is also covered by this practice. Activity units are managed acres. | |
| 29 | Cross-Country Skiing | A08 |
| | Skiing cross-country outside of developed sites. The support facilities needed are developed parking (kept clear of snow), ski huts or shelters, and sanitation. Provision of such support facilities by commercial concessionaire is encouraged. Activity units are managed acres; output units are Recreation Visitor Days (RVD). | |
| 30 | Wild, Scenic, or Recreation River Dispersed Recreation | A08 |
| | Management of dispersed recreation inside designated Wild, Scenic, or Recreation river boundaries. Activity units are managed acres; output units are recreation visitor days (RVD). | |
| 31 | Wild, Scenic, or Recreation River Study | A01 |
| | Congressional and administrative studies and nominations for candidate Wild, Scenic, or Recreation Rivers. National Park Service, State, and private coordination for non-National Forest lands impacted by nominations. Unit of measure is miles of river studies. | |
| 32 | Recreation Management - Private and Other Public Sector | A07<br>P24 |
| | Administration of recreation-related permitted use of National Forest System lands on developed recreation sites. Includes downhill skiing and resorts. Activity units are persons-at-one-time (PAOT); output units are Recreation Visitor Days (RVD). | |

## Element B - Wilderness

Lands are designated wilderness to preserve their unique values for current and future generations. Activities such as dispersed recreation, grazing, watershed protection, and some mining will continue as long as the wilderness resource is not impaired. Desolation Wilderness and Mokelumne Wilderness have been designated by Congress. Caples Creek Further Planning Area may be considered by the Eldorado for inclusion in the National Wilderness System.

| Practice Number | Title | Activity Code |
|---|---|---|
| 33 | Wilderness Inventory and Planning | B01, B02 |
| | Wilderness inventories, preparation, and review of wilderness management plans for new and existing wilderness. Includes environmental impact statements and Congressional recommendations for candidate areas. Unit of measure is acres. | |
| 34 | Wilderness Area Management | B03, P24 |
| | Management of the wilderness resource and its use. Administration, operation, and maintenance. Activity units are managed acres; output units are recreation visitor days (RVD) for dispersed recreation, hunting, and fishing. | |

## Element C - Fish and Wildlife

Fish and wildlife management is intended to maintain and enhance plant and animal communities (including threatened and endangered species) in accordance with federal law, regional guidelines, and Forest needs. State fish and wildlife goals and objectives are incorporated through coordination with the California Department of Fish and Game.

Most opportunities for improvement of fish and wildlife habitat on the Eldorado result primarily from multiple use coordination with other management practices such as timber harvest, hydroelectric power production, water supply and flood control development, prescribed burning, and range management.

Fish and wildlife management practices are exercised through: (1) direct habitat improvement projects financed by Protection and Maintenance (P&M) dollars and Knudsen-Vandenburg (K-V) funds collected

from timber sale receipts, (2) multiple use coordination with other management functions, and (3) projects funded from other government or private sources such as county fish and game fine collections or the State Renewable Resource Development Fund.

| Practice Number | Title | Activity Code |
|---|---|---|
| 35 * | Fish and Wildlife Habitat Coordination | C01 |
| | Wildlife, fish, or plant habitat improvement and maintenance carried out by other resource activities. Treatment is considered an improvement if the net effect of the activity results in meeting a specified objective for wildlife, fish, or sensitive plants. Treatment is considered maintenance when such work, based upon biologist input, maintains existing habitat conditions or mitigates habitat losses. Much of the coordination will be accomplished through interactions with functional activities such as timber sales, fuels management, range improvement, access road location, and recreation facility design. | |
| 36 | Stream Fisheries Habitat Improvement and Maintenance - Structural Improvements | C03, C04 |
| | Activities designed to enhance cold water trout fisheries through structural treatments and maintenance. Structural improvements include watershed stabilization through streamside fencing, instream cover improvements, fishways and fish screens, construction or removal of migration barriers, removal or relocation of roads, stream bank stabilization, control of water level fluctuation, and construction of water bars and culverts to retard or direct water runoff. | |
| 37 | Stream Fisheries Habitat Improvement - Nonstructural Improvements | C02 |
| | Activities designed to enhance cold water trout fisheries through nonstructural treatments. Nonstructural improvements include improving quality of spawning gravels, removal of stream barriers, control of fish or aquatic plant populations, control of human access and fishing pressure, and enhancement of riparian vegetation. | |

| Practice Number | Title | Activity Code |
|---|---|---|
| 38 | Lake Fisheries Habitat Improvement and Maintenance - Structural Improvements | C03, C04 |
| | Activities designed to enhance warm water and cold water lake fisheries through structural treatments and maintenance. Structural improvements include fish cover developments, shoreline stabilization, migration barriers, and structures to control water levels in lakes. | |
| 39 | Lake Fisheries Habitat Improvement - Nonstructural Improvements | C02 |
| | Activities designed to enhance warm water and cold water lake fisheries through nonstructural treatments. Nonstructural improvements include fish population control, aquatic plant control, enhancement of riparian vegetation, and lake fertilization. | |
| 40 | Wetlands Habitat Improvement and Maintenance | C03, C04 |
| | Actions needed for intensive management to improve or maintain habitat for wetland species such as waterfowl, shorebirds, and predators upon these species such as bald eagle and peregrine falcon. Increase targeted wetland species through habitat management; increase overall forest habitat diversity. Improvement actions include construction of potholes and shallow marshes, development of vegetation for forage and cover, construction of nest boxes and nest mounds, information and education signing, human access control, and control of grazing. | |
| 41 * | Habitat Improvement - Early/Mid Successional Stage | C02 |
| | Manipulation of vegetation for the primary purpose of improving early/mid successional wildlife habitat. Featured species will be identified at the project level and site-specific implementation such as timing, extent, and location will be tailored to improve the habitat capability of featured species. Activities that produce early successional stages of forest, woodland, and chaparral. Actions include | |

| Practice Number | Title | Activity Code |
|---|---|---|

silvicultural treatment, prescribed burning, mechanical crushing, pruning, and approved application of herbicides. Featured species are deer, mountain quail, California quail, western bluebird, and other small game and nongame species.

42 * Habitat Improvement - Old Growth — C02

Manipulation of vegetation for the primary purpose of improving old growth wildlife habitat. Activities that maintain old growth forest habitat in a condition suitable for featured species. Actions include silvicultural treatment to maintain desired canopy closure or structure, prescribed burning, human access control, and closure or relocation of roads. Depending on requirements of featured species, uneven-aged or all-aged conditions may be maintained. Featured species are pileated woodpecker, flying squirrels, goshawk, spotted owl, pine marten, and others.

43 Habitat Improvement - Vegetation Enhancement — C02

Activities to enhance productivity of forage and cover plants for wildlife, by seeding, planting, and fertilizing. Featured species are black bear, deer, mountain quail, California quail, and other small game and nongame species.

44 * Snag and Down Log Management — C02

Activities designed to meet Regional standards and guidelines for snags and down logs. Activities designed to provide more intensive levels of snag and down log management to improve the habitat capability of featured species. Actions include inventory and survey, designation of cull trees as future snags and logs, girdling or killing cull trees to provide snags, topping cull trees to provide flat-topped snags where suitable. Informational and educational signing. Control of human access and woodcutting activities. Featured species are bald eagle, pileated woodpecker, flying squirrels, black bear, deer, goshawk, spotted owl, western bluebird, pine marten, great gray owl, and others.

| Practice Number | Title | Activity Code |
|---|---|---|
| 45 * | Hardwood Management | C02 |

Activities designed to manipulate native hardwood species to improve resource values, primarily wildlife and vegetative diversity. Desired conditions are attained in the carrying out of other activities, and by specific hardwood management projects such as regeneration, prescribed burning, and harvest for fuelwood. Featured species are deer, band-tailed pigeon, black bear, mountain quail and tree squirrels.

| | | |
|---|---|---|
| 46 * | Meadow Vegetation Management | C02, C03 |

Activities designed to improve the habitat capability of meadow-associated wildlife species through management of vegetation. Activities may include silvicultural treatment, thinning and pruning, regeneration of aspen stands, prescribed burning, planting, seeding, fertilizing, and controlling of livestock and human access. Compatible practices involving structural improvements may be necessary. Featured species are mule deer, great gray owl, black bear, trout, willow flycatcher, and other small game and nongame species.

| | | |
|---|---|---|
| 47 | Structural Wildlife Habitat Improvement and Maintenance | C03, C04 |

Activities designed to improve the habitat capability of wildlife species through structural improvements not covered in stream, lake, meadow, or wetlands habitat improvement. Actions include nest structures, den developments, water developments (small watering structures to provide drinking water for wildlife), wildlife cover developments, and management fencing. Featured species are peregrine falcon, mule deer, western bluebird, mountain quail, California quail, and other small game and nongame species.

| | | |
|---|---|---|
| 48 * | Recovery Species Administrative Management | C01 |

Activities designed to protect or improve habitat for endangered, threatened, rare, and sensitive species through administrative measures. Actions include coordination with appropriate agencies, inventories and surveys, restriction of human access

| Practice Number | Title | Activity Code |
|---|---|---|

to critical or essential habitat through road closures, special area designation, and timing of timber harvest and other management activities. Species affected are peregrine falcon, bald eagle, golden eagle, pine marten, willow flycatcher, goshawk, great gray owl, and spotted owl. This practice will take precedence over other wildlife practices.

49 * Sensitive Plants Interim and Recovery Management — C03

Activities designed to protect and restore populations of endangered, threatened, and sensitive plants. The interim phase consists of input to planning and project coordination, formal and informal consultation, synecological studies, collection control, population monitoring, and botanical investigations. The recovery phase consists of species management guides, habitat management and improvement, land exchanges and acquisition, artificial propagation or reintroductions, and population evaluation. This practice will take precedence over other wildlife practices.

50 * Administration, Inventory, and Coordination - Fish, Wildlife, and Sensitive Plants — C01

Activities designed to meet direction in the Regional Guide, legal requirements and planning direction for fish, wildlife, and sensitive plants. Actions include inventories, studies, surveys, prescriptions and plans, and coordination with appropriate agencies and other groups.

## Element D - Range

Available forage for domestic livestock on the Eldorado is comprised of permanent and transitory range. Permanent range consists of high mountain meadows and other suitable forage types generally above 6,000 feet in elevation. Transitory range is created as a direct result of management practices, primarily timber harvesting, or as a result of wildfire. Transitory range mainly occurs in the commercial timber producing zone above 3,500 feet in elevation.

Range management practices are intended to maintain and enhance forage and to provide for red meat production and give stability to the local livestock industry. Results are achieved by the management of existing permits, cooperation with range permittees and other agencies and landowners, and development and maintenance.

| Practice Number | Title | Activity Code |
|---|---|---|
| 51 * | Range Planning and Analysis | D01 |

Preparation of range allotment plans and other plans involving the management of range resources will be based on 10-year periods. These plans will determine specific objectives and alternatives to meet land, resource, watershed, wildlife, and livestock operator needs. The systematic analysis of range will primarily be conducted through condition and trend plot evaluation to update old analysis data. New data would be collected only to determine significant changes in forage availability from watershed conditions, major type conversion or change in class of livestock. Project or allotment-specific environmental documentation is included in this practice and will incorporate interdisciplinary review. Unit of measure is number of allotment plans.

| | | |
|---|---|---|
| 52 | Range Management | D07 |

Administering the range resource. Determining readiness, production, utilization, and capacity. Administering grazing permits, including compliance, grazing applications, issuing and validating permits, and working with the livestock operator in the preparation of annual operating plans. Involves coordination and agreements with other agencies, groups, and landholders in coordinated resource plans and maintaining existing plans and agreements. Out-put measure is number of permitted animal unit months (AUM).

| | | |
|---|---|---|
| 53 | Range Improvement - Nonstructural | D03, D04 |

Treatment of competing vegetative types such as timber and brush or certain undesirable weeds to improve forage production. Treatment of existing forage-producing sites to enhance production and increase animal unit months. Measures will be proposed through the environmental analysis process to ensure maintenance or improvement of watershed and wildlife conditions in addition to range forage. Only small scale non-site-disturbing activities such as fertilizing, seeding, and spot herbicide application would be compatible with a Visual Quality Objective of Preservation and a Recreation Opportunity Spectrum class of Primitive

| Practice Number | Title | Activity Code |
|---|---|---|

and Semiprimitive Nonmotorized. Specific actions include prescribed burning, mechanical control, herbicides, fertilizers, seeding, and water spreading. Subsequent treatments to maintain the desired level of forage production will also be used. Treatment will be completed through mutual agreement with livestock permittees who will share in the total costs. The unit of measure is the unduplicated number of acres treated.

54 Range Improvement - Structural D05

Development of new structural improvements to increase animal unit months, facilitate more intensive management systems and improve distribution of livestock. Structural improvements include fences, cattleguards, water developments, corrals, loading facilities, and stock trails. Cost of construction resulting in increased animal unit months will be proportioned between the Forest Service and the livestock permittee. The replacement schedule of range improvements is approximately 20 years. Generally fences would be the only range structural improvement within an old-growth habitat area. The unit of measure is the number of acres of suitable range affected by the improvement.

55 Range Improvement - Structural Maintenance D06

Maintenance of range structural improvements to continue their usefulness throughout the life of the improvement. Maintenance needs arise from snow damage, fire, theft, vandalism, and natural life expectancy. Materials to replace missing or broken facilities will be provided by the Forest Service. Labor to maintain these facilities including snow fence "put up" and "let down" are the responsibility of the permittee. Cattle guards are maintained by Forest road and trail funds. The unit of measure is the number of acres affected by the maintained improvement.

## Element E - Timber

Wood supply on the Eldorado is based upon lands capable, available, and suitable for timber production. Capability refers to timber stands that grow more than 20 cubic feet per acre per year. Availability means that the timber lands are not formally dedicated to other uses such as wilderness, research natural areas, or some

categories of wild and scenic river. Suitability means that the stands are physically adaptable to long-term timber management. Timber producing lands are classified into five major forest types: ponderosa pine, mixed conifer, true fir, subalpine, and hardwoods.

Ponderosa pine and mixed conifer types generally occur below 5,500 feet elevation. Hardwoods, in pure and mixed stands, occur throughout the entire forest; however, they are primarily significant within the mixed conifer type. True fir is found in the higher elevations above the mixed conifer type. The subalpine type is intermingled within the true fir at the upper elevations.

Timber management practices maintain or increase the optimum yield of forest products while maintaining or improving other basic resource values. They maintain or improve genetic diversity, product utilization standards, plant and animal community diversity, biomass recovery, and local fuelwood supplies. Treatments are harvesting, reforestation, and stand improvement under the principles of sustained yield, forest regulation, and multiple use. They are consistent with NFMA regulations, various sections of the Forest Service Manual, and the Regional Guide.

| Practice Number | Title | Activity Code |
|---|---|---|
| 56 * | Timber Program Administration | E00, E06, E07, P24 |

Administrative activities to protect, utilize, improve, inventory, and evaluate the timber resource. Examples are timber management plans and inventories, stand examinations and prescriptions, timber sale preparation and administration, reforestation and timber stand improvement project preparationnand administration, management of the tree improvement program, and preparation of environmental documents.

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| 57 * | Compartment Examination | E03 |

Gathering and analyzing resource information on a compartment basis for use in planning projects. Periodic intensive inventory is supplemented with the ongoing assembling and filing of information, which is obtained incidental to other activities.

This practice applies to all lands except wilderness. Unit of measure for accomplishment of completed inventory and analysis is acres in the compartment.

| Practice Number | Title | Activity Code |
|---|---|---|
| 58 | Clearcut Cutting Method | E01 |

Removal of all merchantable commercial trees within a stand in one operation. The objective of this method is to establish a new, fully stocked stand. Site preparation with planting or seeding and the saving of advanced regeneration are methods to accomplish the desired full stocking on areas clearcut. This method includes all types of clearcuts - stand, patch, and strip. New stands created are normally 5 to 30 acres in size with maximums up to 40 acres.

This cutting method is applicable to mixed conifer, ponderosa pine, and red fir forest types. It will be used in stands that have reached the calculated rotation age or in stands that are understocked and growing poorly. The unit of measure for timber offered is thousand board feet (MBF). The unit of measure for accountability is acres clearcut.

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|---|---|---|
| 59 | Shelterwood Cutting Method - Seed Cut | E01 |

Removal of a portion of a stand to open the canopy and create space for regeneration of desirable species while providing a shelter for seedlings during establishment. The stand is generally regenerated naturally. Site preparation is performed. Artificial regeneration is required if the stand has not naturally regenerated within 5 years of harvesting. Stand size created is the same as described under the clearcutting method.

This cutting method is applicable for all forest types. This method will normally be used in stands that have passed rotation age for the forest type. It will usually be applied in well-stocked stands that have sufficient number of wind-firm, seed-producing, relatively defect-free trees of desired species. The unit of measure for timber offered is thousand board feet (MBF). The unit of measure for accountability is acres harvested.

| Practice Number | Title | Activity Code |
|---|---|---|
| 60 | Shelterwood Cutting Method - Removal Cut | E01 |

Removal of all merchantable trees after successful establishment of regeneration under a seed step of the shelterwood cutting method. The overstory trees are removed as soon as possible after satisfactory regeneration of desired species is established.

This cutting method applies to all forest types that have fewer than approximately 15 merchantable trees per acre and have established regeneration of desirable species. The unit of measure for timber offered is thousand board feet (MBF). The unit of measure for accountability is acres harvested.

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| 61 | Intermediate Cutting Method - Sanitation and Salvage | E02 |

Harvesting in even-aged stands to maintain or improve net growth until the stand is regenerated. This is accomplished by removing trees that have died or are likely to die before the next harvest entry. This practice includes sanitation and salvage cutting as described in Practice of Silviculture, Seventh Edition, by Smith. There are no minimum or maximum size treatment areas. This cutting method applies to all stands where the opportunities for sanitation and salvage exist. The unit of measure for timber offered is thousand board feet (MBF). The unit of measure for accountability is acres harvested.

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| 62 | Intermediate Cutting Method - Thinning | E02 |

Periodic removal of trees in stands of less than rotation age to reduce stocking to a point where it will grow back to 90 percent of normal (as indicated in yield tables) within a specified time period. There is no minimum or maximum treatment area size.

This cutting method applies to stands on all forest types which carry stocking in excess of desired amounts. The unit of measure for accountability is acres harvested.

| Practice Number | Title | Activity Code |
|---|---|---|
| 63 | Intermediate Cutting Method - Predominant Removal | E02 |

Removal of all trees over rotation age from a stand that is composed mostly of trees between 50 and 100 years of age with scattered over-rotation-aged trees. The resulting stand is well-stocked and essentially evenaged. Minimum stand size is five acres; maximum size for prescription purposes is 75 acres.

This cutting method applies to all forest types. The unit of measure for timber offered is thousand board feet (MBF). The unit of measure for accountability is acres harvested.

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| 64 | Selection Cutting Method | E01 |

Cutting trees with the objective of producing uneven-aged stands with regeneration of desirable species. Orderly growth and development of trees throughout a range of diameter classes with a continuous yield of forest products. Trees are harvested singly or in small groups. Each harvest entry is designed to create a desired tree diameter distribution.

This type of cutting is theoretically possible on all forest types. The most probable application is to stands with desired species having similar shade tolerances. The unit of measure for accountability is acres.

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| 65 | Special Cutting - Streamside Management Zone | E02 |

Removal of trees within a Streamside Management Zone to realize timber yields. Emphasis is the protection of water quality and riparian habitat. The number and classes of trees removed depends upon the characteristics of the existing vegetation, stream class, and stream channel characteristics.

This cutting applies to all forest types within the Streamside Management Zone. The unit of measure for timber offered is thousand board feet (MBF). The unit of measure for accountability is acres harvested.

| Practice Number | Title | Activity Code |
|---|---|---|

66 Special Cutting - Other — E02

Removal of trees designated to realize timber yields while maintaining or improving other resource objectives. This can include cuttings and slash removal necessary in such areas as developed recreation sites, administrative sites, rights-of-way, and wildlife habitats for featured species. It also covers sanitation and salvage cutting on lands not suitable for timber production.

67 * Snowpack Cutting Method — E02

Cutting designed to increase the volume of useable water yield by removal of groups of trees in such size, shape, and orientation to increase snow accumulation and retard snow melt. Groups are generally one-half to two acres in size and coordinated with a permanent skid road system to facilitate removal of the groups harvested in each entry. Groups should be located to take advantage of stand conditions and shading, and consideration should be given to the next two entries.

This cutting method applies to those true fir stands above 6,000 feet that are sufficiently dense to provide shade, which is effective in delaying snow melt in the cut openings. The unit of measure for timber offered is thousand board feet (MBF). The unit of measure for accountability is acres harvested.

68 Low Site Stand Maintenance — E02

Cutting in stands on low sites, usually Dunning Site IV and poorer, where regeneration of even-aged stands is biologically impractical. Individual trees or groups are removed to maintain stand vigor, reduce mortality, and provide conditions that will result in the perpetuation of the stand by natural regeneration. Clearcutting and shelterwood cutting may be practiced where harvest units can be regenerated within five years and where long-term soil productivity can be maintained. Minimum stand size is five acres; maximum size is unlimited.

| Practice Number | Title | Activity Code |
|---|---|---|

Commercial forest types, which generally occur on these low sites, are ponderosa pine and mixed conifer. The unit of measure for timber offered is thousand board feet (MBF). The unit of measure for accountability is acres harvested.

69 * Ground Based Harvest System — E01, E02

Yarding is performed with horses, tractors, rubber tired skidders, and light flotation forwarders. The yarding system is basically ground lead with some machinery capable of producing lift to one end of the log.

The harvesting practice is usable under any cutting method within its operational limitations. It is the primary harvest practice on slopes 0-35 percent with some application on 35-50 percent slopes where special precautions are taken.

Maximum acceptable yarding distance is affected by many factors including log size, volume per acre, and terrain. Some optimal and maximum yarding distances that can be considered in planning ground based operations, listed by yarding method, are: horse 100-200 feet, 400 feet; tractor 300-800 feet, 1,500 feet; rubber tired skidder 500-1,000 feet, 2,000 feet; light flotation forwarder 700-1,200 feet, 2,500 feet.

Loading equipment used in this practice is usually rubber tired loaders requiring landings one-quarter to one-half acre in size and heelboom loaders requiring landings one-quarter to one-third acre in size.

70 * Cable Harvest System — E01, E02

Yarding is performed with a cable machine, which is not required to provide partial or full suspension of logs. This harvesting practice is limited to the clearcut cutting method and partial cutting where very light volumes per acre are removed. It includes the following cable logging systems: mobile shovel yarder, high lead, and skyline systems with-

| Practice Number | Title | Activity Code |
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out lateral yarding ability. The system has a large range of yarding distance capability from 200-600 feet for mobile shovel yarders to over 2,500 feet for some of the skyline systems, but in application, yarding distances will generally be less than 1,000 feet.

71 * Skyline Harvest System — E01, E02

Yarding is performed with a skyline cable yarding machine, which is used when necessary to maintain partial or full suspension of the logs in the corridor, providing for protection of soil and residual timber. This harvest system is capable of harvesting under any cutting method. It has lateral yarding ability without partial suspension required during the lateral yarding. The practice has yarding distance capabilities ranging from 500 feet to over 5,000 feet, but in application, distances will usually be less than 1,000 feet. The system is very sensitive to layout of landings, anchors, and payloads. This practice is usually applied only on slopes over 35 percent. Landing size generally ranges from one-third to one acre.

72 * Special Harvest System — E01, E02

Yarding is performed with a helicopter, balloon, or other specialized equipment of adequate payload to fully suspend logs from the woods to the landing.

The system is economically very sensitive to all layout factors, with volume per acre and yarding distance most critical. It provides no soil disturbance due to yarding and can be applied with any cutting method.

Special harvest can be applied to any slope class; however, steeper, inaccessible slopes are most common. Fuels management and utilization standards are difficult to meet due to high yarding costs. Landing size will vary with type of specialized yarding equipment, but in general can be expected to be two to four times that needed by other harvest systems.

| Practice Number | Title | Activity Code |
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73 * Artificial Stand Reestablishment — E04

Activities necessary to reestablish desirable tree species by artificial methods. Minimum standards for reestablishment are contained in the Regional Guide. Actions included in this practice are preparation of the planting site; planting seedlings; animal, insect, and disease control; examinations, evaluation and certification. Hand, mechanical, and chemical treatment methods are optionally available. Selection of any particular method will be made at the project level, based on a site-specific analysis of the feasible alternative methods.

This practice is applicable to all areas scheduled for regeneration, which have been deforested for some reason. The unit measure is dollar per acre for all activities necessary to reestablish the area. The unit of measure for accountability is acres.

74 * Natural Stand Reestablishment — E04

Activities necessary to reestablish desirable species primarily by natural seedfall. Some planting may be required to fill in areas where the natural seedfall does not successfully reforest the area to minimum standards. Minimum standards for reestablishment are contained in the Regional Guide. Actions included in this practice are preparation of the planting site; planting seedlings if natural regeneration is not successful within 5 years; animal, insect and disease control; examinations, evaluations and certification. Hand, mechanical and chemical treatment methods are op- tionally available. Selection of any particular method will be made at the project level, based on a site-specific analysis of the feasible alternative methods.

This practice is applicable to all areas scheduled for regeneration by the shelterwood, strip clear-cutting and selection cutting methods. It may also be applicable to special cutting in the streamside management zone, visual emphasis special cutting, and other special cutting. The practice may be applicable to those areas deforested by other activities such as wildfires and past logging.

| Practice Number | Title | Activity Code |
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| 75 | Tree Improvement | E09 |

Activities necessary to develop, maintain, and manage tree improvement areas within the Eldorado. Actions for seed orchards include preparation of the sites for seed orchards; planting seed orchard trees or rootstock; grafting; brush, grass and weed control; pollination; cone collection; irrigation; and other general maintenance. Actions for progeny test sites include site preparation, planting genetically superior trees, release and weeding, animal control, forest pest management, evaluation of seedling development, and construction of fences when necessary to meet the tree improvement program goals.

This practice is only applicable to those sites identified as seed orchards, progeny test sites, or buffer strips associated with those areas. The unit of measure is acres and the associated costs and benefits of genetic gains.

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| 76 | Nursery | E08 |

Production of seedlings for reforestation of National Forest and other federal lands. Actions include forest pest management, processing and storage of seed, the management of soil to maintain productivity over the long-term, and the production of seedlings in the numbers and quality requested by seedlot.

Organization management, facilities development, and budgeting is involved. This practice is applicable only to the Placerville Nursery.

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| 77 | Release and Weeding | E05 |

Activities necessary to reduce the effect of competing vegetation, animals, insects, and disease on the growth and development of desired tree species. Release and weeding methods such as mechanical removal, crushing, cutting, dicing, hand cutting, pulling and hoeing, and application of pesticides are considered part of this practice. Selection of any particular method will be made at the project level,

| Practice Number | Title | Activity Code |
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based on a site-specific analysis of the feasible alternative methods. The unit of measure for economic analysis purposes is dollars per acre cost to complete the release and subsequent evaluation. The unit of measure for accountability is acres.

78 Precommercial Thinning E05

Removal of surplus trees in areas with excess stocking by cutting or mowing to favor potential crop tree growth and development. Excess trees thinned do not have a commercial value because of tree size, species, composition, or access to available markets. Included in this practice are weeding, precommercial thinning, and animal, insect, and disease control. Hand, mechanical, and chemical treatment methods are optionally available. Selection of any particular method will be made at the project level, based on a site-specific analysis of the feasible alternative methods.

This practice is applicable to stands on all forest types and site classes where benefits exceed costs. The unit of measure for economic analysis purposes is dollars per acre cost to complete the thinning. The unit of measure for accountability is acres.

79 * Fuelwood E07

Activities necessary to prepare, sell, administer, and utilize fuelwood as an energy source by individuals for their personal use and as material for commercial operations. Sawlogs are not included in this practice.

This practice applies to all available vegetated land supporting biomass useable as fuelwood. Generally, the area must occur on slopes less than 35 percent and have the product available within 500-1,000 feet of an access point. The practice may apply to land steeper than 35 percent if the product is within 100-200 feet of an access point. The unit of measure for economic purposes is dollars per acre. For other accountability, it is acres.

| Practice Number | Title | Activity Code |
|---|---|---|
| 80 * | Christmas Trees and Miscellaneous Forest Products | E07 |

Activities necessary to prepare, sell, administer, and utilize Christmas trees and other miscellaneous forest products. Examples of other miscellaneous forest products are posts, rails, decorative greenery, cones, burls, and shingle bolts. This practice includes all products other than sawlogs and fuelwood.

This practice applies to all forested land. Generally, the areas occur on slopes less than 35 percent and have the product available within 500- 1,000 feet of an access point. The practice applies also to land steeper than 35 percent if the product is within 100-200 feet of an access point. The unit of measure for economic purposes is dollars per acre. For other accountability, it is acres.

## Element F - Water and Soil

The watershed program on the Eldorado has primarily served as a support function for other resource systems. It is anticipated that watershed management will receive added emphasis in the future due to the increasingly competitive demands for high quality water and to the recent developments in cumulative watershed impact methodology. This new emphasis will probably continue, and it is expected that the watershed rehabilitation and improvement program will receive even greater attention.

The watershed program is intended to promote optimum protection and management for the soil and water element, which is the base element for all of the renewable resources. Watershed management advises how other activities, including timber management, range management, recreation, mining, and energy resource management impact the soil and water resources. It also recommends where and how other resource activities can be managed to make them compatible with the soil and water resources. The various types of support provided to the other systems include planning or designing, inventories, monitoring, and administration. Where opportunities present themselves, watershed improvement measures will be implemented to improve water quality and the timing of water flow.

The soils program on the Eldorado ensures that the productivity of the land is maintained through the proper identification of soil capabilities and adherence to standards and guidelines for ground disturbing practices. The program includes developing new knowledge through special studies and surveys, providing soil protection, and when opportunities exist, soil rehabilitation, and improvement work. The soils program serves as a support function to other systems.

| Practice Number | Title | Activity Code |
|---|---|---|
| 81 * | Water Yield Improvement | F03 |

Activities implemented for the primary purpose of increasing water yield. Practices involve snowpack management in the red fir timber stands and other direct improvement projects to watershed and streams. Unit of measure is acres treated and acre-feet of runoff yielded.

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| 82 * | Runoff Regulation | F03 |

Activities implemented for the primary purpose of regulating the timing of snowmelt runoff and preventing surface runoff. The objective is to alter the timing of snowmelt in order to deliver runoff at a more opportune time, either by modifying the vegetative arrangement or using structures. A companion objective is to reduce surface runoff from barren soils and increase storage capacity of alluvial areas by mulching, revegetation, and gully stabilization. Vegetative modification includes group selection and strip cutting in relatively dense timber stands, and planting. Structures include snow fences, dams, gully plugs, head-cuts, and water spreading devices. The optimum areas are in the snowpack zone, which is generally above 6,000 feet; extensive soil areas with poor ground cover; and alluvial soils that are gullied. Unit of measure is acres treated and acre-feet of runoff regulated.

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| 83 * | Watershed Maintenance and Rehabilitation | F03 |

Activities designed for the purpose of maintaining and improving watershed conditions. Actions include erosion treatment, water flow improvement (including overland flow), channel stabilization, and sediment control measures. Some specific applications include revegetation with grasses, trees, and shrubs, along with special microclimate treatments like mulch, matting, and drilling. Units of measure are acres treated, and acre-feet of improved water quality.

| Practice Number | Title | Activity Code |
|---|---|---|
| 84 * | Water Resource Management | F04 |

Activities designed to prevent, reduce, or regulate the amount of pollution generated by nonpoint sources. This practice includes the "Best Management Practices" listed in the R-5 Water Quality Handbook and other resource practices that may be specific to the Eldorado. It involves input to the NEPA Planning Process, project implementation, and developing and administering plans for soil and water improvement projects. This practice also assesses the cumulative watershed effects of land disturbing activities. Third and Fourth Order Watersheds (2-30 square miles) will be analyzed and monitored to establish the threshold at which unacceptable damage will occur. The areas of option are all resource activities that disturb watershed conditions, generate pollution, or use water on either a consumptive or nonconsumptive basis. The units of measure are projects supported.

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| 85 * | Water Rights Use/Management | F07 |

This activity includes all work associated with establishing an inventory of current water uses, water requirements, and water rights, along with processing applications and claims, handling adjudications, and managing acquired rights. Units of measure are dollars for inventory, applications and claims filed for water rights, the number of adjudications, and the case number of acquired rights managed.

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| 86 * | Soil Support Services | F01, F02 |

Activities that support other systems including soil resource inventory (SRI), interdisciplinary input to project plans, environmental analysis (such as timber sales, recreation site development, range planning and improvement, reforestation, and wildlife habitat improvement), input to special projects developed by other systems such as road cut and fill stabilization in unusual conditions, and erosion control prescriptions for such special projects as the nursery. Soil support services are applicable to practices in other resource elements, which routinely need soils input because of special circumstances. Unit of measure is the number of case reports.

| Practice Number | Title | Activity Code |
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| 87 * | Soil Resource Maintenance and Improvement | F03 |

Planning, implementation, and upkeep of projects, which maintain or improve soil productivity. Actions include soil fertilization, reduction of compaction, soil reshaping or replacement such as remaining windrows in existing plantations, emergency burn rehabilitation, special erosion control, and soil stabilization projects. Also includes addressing the cumulative watershed impacts of vegetative management practices (primarily timber management, fuels, and road construction) on the maintenance of a watershed threshold. In identified sensitive watersheds near their thresholds, the initiation of soil maintenance and improvement projects could allow for additional land disturbance practices to occur. The unit of measure is the number of acres treated.

## Element G - Minerals and Geology

There are three categories of minerals on the Eldorado:

1. Locatables - minerals such as gold, silver, copper, zinc, chromite, lead, and tungsten occurring in both lode and placer type deposits.

2. Leasables - geothermal, oil, gas, and coal on public domain lands, and all mineral commodities on acquired lands. The only leasable potential on the Eldorado is geothermal.

3. Mineral materials - basically the common saleable varieties such as sand and gravel.

Forest practices for minerals area management are designed to allow the exploration and utilization of the mineral resources. Locatable mineral entry is authorized under the 1872 Mining Laws. Leasables on the Forest include geothermal and minerals of all types on those acquired lands without public domain status. The mineral materials, or the common variety form of minerals, is the only one of three categories that is totally managed under U.S. Department of Agriculture direction (36 CFR 228, Subpart C). Because of discretionary authority, disposal of saleable minerals is practiced on a Forest-wide basis.

The Geology Resource Element on the Eldorado deals with technical assistance and inventories in support of other resources.

| Practice Number | | Title | Activity Code |
|---|---|---|---|
| 88 | * | Mineral Management - Locatables | G03, G05, G06 |

Administration of surface resources in conjunction with the development of locatable mineral resources, including plans of operations, environmental assessment or impact statement, and requirements for mined area rehabilitation. Units of measure are claims, plans, and cases.

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| 89 | * | Minerals Management - Leasables | G03, G05, G06 |

Administration of surface resources in conjunction with the development of leaseable mineral resources including plan of operation, environmental assessment or impact statement, a recommendation to U.S. Department of Interior - Bureau of Land Management, and requirements for mined area rehabilitation. Units of measure are permits, leases, and plans.

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| 90 | * | Minerals Management - Minerals Materials | G06 |

Administration of saleable (common variety) minerals materials including requirements for mined area rehabilitation. Units of measure are permits and plans.

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| 91 | * | Geologic Inventory and Evaluation | G01 |

This activity includes all work associated with in-service generated area-wide geologic studies. This practice includes such work as identification of potential development projects, identification of special interest geologic areas, delineation of geologic hazard areas, inventory of mineral materials, evaluations of aquifers and recharge areas, characterization of geologic conditions relative to potential construction projects, reconnaissance geologic mapping, surface sampling analysis, and preparation of geologic reports. The unit of measure is acres.

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| 92 | * | Geologic Technical Investigations | G02 |

This activity includes all in-service generated, site-specific technical investigations for potential development of geologic resources/projects, or in support of other resource projects in planning

| Practice Number | Title | Activity Code |
|---|---|---|

stages. This practice includes such activities as testing of potential quarry sites for quality and quantity, aquifer testing at potential camp sites, evaluation of geologic conditions and hazards on potential development sites, detailed geologic mapping, core drilling, foundation testing, pump tests, soil and rock sampling for laboratory analysis, calculations of quantities, analysis of findings relative to potential projects, and preparation of reports. The unit of measure for this activity is sites.

## Element J - Lands

The lands program on the Eldorado is a facilitating function and essentially consists of land adjustment and property management practices. The intent of the land adjustment program is to achieve the optimum land base necessary to facilitate resource management practices. The intent of the property management program is to allow permitted uses only where it is clearly demonstrated that there is no other logical alternative to use of National Forest lands. When National Forest lands are selected, permitted uses will be compatible with the Eldorado land management goals.

93 * Withdrawals and Revocations — J04

Petitions, recommendations, and reports required by the Bureau of Land Management and Federal Energy Regulatory Commission to effect withdrawals, modifications, or revocations. It also includes the periodic review of existing withdrawals. Unit of measure is number of cases.

94 * Land Adjustments — J12, J13, J15, J16, J17

Adjustment of the Forest landownership pattern by exchange, purchase, donation, transfer, and grants. It includes the disposal of scattered National Forest lands along the west boundary.

95 * Acquisition of Rights-of-Way — J18

Acquisition of rights-of-way for all types of facilities including roads, trails, cost share agreements, and scenic easements. Units of measure are cases and agreements.

| Practice Number | | Title | Activity Code |
|---|---|---|---|
| 96 | * | Special Use Management - Nonrecreation | J01 |
| | | Processing applications and administration of nonrecreation type special uses such as isolated residences, utility corridors, and electronic sites. Unit of measure is cases. | |
| 97 | * | Right-of-Way Grants - Roads and Trails | J02 |
| | | Processing applications and administration of road and trail right-of-way permits, easements, and licenses including those provided by law. Unit of measure is number of rights-of-ways. | |
| 98 | * | Power Related Licenses and Permits | J03 |
| | | Processing applications and administration of licenses and special use permits for power related activities such as dams, reservoirs, and transmission lines. Unit of measure is applications, licenses, and permits. | |
| 99 | * | Property Boundary Location and Marking | J06 |
| | | Survey, mark, and post property lines for lands administered by the Eldorado. Maintenance of land title and survey records necessary to establish boundaries. Maintenance of property lines. Units of measure are entries, miles, and corners. | |

## Element L - Facilities

The facilities program consists of roads, trails, and structures. Its intent is to adequately provide and maintain Forest facilities to support management activities and minimize negative environmental impacts.

Energy is an integral part of the facilities program. The Forest will construct, operate, and maintain facilities with a minimum amount of expended nonrenewable energy.

A mixed landownership pattern provides an opportunity for cost sharing road and trail systems, which serve both public and private lands. The systems are coordinated to provide long-term access requirements, which are cost effective.

| Practice Number | | Title | Activity Code |
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| 100 | * | Timber Access Road Development - Construction and Reconstruction | L01 to L14 |

Planning and construction of arterial, collector, or local roads necessary to access the timber resource. Roads may be constructed by timber sale purchasers or by public works contracts. These roads are located and constructed or reconstructed expressly for the most economical timber management job in conjunction with suitable measures to protect all resources.

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| 101 | * | General Resource Access Road Development - Construction and Reconstruction | L01 to L13 |

Planning and construction of arterial, collector, or local roads necessary to facilitate other than timber resource development and protection. These roads will be constructed or reconstructed for economical resource management and safe general public use in conjunction with suitable measures employed to protect all resources.

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| 102 | * | Transportation Management - Roads Open | L19 |

Open use achieved through permitting motorized access on all arterials, collectors, and local roads. Roads will be maintained at maintenance Level III, IV, or V to provide access for all National Forest traffic, public service, and private commercial haul.

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| 103 | * | Transportation Management - Roads Regulated | L19 |

Roads are regulated by Regional Forester or Forest Supervisor order to prohibit use by certain vehicle classes or user groups. This practice is done to protect resource values, protect users, control maintenance expenditures, and to reduce user conflicts. Roads will be maintained at maintenance Level II to provide access for Forest Service administrative traffic, for dispersed recreation traffic in high clearance vehicles, and for any traffic regulated by special permit. Normally, regulated use applies to local roads and some collectors. Seasonal closures for wildlife or soil and watershed protection may be used. Some roads

| Practice Number | | Title | Activity Code |
|---|---|---|---|
| | | that cannot be adequately maintained for motorized use are restricted. Closed roads may be occasionally opened by permit to provide access for public firewood gathering and other beneficial uses. | |
| 104 | * | Transportation Management - Roads Closed | L19 |
| | | Local roads are closed to motorized use. Roads will be maintained at maintenance Level I. Enough maintenance is accomplished to preserve the initial investment. The roads remain available for land management activities by the Forest Service, or permitted uses such as access to utilities for repair. Implementation may be by signs, gates, earth-log mounds, barricades, or other barrier devices. | |
| 105 | * | Transportation Management - Road Obliteration | L19 |
| | | The road prism is restored to the resource production potential that existed prior to the road. This will be done by physically restoring the soil and vegetation to the preroaded condition. | |
| 106 | * | Trail Construction and Reconstruction | L21 to L24 |
| | | Trails will be constructed or reconstructed to a minimum standard necessary to carry foot traffic, equestrian traffic, mountain bicycles and motorcycles, singularly or in combination. | |
| 107 | * | Trail Construction and Reconstruction - Special Purpose | L21 to L24 |
| | | Trails will be constructed or reconstructed to a standard necessary to carry traffic or specific special uses. Examples of special uses include trails for the handicapped, botanical educational trails, cross country ski trails, and snowmobile trails. | |
| 108 | * | Transportation Management - Trails | L20 |
| | | Trails are open to intended use. Managing trails for their intended use may involve restrictions on other uses. An example of a trail managed with some type of restriction on use would be the Pacific | |

| Practice Number | Title | Activity Code |
|---|---|---|
| | Crest Trail, which is closed to motor vehicles by law. Other restrictions would include seasonal limitations on trailbikes and/or equestrian traffic to protect resources. Trail management direction is given by the establishment of maintenance levels. | |
| 109 | Fire, Administration and Other (FA&O) Construction and Reconstruction | L24 |
| | Planning, design, inspection, and construction of capital improvements to support fire, administrative, and other multifunctional activities. Includes opportunities to conserve energy such as retrofitting existing facilities. | |
| 110 | Fire, Administration and Other (FA&O) Facility Operation and Maintenance | L25 |
| | Operation and maintenance of Eldorado National Forest structures serving fire protection, administration, and other management needs. | |

## Element P - Protection

Current and projected use trends for the Eldorado indicate the need for the Forest to provide a comprehensive fire management program. This program would include, but not necessarily be limited to, support activities such as fire planning, prevention, detection, presuppression, initial attack, reinforcements, and managing planned and unplanned ignitions. In addition, it would include an aggressive fuels management program consisting of timber sale slash treatment, prior activity fuels treatment, and natural fuels treatment coordinated with the resource elements it supports.

Protection goals result from a process of identification, analysis, recommendation, and establishment of the most feasible balance of the above mentioned treatments in order to protect resource and private land values and to minimize the overall damage potential on both public and private lands within the forest.

Forest Pest Management and Air Quality Management are also handled under the protection element.

| Practice Number | | Title | Activity Code |
|---|---|---|---|
| 111 | * | Fire Management | P01 to P10, P24 |

Prevention, detection, presuppression, and suppression of fires. Activities take place both on National Forest lands and private lands under cooperative protection agreement with the California Department of Forestry. The Eldorado protection boundary has been established to define these lands in total. The normal fire season is May to November. The objective of this practice is to provide public safety and minimize resource losses caused by uncontrolled wildfire. Units of measure are dollars and persons.

| | | | |
|---|---|---|---|
| 112 | | Activity Fuels Management | P11 |

Planning, inventory, and treatment of residual fuels created by timber sale and other management activities that alter vegetation. Fuel treatment methods are burning, rearrangement, and removal. These methods prepare timber harvest areas for artificial regeneration. They also help maintain soil productivity, rehabilitate watershed conditions, improve range forage and wildlife habitat, and reduce fire hazard. Unit of measure is acres.

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| 113 | | Prescriptive Fire Management | P14 |

An action to take advantage of fire to provide beneficial rather than harmful results. Planned and unplanned fire ignitions may be strategically used in a way that duplicates the natural role of fire in the environment. This practice is performed only in a designated Management Area, where unit boundaries are predetermined and applicable policy is approved in advance by the Regional Forester. Prescriptive Fire Management may be employed in Wilderness (unplanned ignitions) as well as other designated forest lands. Unit of measure is acres.

| | | | |
|---|---|---|---|
| 114 | | Natural Fuels Management | P12 |

Planning, inventory, and treatment of natural fuels. Fuel treatment methods are burning, rearrangement, removal, and type conversion to more desirable vegetation. Application of this practice is based on reducing potential fire hazard where timber, range, wildlife, and other resources would

| Practice Number | Title | Activity Code |
|---|---|---|

be threatened by buildups of untreated natural forest fuels. This practice may also be used to provide public safety and protect intermingled or adjacent private property values. Units of measure are plans and acres.

115 * Law Enforcement — P24, P25

All activities required to prevent violation of laws and regulations. Also the detection and investigation of suspected violations and appropriate resolution of violations. The primary purpose of law enforcement is to assure that use and occupancy of National Forest system lands is in reasonable compliance with established laws and regulations. Unit of measure is dollars.

116 * Integrated Pest Management — P35, P36

Management of forest pests to minimize resource losses and to maintain or improve productivity by the coordinated application of the full range of techniques available to prevent damage, reduce pest populations when necessary, and create vegetative conditions that are least susceptible to damage. Coordinate with other federal and state agencies when appropriate. Unit of measure is acres.

117 * Air Quality Management — P38

Activities designed to prevent, reduce, or regulate the amount of air pollution generated by fugitive sources within the forest boundary, and activities designed to measure and respond to air pollution generated outside the forest boundary. This practice involves the NEPA process and project and project implementation; developing and administering plans for fuel reduction projects; and air quality monitoring and management of Class I airsheds. The unit of measure is projects supported.

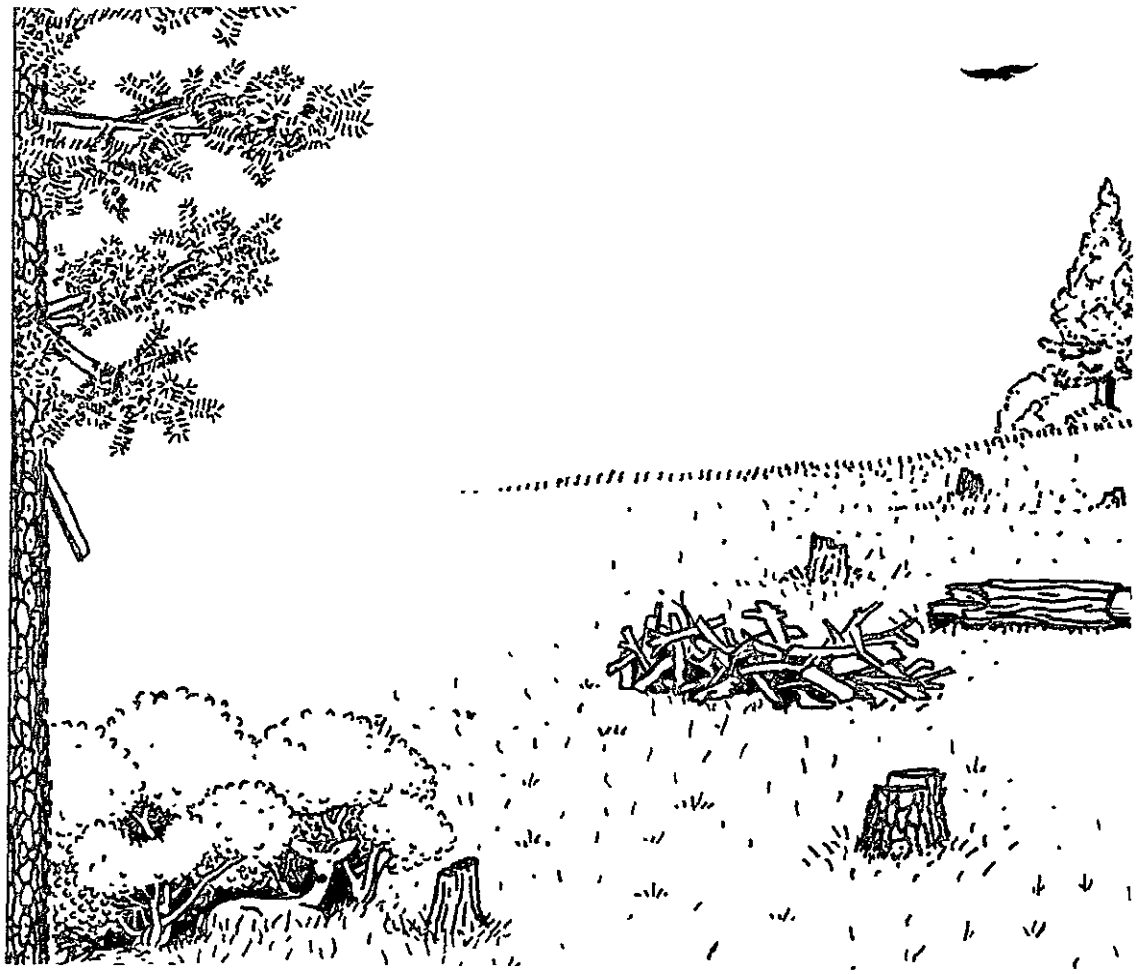
## G. Standards and Guidelines

Standards and Guidelines represent the Forest level of management direction. They are an extension of the Forest practices and set the minimum conditions that must be applied to the land to meet Eldorado goals and objectives.

## 1. Forest-wide Standards and Guidelines

These Standards and Guidelines establish the environmental quality, natural renewable and depletable resource requirements, conservation potential, and mitigation measures that apply Forest-wide. Forest-wide Standards and Guidelines are applicable as stated to all Management Areas on the Eldorado. They are normally not repeated in individual Management Area Prescriptions unless further refinement of the direction is needed for unique conditions in a particular Management Area. Standards and Guidelines which do not apply Forest-wide can be found in the more specific Management Area Standards and Guidelines.

The following section of the plan contains Forest-wide direction. Each Forest-wide practice is qualified by general direction for that practice, if applicable. The general direction is then followed by the specific Standards and Guidelines to be applied universally to the Eldorado.



| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Recreation | | |
| 1 - Recreation Planning and Inventory | Implement and monitor the Forest Plan in response to project work or Regional Office studies<br><br>Maintain a current Recreation Information Management (RIM) inventory | Carry out studies that are projected by the Forest Plan<br><br>Coordinate planning activities with other resources |
| Recreation Opportunity Spectrum (ROS) is a management concept that applies Forest-wide Every acre of National Forest land treated by this Forest Plan fits into one of the six ROS classes listed in Practices 2 through 6 | | |
| 2 - Recreation Opportunity Spectrum Primitive (P) | Manage the area to be essentially free from evidence of man-induced restrictions and controls Provide a range of primitive recreation opportunities and experiences | Meet the ROS objective of Primitive Interaction between visitors is very low and the evidence of other users is minimal Capacity ranges from 002 to 0 03 PAOT per acre Motorized use is prohibited Recreation development would not be provided |
| 3 - Recreation Opportunity Spectrum Semiprimitive Nonmotorized (SPN) | Manage the area so that minimum on-site controls and restrictions are subtle Provide a range of semiprimitive nonmotorized recreation opportunities and experiences | Meet the ROS objective of Semiprimitive Nonmotorized Interaction between visitors is low but there is evidence of other users Capacity ranges from 008 to 083 PAOT per acre Motorized use is normally prohibited Recreation development would be Level I, or two sites per acre |
| 4 - Recreation Opportunity Spectrum Semiprimitive Motorized (SPM) | Manage the area so that minimum on-site controls and restrictions are present but subtle Provide a range of semiprimitive motorized recreation opportunities and experiences | Meet the ROS objective of Semiprimitive Motorized Concentrations of users are low but there is often evidence of other users Capacity ranges from 008 to 083 PAOT per acre Motorized use is permitted and access roads to facilitate resource management shall be Maintenance Levels I and II local roads Recreation development would be Level II, or two sites per acre |
| 5 - Recreation Opportunity Spectrum Roaded Natural (RN) | Manage the area so there is only moderate evidence of the sights and sounds of man Provide a range of roaded natural recreation opportunities and experiences | Meet the ROS objective of Roaded Natural Interaction between users is usually low to moderate with evidence of other users prevalent Resource modification practices are evident Conventional motorized use |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | is provided for in construction standards and facilities designs Capacity ranges from 083 to 2 5 PAOT *per acre Recreation development* would be Level II, III or IV, or 2 to 5 sites per acres |
| 6 - Recreation Opportunity Spectrum Rural (R) | Manage the area to accommodate substantial modification of the natural environment Provide a range of rural recreation opportunities and experiences | Meet the ROS objective of Rural Sights and sounds of man are evident Interaction between users is moderate to high Facilities are designed for use by large numbers of people and intensified for motorized use and parking *Capacity ranges from* 083 *to* 7 5 PAOT per acre Recreation development would be Level III or IV , or 3 to 10 sites per acre. |
| 9 - Cultural Resources Inventory and Evaluation | Complete a cultural resources inventory prior to any activity or action to identify all potentially significant cultural properties that may be effected by the undertaking | Conduct identification studies for potentially significant cultural resources in a manner consistent with 36 CFR 800 |
| | Conduct inventories to expand the cultural resources data base where deficiencies are identified | Determine the level of inventory and intensity of field survey coverage according to standards in FSM 2361 and Cultural Resources Directions and Procedures,2/12/82<br><br>Follow the methods for field survey and resource recordation established in the Forest Cultural Resource Training Guide Follow the standards in FSM 2361 and Cultural Resources Training Guide |
| | Assess the scientific, historic, and ethnic significance for each cultural property before determining further treatment Nominate significant cultural properties to the *National Register of Historic Places* | Apply the National Register of Historic Places Criteria in 36 CFR 60 and regulations in 36 CFR 63 to determine the eligibility of a cultural property to the National Register |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | Use the Resource Protection Planning Process (RP3) and develop regional research designs to integrate site significance and practical management needs |
| | | Use FSM 2361, "Treatment of Archaeological Properties A Handbook," the *Cultural History and Cultural Resource* Data Base Sections in the Forest Cultural Resource Overview, and the traditional values of local Miwok, Washo, and Nisenan Indian communities as guidelines for evaluating significance |
| | | Apply the Criteria of Effect in 36 CFR 800 and follow the guidelines in FSM 2361 for determining the effect of an undertaking |
| 10 - Cultural Resources Protection | Protect all identified cultural properties until they are evaluated, protect the integrity and significant values of eligible properties and National Historic Landmarks | Use the guidelines outlined in FSM 2361 for developing protective measures |
| | | Conduct compliance inspections on all special use permits containing cultural resource stipulations or conditions Follow the Advisory Councils Manual of Mitigation Measures (MOMM) for mitigation of adverse effects |
| 11 - Cultural Resources Enhancement | Treat and interpret significant cultural properties appropriate to their assessed value and associated level of public interest | Comply with 36 CFR 800 regulations and follow the guidelines in 36 CFR 66, FSM 2361 and the 13 principles in "Treatment of Archaeological Properties A Handbook " |
| | Preserve representative sample of cultural resources for eventual scientific study and public education | Interpret Cultural Resources through signs, brochures, maps, displays, and programs |
| | | *Issue permits under the Archaeo*logical Resources Protection Act of 1979 (P L 96-95) for non-Federal archaeological research projects on the Forest. |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | Encourage non-Federal research projects on the Forest |
| 13 - Visual Resource Inventory and Planning | Maintain current data files for<br><br>Visual Quality Objectives (VQO)<br>Visual Absorption Capability (VAC)<br>Existing Visual Condition (EVC) | Meet the approved VQO for all landscape altering projects |
| | Provide visual resource recommendations to land managers and interdisciplinary teams who are assessing land altering projects with a Visual Quality *Objective (VQO) of Modification*, Partial Retention, or Retention | Provide visual analysis using aerial photos, existing VAC maps, field analysis, and computer perspective plots or simulations for projects *with a VQO of Partial Retention or* Retention |
| | | Write and implement Viewshed Management Plans for Sensitivity Level 1 highway corridors, trails, water bodies, rivers, and areas of concentrated public use |
| | | Predict future visual condition on a project basis |

Visual Quality Objectives are desired ratings outlined under the Forest Service system of Visual Resources Management VQO's apply Forest-wide, every acre of National Forest land treated by this Forest Plan fits into one of the five VQO classes listed below, Practices 14-18

| | | |
|---|---|---|
| Visual Quality Objectives | Manage areas to provide the viewing public a characteristic natural appearing landscape commensurate with the description stated for each VQO practice Resource management activities will be guided by the appropriate Landscape Management handbooks and Forest Landscape Architects' recommendations | Maintain visual quality by including mitigation measures in all activities that have the potential for altering the landscape beyond the approved Visual Quality Objective<br><br>Specific facility and vegetative treatment within viewsheds will be guided by approved Viewshed Plans |
| | SPECIAL NOTE<br><br>Clearcut and shelterwood opening limits stated under the following standards may be exceeded on rare occasions with supportin visual analysis and documentation by Forest Landscape Architect | Along Scenic Highways 50 and 88 resource activities will also be designed to meet Scenic Highway standards |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 14 - Preservation (P) | | Design and locate trails, trail bridges, and other trail related improvements to be as unobtrusive as possible in the landscape |
| 15 - Retention (R) | | <u>Foreground Distance Zone</u><br><br>Manage the vegetation of the area to provide optimum diversity of species with a range of age and size classes up to and including trees with old-growth characteristics Optimum diversity shall be achieved as it relates to a sequence or continuity of view along a highway, road, reservoir complex, trail, or other Sensitivity Level 1 use area or travel route<br><br>Limit Cutting methods to single tree selection or group selection (up to 2 acre openings) to meet Retention-Foreground on projects In general, most openings will be less than 1 acre<br><br>Perform an intensive field and office Visual Absorption Capability Study on projects and activities proposed within Retention-Foreground landscapes<br><br>Design and construct proposed facilities and roads within the Retention-Foreground landscapes to be as unobtrusive as possible Provide visual diversity with a range of ages and size classes up to and including mature timber<br><br><u>Middleground Distance Zone</u><br><br>Visual diversity shall relate to the concept of a "natural appearing forested landscape" in a sequence and continuity of a viewshed, reservoir complex, trail, or other Sensitivity Level 1 use area or travel route |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | Limit clearcut and shelterwood openings to 15 acres or less to meet Retention-Middleground on projects In general, most openings will range from 5-10 acres<br><br>Perform an intensive Visual Absorption Capability Study on projects and activities proposed within Retention-Middleground landscapes<br><br>All facilities and roads shall be designed to meet Middleground Retention |
| 16 - Partial Retention (PR) | | <u>Foreground Distance Zone</u><br><br>Manage the vegetation of the area to provide optimum diversity of species with a range of age and size classes up to and including mature timber<br><br>Where safe, maintain old-growth specimen character trees in the immediate foreground distance zone<br><br>Visual diversity shall relate to the concept of a "natural appearing forested landscape" in a sequence and continuity of a Sensitivity Level 2 viewshed, reservoir complex, trail, or other Foreground-Partial Retention area<br><br>Limit clearcut and shelterwood openings to 15 acres or less to meet Partial Retention Foreground on projects In general, most openings will range from 5 to 10 acres Exceptions for larger cut units may be allowed on a project basis when it is determined that Visual Quality Objectives will be met<br><br>Perform a Visual Absorption Capability Study on projects and activities proposed within the Partial Retention-Foreground landscapes |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | All facilities and roads shall be designed to meet Foreground Partial Retention<br><br>Middleground Distance Zone<br><br>Provide visual diversity with a range of age and size classes up to and including small timber Visual diversity shall relate to the concept of a "natural appearing forested landscape" in a sequence and continuity of a viewshed, reservoir complex, trail, or other Sensitivity Level 1 and 2 Partial Retention use area or travel route<br><br>Limit clearcut and shelterwood openings to 25 acres or less to meet Partial Retention-Middleground on projects In general, most openings will range from 10-15 acres Exceptions for larger cut units may be allowed on a project basis when it is determined that Visual Quality Objectives will be met<br><br>Perform a Visual Absorption Capability study on projects and activities proposed within the Partial Retention-Middleground landscapes<br><br>All facilities and roads shall be designed to meet Middleground Partial Retention |
| 17 - Modification (M) | | Middleground Distance Zone<br><br>Meet Modification on projects and activities<br><br>Limit openings to 40 acres or less to meet modification In general most openings will range from 15-20 acres Exceptions for larger cut units may be allowed on a project basis when it is determined that Visual Quality Objectives will be met |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Perform a Visual Absorption Capacity Study as determined by a landscape architect Projects and activities as viewed in the background may appear dominant, with features similar to those occurring naturally<br><br>All facilities and roads shall be designed to meet Middleground Modification Background views from Sensitivity Level 1 areas and travel routes shall appear as natural openings |
| 18 - Maximum Modification (MM) | | Meet Maximum Modification on projects and activities |
| 19 - Visual Resource Improvement | Apply to areas created both by management activities or where existing conditions require improvement | Schedule and carry our rehabilitation to upgrade landscapes that do not meet the adopted VQO for the area Undertake enhancement measures where it is determined that there is potential for greater natural appearing variety |
| 21 - Interpretive Services Planning | Develop interpretive and visitor information and environmental education plans | Maintain and update visitor information, interpretive, and environmental education plans including natural, cultural, and management themes |
| 22 - Interpretive Services Management | | Standard |
| | Develop and maintain interpretation and visitor information programs | Manage a standard level of information, interpretation, and environmental education programs to enhance visitor understanding of the Forest environment and Forest Service management activities Develop new programs<br><br>Present quality programs for large and small audiences that may include staffed information offices, guided and unguided activities, displays, exhibits, brochures, and campfire programs |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | Low Standard<br><br>Provide low standard information, interpretation, and environmental education programs at a minimum level Minimum level includes<br><br>Brochures needed for visitor safety and resource protection,<br><br>minimum number of staffed information points and after-hours self-service information facilities,<br><br>maintenance of existing interpretive facilities to a level needed to protect the investment,<br><br>environmental education activities for teachers |
| Off-Road Vehicle Management | | |
| Manage off-road vehicle activities to meet the intent of the Executive Order 11644 as amended by Executive Order 11989 Recognize that ORV activities are a legitimate use of the National Forest and provide for the recreation opportunity | | |
| 26 - Open Off-Road Vehicle Management | Areas open to ORV travel may be designated after a management plan has been completed Open areas for over land travel may be designated in roaded natural areas Open areas for over snow travel may be designated in roaded natural and/or semi-primitive motorized areas | ORV use will generally be restricted within 1/2 mile of existing residences It is recognized that this will not be feasible in all cases because of intermingled private lands and physical characteristics of the land Therefore, the SPreD Calculation will be used to establish appropriate distances from existing residences<br><br>Seasonal ORV use closures, within critical deer winter range, may be established after thorough analysis and approval of deer herd management plans Critical winter range will be as defined in the approved deer herd management plans |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | A closure plan will be instituted for motorized use, during wet weather periods to reduce damage to soil resources<br><br>Over snow travel will be permitted in designated open areas when there is 12 inches of snow or more and no ground contact is made |
| 27 - Restricted Off-Road Vehicle Management | ORV use will be restricted to designated roads and trails in roaded natural and semi-primitive motorized areas except<br><br>Analyze the State proposal for a north/south trail corridor through the Forest<br><br>An OHV and Trail Management Plan for the Forest will be developed to establish a coordinated trail system, including trailheads, for all motorized and non-motorized uses The 1977 Off Road Vehicle and Travel Plan will remain in effect with the additional closures identified in Management Practice 28 until 12/31/89 After 1/1/90 only those routes designated in the new Forest OHV and Trail Management Plan will be open for greensticker ORV use | Mountain bicycles will be permitted to use trails and roads in the roaded natural and semi-primitive motorized areas of the Forest unless designated closed to this use<br><br>In the semi-primitive non-motorized areas, mountain bicycles will only be allowed on trails designated for such use<br><br>Maintenance Level 2 Forest roads will generally be designated as open to greensticker ORV use unless adverse environmental impacts or conflicts with other uses are identified Selected Maintenance Level 1 Forest roads (currently blocked) may be designated for ORV use if such use is not found to be in conflict with the original reason for closing the road Special restrictions may apply on Level 1 and 2 roads which are in the neighborhood of summerhome tracts or developed recreation sites or under special use permit Selected Maintenance Level 3, 4, and 5 Forest roads may be considered for combined use designation where there use would enhance opportunities for ORV's and would not conflict with other uses or resource considerations County roads within the Forest boundary may be considered for combined use designation by the County |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | Roads and trails for which required rights-of-way do not exit and those located predominantly on private land will not be designated for ORV use, however, a list will be developed of priority ROW aquisitions needed to complete the desired road and trail system<br><br>ORV use will generally be excluded within 1/2 mile of privately owned property with existing residences It is recognized that this will not be feasible in all cases because of intermingled private lands and physical characteristics of the land Therefore, the SPreD Calcu- lation will be used to establish appropriate distances from existing residences<br><br>In each deer herd winter range and fawning areas, motorized trails will be limited to an average of 2 5 miles per square mile Open roads will be limited to an average of 2 5 miles per square mile<br><br>In critical deer winter range, Seasonal ORV closures may be established after thorough analysis and approval of deer herd management plans Critical winter range will be as defined in the approved deer herd management plans<br><br>A closure plan will be instituted for motorized use, during wet weather periods to reduce damage to native surface trails The plan will allow for trails to be open when soil conditions permit |
| 28 - Closed Off-Road Vehicle Management | The Forest is closed to ORV use except in areas designated open (with a management plan) and on designated roads and trails | Primitive, semi-primitive non-motorized areas, the Pacific Crest Trail, wilderness will be closed to motorized vehicles (See specific Management Area direction for other closures and restrictions ) |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | The Pacific Crest Trail and all wilderness will be closed to mountain bicycles<br><br>Exceptions may be made to closures where Escaped Fire Analysis or threat to life or property dictates otherwise<br><br>Temporary use of closed areas may be authorized by Special Use Permit<br><br>ORV travel and mountain bicycle use may be restricted in specific areas by Forest Supervisor Order |
| Wildlife and Fish | | |
| 35 - Fish and Wildlife Habitat Coordination | Maintain and enhance habitat for fish and wildlife species | Maintain medium to high quality habitat according to the Habitat Capability Models for management indicator species and Habitat Quality Criteria for special habitats Review these models as needed to incorporate the best current information on habitat needs of fish and wildlife species |
| Early/Mid Successional Stage Habitat Management and Old Growth Habitat Management are intended to apply Forest-wide where, by the nature of the vegetation, opportunity exists to use these practices Due to the heterogeneous nature of ground cover, every Forest acre is not suitable simultaneously but may change from one stage to the other over the 50-year planning horizon | | |
| 41 - Early/Mid Successional Stage Management | Provide cover and forage for species that require early successional vegetation | At a minimum, maintain current deer herd population numbers by providing special consideration for winter range and deer fawning areas Adhere to the habitat capability models available for early/mid successional stage indicator species<br><br>*Apply recommendations presented in* approved deer herd management plans<br><br>Forage to cover ratios will be 40 60 with 20-30 percent in mature conifer and 30-40 percent in mast producing oaks in key winter ranges |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | Timber harvesting activities will be designed to maintain diversity, optimize wandering edge, and provide the best shape and spacing between timber units for selected wildlife indicator species<br><br>Manageable habitat factors will be managed at a medium capability level according to the Wildlife Habitat Capability Models for the Western Sierra Nevada Escape cover patch sizes will range from 30-50 acres in both winter and summer ranges |
| 42 - Old-Growth Habitat Management | Provide habitat for late successional wildlife species associated with old-growth timber stands | Maintain old-growth characteristics in medium to high quality condition according to the Habitat Quality Criteria for old-growth forests (Habitat Quality Criteria for the Western Sierra Nevada, May 1981)<br><br>Spotted owl habitat areas provide habitat with old-growth characteristics, well spaced across the planning area Old-growth will be maintained in accordance with Management Area Standares and Guildelines for Management Area #18 |
| 44 - Snag and Down Log Management | Provide habitat for wildlife species that are dependent on snags and downed logs | Standards and guidelines have been set forth for the Forest in the booklet Guidelines for Timber and Wildlife Management Coordination in Regeneration Cutting These guidelines serve only as a minimum level Intensive snag and down log management will be applied within harvest units on lands with emphasis on resources other than timber, i e , low site areas, Streamside Management Zones, etc Provide, maintain, and manage for an average of 1 5 snags per acre on all lands with the following specifications |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | (1) 1 2 snags per acre between 15-24 inches diameter breast height (dbh) and greater than 20 feet high,<br><br>(2) 0 3 snags per acre greater than 24 inches dbh and greater than 20 feet high<br><br>Areas within timber compartments that have timber management emphasis will be managed to retain a minimum 2 snags per 3 acres in a variety of size classes Snag recruitment may be necessary to provide this habitat through time |
| 45 - Hardwood Management | Manage oaks and other hardwoods for wildlife benefits, utilizable products, and esthetic values The guidelines for oaks and deer are a proxy for other species which utilize hardwoods | <u>General</u><br><br>Place major emphasis in hardwood management on black oaks but retain other species to provide diversity and associated benefits<br><br>Manage hardwood aggregations in relatively large units of area (e g , drainage, project, or ecological units), gener- ally exceeding 100 acres within selected deer winter range Design treatment to balance all resource needs and values and derive the greatest total benefit within these units of area<br><br>In existing pure oak stands, maintain aggregations larger than 1 acre Within conifer stands, maintain smaller aggregations composed of large-crowned groups of trees Generally remove individual oaks competing with conifers on Dunning Site Class III or better unless needed for wildlife or diversity<br><br>Direct management of oaks toward developing the following characteristics (1) two broad age classes, one of trees older than approximately |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | 80 years for mast production and another of trees less than 80 years for replacement, (2) large-crowned trees, and (3) groups of stands of trees with adequate growing space<br><br>Utilization shall be the primary means of accomplishing those management activities that involve the removal of trees<br><br>Specific<br><br>To meet desired basal areas in oak within any area of management, a proportionately higher stocking will be maintained on the low sites (poorer than Dunning Site III), within Streamside Management Zones, steep slopes, visual corridors and other non-timbered management areas<br><br>The following guidelines, organized by deer range categories, generally meet the needs of all wildlife species dependent upon oaks They apply to productive forest lands On unproductive forest lands, management of existing hardwoods shall be based upon interdisciplinary evaluation of all resource needs and capabilities of the specific site in question<br><br>Migration Corridor - Produce cover during migration while providing pockets of mast producers An unevenaged stand and mixed species composition in aggregates is desirable Pure oak aggregates should consist of trees older than 80 years on 20 percent of the area and younger than 80 years on 80 percent of the area Minimum average basal area, regardless of slope, should be 10 square feet per acre |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | Holding Areas - Produce maximum diversity while providing cover stands at least 4 acres in size with less than a 200 foot sight distance Create openings of 1/4-1 acre for forage with individual or aggregates of oak interspersed Manage oaks primarily for mast production with 70 percent of the area in oaks being older than 80 years and 30 percent less than 80 years In riparian areas and on south slopes less than 25 percent, provide a basal area of 36 square feet/acre<br><br>Critical Winter Range (as defined in the approved Deer Herd Management Plans) - Manage oaks to create large-crowned foliage, some scattered saplings and poles, and small groups of saplings or poles Intermixed conifer stands meeting hiding and thermal cover requirements should be a minimum of 4 acres with browse patches intermixed Optimum crown cover within oak aggregations is 70 percent On all slopes and ridge-tops, 15-20 percent of the area being managed for winter range should be stocked with oaks older than 80 years The desired basal area within these groups or stands of oak is 36 square feet per acre An additional 15-20 percent of the area should support oaks younger than 80 years that are sufficiently well stocked to reach desired basal area at 80 years<br><br>Winter Range, Summer Range and Other Areas - 10 square feet/acre as a minimum except where the needs of indicator species require heavier stocking |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| * meadow is defined as a grassy opening, 0.1 acre or larger, dominated by perennial sedges, rushes, and grasses (wet meadow) or perennial grasses and forbs (dry meadow) | | |
| 46 - Meadow Vegetation Management | Provide cover and forage for wildlife species dependent on meadows and the adjacent forest edge Maintain the integrity of the meadow ecosystem | Maintain meadow edge of the following dimensions<br>at least 100 feet from the perimeter of all meadows 1 0 acre or larger,<br>25-75 feet from the perimeter of meadows 0 1-0 9 acre in size<br>Provide the following vegetative structure within the meadow edge<br>maintain at least 60 percent of Capable, Available, or Suitable (CAS) land in timber 100 years old or older;<br>maintain a canopy closure of 60-80 percent,<br>maintain the meadow vegetation in medium to high quality condition that is less than 15 percent bare ground or pavement in the meadow,<br>provide fences or other controls to prevent overgrazing and meadow damage by livestock;<br>avoid constructing new roads within the perimeter, and consider closing and obliterating existing roads |
| 48 - Recovery Species Administrative Management | Utilize administrative measures to protect and improve endangered, threatened, rare, and sensitive wildlife species | Prepare local management plans for bald eagles and peregrine falcons in coordination with the US Fish and Wildlife Service, and provide management to meet recovery objectives |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| 49 - Sensitive Plants Interim and Recovery Management | Provide for protection and habitat needs of sensitive plants so that Forest activities will not jeopardize the continued existence of such species | Participate in the implementation of approved species recovery plans and Species Management Guides as specified for the Eldorado |
| | Forest Sensitive Plant Coordinator is responsible for developing information to prepare Special Management Guides that contain, but are not limited to, biological and ecological data for sensitive plant species, and for carrying out the management requirements in the Species Management Guides | Prepare Species Management Guides for any species that is adversely affected by hydroelectric or mineral development projects before those projects are implemented |
| 50 - Administration, Inventory, and Coordination - Fish, Wildlife, and Sensitive Plants | Participate in administration, coordination, and inventory activities designed to meet Regional standards and guidelines, legal mandates, and planning direction for fish, wildlife, and sensitive plants | |
| Range | | |
| 51 - Range Planning and Analysis | Apply Region 5 manual standards for Range Analysis and Allotment Management Plans | Analyze all areas of the Eldorado that are under 60 percent slope and produce suitable forage for use by grazing livestock under permit |
| Timber | | |
| 56 - Timber Program Administration | Plan and execute timber management activities on the basis of resource data specific to each project area Produce a regular flow of raw material and improve long-term productivity while coordinating with the objectives of associated resources | Design timber sale position statements and the periodic timber sale action plan (minimum period of 5 years) to meet the objectives stated in Output Table IV-1 of the Plan |
| | Design the size, shape, and location of openings to be created in vegetation to meet the combined resource objectives of the site within the opening and the adjacent untreated stand | An opening is created when most of the vegetation is removed from an area larger than 5 acres Naturally occurring permanent openings are not considered as openings As an opening becomes revegetated, it is no longer |

| ANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | considered an opening when it reaches 4.5 feet tall and meets minimum stocking standards When partial removal of vegetation such as predominant removal harvest leaves a residual tree stand meeting or exceeding these conditions, an opening has not been created<br><br>The size of openings will be based upon silvicultural, visual, watershed, and wildlife considerations, but will not normally exceed 40 acres Openings larger than 40 acres may be made after public notification and review, followed by Regional Forester approval<br><br>A stand adjacent to an existing opening may be transformed into an opening only if associated resource values are protected and the combined acreage of the existing and proposed opening does not exceed 40 acres Stands and openings are not considered adjacent if they are<br><br>Separated by a stand of a size and shape suitable for efficient management, usually at least 5 acres,<br><br>separated by a Streamside Management Zone of at least 150 feet in width,<br><br>have less than 15 percent common periphery with other openings<br><br>Disperse new openings throughout the project area |
| | Manage for diversity of plant communities | Manage diversity over rather large areas, generally the size of at least one timber compartment The intent of plant diversity management shall be the support of populations of wildlife and plant species native to the area of management, maintaining approxi- |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | mately the current distribution and frequency of forest types and enhancing visual quality Each seral stage shall have at least a five percent representation within the area of management<br><br>*Consider the following elements of* diversity in relation to wildlife objectives during the planning of each project that manipulates vegetation<br><br>Amount of edge,<br><br>amount and distribution of seral stages,<br><br>size of stands - average size and range of sizes,<br><br>species composition,<br><br>vertical diversity<br><br>In creating openings, the intent shall be to vary size, shape, and dispersion to enhance diversity Guidelines are provided for the Forest in the booklet Guidelines for Timber and Wildlife Coordination in Regeneration Cutting |
| 57 - Compartment Examination | Gather available information on all resources present in each compartment | Gather and file resource information by compartment on an ongoing basis<br><br>Maintain compartment files for the storage and retrieval of compartment data Develop and update orthophoto compartment base maps at a scale of 1 24,000 with an overlay system showing<br><br>Management Area boundaries,<br><br>site productivity (1) nonproductive forest and nonforest, (2) low site poorer than Forest Survey Site Class 4, and (3) medium to high site Forest Survey Site Class 4 and better existing vegetation type, |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | specific information of value such as sensitive plants, superior trees, physical improvements, fuelwood decks, and fawning areas,<br><br>areas suitable for even-aged management, areas suitable for other than even-aged management, productive forest land that is available but not suited for timber management,<br><br>areas suitable for even-aged management subdivided into the pattern of even-aged stands that are projected to occur as the Forest becomes regulated<br><br>Field maps used in recording and utilizing compartment resource information normally will be at a scale of 1 12,000<br><br>Record timber stand examination data, stand management prescriptions, and completed treatments on stand record cards keyed to the units delineated on the overlays |
| 67 - Snowpack Cutting Method | Improve water yields by applying snowpack cutting methods where practical in true fir stands above 6,000 feet in elevation | Integrate snowpack cutting with existing even-aged patterns, served by common skid roads and haul road systems Within these logical logging units create harvest openings of approximately one-half to two acres These small openings need to be coordinated with a permanent skid road system to facilitate removal of the groups harvested in each entry Groups should be located and oriented to take advantage of stand conditions and shading, where consideration is given to the next two entries |
| 69 - Ground Based Harvest System<br>70 - Cable Harvest System<br>71 - Skyline Harvest System<br>72 - Special Harvest System | Apply harvest systems and techniques which are the most efficient, considering road construction and yarding costs, environmental affects, and the primary stand management objective or unique values | Follow Standards and Guidelines under Forest-wide Practice 86 A minimum of 85% of an activity area suited to tree growth shall be left in acceptable soil conditions Areas of disturbance shall include temporary haul roads, |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | skid roads and trails, landings, and routes of travel in operation of equipment used in the harvest system With cable harvest, specify skyline system when lateral yarding capability or partial to full suspension of logs is necessary for protection of soil or residual timber Otherwise, specify cable yarding, making skyline yarding optional<br><br>Specify helicopter yarding where other systems are not suitable because road access is economically infeasible or causes environmental problems |
| 73 - Artificial Stand Reestablishment | Reestablish stocking to meet Regional Standards in native conifers In the General Forest Emphasis Zone, emphasize maximum volume production over the long-term, while maintaining a diversity of tree species that is typical of natural stands Recognize that some competing brush and oaks will remain in plantations after treatment Make stand reestablishment compatible with the primary stand management objective, unique values, or compartment objectives for featured wildlife species | Reduce competing vegetation to insure reestablishment of conifers, but accept some competing brush and oaks Reduce surface ground cover to permit successful artificial regeneration while meeting soil protection standards Apply hand, mechanical, and chemical treatments<br><br>Select species and seed lots for each planting site from sources best suited for high productivity over the life of the stand Generally, plant at least two species and recognize the inclusion of volunteer trees as part of the species mix Weigh these elements in deciding mix<br><br>Species which existed naturally at the site<br><br>Relative productive potential of the various species<br><br>Cost of establishing a fully stocked stand of the desired species |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | Desired diversity in the area<br><br>Presence of diseases or other pests |
| 74 - Natural Stand Reestablishment | Reestablish stocking to meet Regional Standards in native conifers In the General Forest Emphasis Zone, emphasize maximum volume production over the long-term Make stand re-establishment compatible with the primary stand management objective, unique values, or compartment objectives for features wildlife species | Design cutting methods and patterns to take advantage of natural seed fall<br><br>Reduce competing vegetation to insure reestablishment of conifers Reduce surface ground cover to permit successful artificial regeneration while meeting soil protection standards, but recognize that some competing brush and oaks will remain after treatment Apply hand, mechanical, and chemical treatments<br><br>Apply Management Practice 73 when initial natural stocking has not succeeded within two years |
| 79 - Fuelwood | Remove fuelwood material that does not have a high value for other products from harvested timber stands | Encourage removal of fuelwood material to reduce hazardous buildups of fuel, assist in timber stand improvement, improve visual quality, and to satisfy public need for energy Give priority to individual permits, except where removal of material not suitable for merchantable logs is allowable under a timber sale contract<br><br>Subsidize the removal of usable wood if the cost of work is essential to stand establishment or tending is reduced correspondingly<br><br>Utilization of oaks, other hardwoods, and snags will be in accordance with Management Practices 44 and 45<br><br>Except for Wilderness, post areas that are closed to fuelwood cutting Areas will be closed to fuelwood removal if it is in conflict with wildlife, visual quality, or other resource needs |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| 80 - Christmas Tree and Miscellaneous Forest Products | Harvest Miscellaneous forest products where it is compatible with the primary stand management objective or unique values | Harvest Christmas trees as a timber stand improvement measure or in conjunction with land clearing projects Sell by contract or permit<br><br>For products other than Christmas trees, use the Botanical Collector's Permit for noncommercial uses and a contract or permit for commercial uses |
| Water and Soils | | |
| 81 - Water Yield Improvement | Practice water yield improvement where opportunities exist and visual quality objectives can be maintained | Manage forest stands and meadow areas for water yield improvement using management techniques that are in harmmony with Management Area objectives. |
| 82 - Runoff Regulation | Practice runoff regulation where opportunities exist and visual quality objectives can be maintained | Practice runoff regulation in connection with water yield improvement utilizing techniques that meet Retention Foreground standards and are in harmony with Management Area objectives Design timber harvest in red fir stands to prolong the snow melt period and encourage deep seepage |
| 83 - Watershed Maintenance and Rehabilitation | Maintain stable watershed conditions by limiting the area, degree of soil disturbance, and amount of vegetation removal<br><br>It is assumed that a 100 percent increase in natural background (predevelopment) erosion rates is acceptable over the short-term and that a 50 percent increase is acceptable over the long-term, as long as Streamside Management Zones and other Best Management Practices are utilized to protect the aquatic environment from detrimental sediment loads during low flow periods | The key to controlling erosion rates and the resulting sediment delivery to streams and lakes is good ground cover, which is defined as living plants within 5 feet of the ground and litter or duff with a depth of 2 inches or more Accomplish this as follows<br><br>Maintain at least 40 percent ground cover on soils with a low erosion hazard<br><br>maintain at least 50 percent ground cover on soils with a moderate erosion hazard<br><br>maintain at least 60 percent ground cover on soils with a high or very high erosion hazard |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | In addition to ground cover constraints, use a maximum allowable cumulative disturbance to protect against adverse downstream watershed impacts No more than 25 percent of a watershed (200 acres or larger) will be in an equivalent clearcut condition at any one time An area with less than 40 percent good ground cover is a clearcut equivalent A disturbed area is considered fully recovered when the ground cover density exceeds 70 percent and no active rill or gully erosion is present |
| | Rehabilitate degraded watersheds to the point where beneficial uses of water are not adversely affected or where the equivalent clearcut area is less than 25 percent of the watershed | Where the beneficial uses of water are adversely affected or where the equivalent clearcut area of the watershed exceeds 25 percent, rehabilitate deteriorated areas before any further land disturbing activities take place |
| | | Develop cumulative watershed impact thresholds for all Third Order watersheds on the Forest by utilizing Region 5 methodology |
| | | All treatable areas of degraded watershed condition will be treated for improvement in a cost effective manner on a priority basis according to beneficial uses |
| | | Degraded watersheds that do not require treatment for improvement but will respond to deferred intensive management activities will be avoided until they stabilize |
| 84 - Water Resource Management | Achieve the water quality goals in the Organic Act of 1897 and the Clean Water Act as amended in 1977, 1978, and 1980 | Identify Best Management Practices (BMP) needed to protect water quality during project assessment and design BMP's will be implemented |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | to meet water quality objectives and maintain and improve the quality of surface water on the Forest Methods and techniques for applying the BMP will be identified during project level environmental assessments and incorporated into the associated project plan and implementation documents |
| | Maintain water quality of streams and lakes according to the identified beneficial uses established by the California State Water Resources Control Board's Regional Basin Plans | |
| | Consider energy potential as a Forest resource in arriving at management decisions concerning proposed hydroelectric project | Establish Class VI SMZ's on a project basis to complete the SMZ network described in Management Area #30 Class IV SMZ's are normally 50 feet wide but may be of lesser or greater width if conditions on the ground warrent The Class IV SMZ will be potected from ground disturbing activities and 70% groundcover should be maintained |
| | | Correct water quality problems identified in Watershed Improvement needs (WIN) inventory and Eldorado National Forest problem assessment, Section II, Best Management Practices Book |
| | | Assess nonconsumptive instream flow needs on a case-by-case basis during project environmental assessment and adjudication proceedings utilizing Region 5 instream flow group methods Obtain water availability assurances as appropriate |
| | | Design manipulation and harvest of commercial and noncommercial vegetation with water yield production being an objective in addition to the other renewable commodity outputs |
| 85 - Water Rights Use/ Management | Secure water rights for existing and foreseeable future National Forest System consumptive uses employing National and Regional procedures | Maintain complete records and update every year |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| 86 - Soil Support Services | Secure a knowledge of properties, distribution, capabilities, suitabilities, and limitations of soils on the Eldorado | Identify and give priority to areas that need more detailed soil resource inventories |
| | Integrate soil resource information into land and resource management activities in order to optimize sustained yields of goods and services without impairment of the productivity of the land | In Management Areas where soil disturbing activities are practiced, the following requirements will be applied during the EA process |
| | | Tractor logging shall not normally be permitted on slopes steeper than 35 percent or on soils having an erosion hazard rating greater than 8, unless such activities will have no significant adverse impacts Determination of the magnitude of the impacts and the permitted deviation from this direction will be made by the interdisciplinary team, which includes earth science skills, |
| | | suspended log yarding shall be used in areas where it is necessary to protect the soil mantle from excessive disturbance This need shall be coordinated with a Sale Layout Forester, |
| | | skid trail patterns shall be designed to best fit the terrain The volume, velocity, concentration, and direction of runoff should be controlled in a manner that will minimize erosion and sedimentation Soil factors to consider are slope, soil stability, and areas of high soil moisture, |
| | | cross-ditch logging skid trails at proper intervals according to soil erodibility and slope Ditching requirements shall be included in sale contract and design specification |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | Use a limited operating period in areas where it is necessary to prevent compaction, rutting, gullying, and excessive erosion<br><br>On areas with a pre-disturbance erosion hazard rating of less than 8, reduce the post-disturbance erosion hazard rating to 8 or less within 2 years Attain the original, undis- turbed value within 5 years Integrate an erosion control plan into the design of projects that will cause significant site disturbance<br><br>Utilize an interdisciplinary team, including earth science skills, to develop silvicultural prescriptions for areas capable, available, and suitable for timber production and having Forest Survey Site Class 5 and 6<br><br>Locate new roads in locations of the highest soil stability and lowest soil productivity<br><br>Avoid constructing firelines with bulldozers on soils with high erosion hazard on slopes steeper than 40 percent<br><br>Revegetate or otherwise mitigate erosion as soon as practical on areas burned by wildfire |
| 87 - Soil Resource Maintenance and Improvement | Improve the inherent productivity of the soil, or return degraded soils to the productivity consistent with resource objectives | Implement soil fertilization and other soil improvement techniques on areas where they are identified as likely to respond to treatment and found to be cost effective<br><br>Reduce the density of compacted soil areas (roads, landings,plantations, etc )<br><br>Stabilize areas that are actively eroding so that the erosion hazard is reduced to 8 or less within 2 years after the occurrence of active erosion |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | Maintain watersheds within their thresholds | Identify sensitive watersheds near their thresholds and initiate soil maintenance and rehabilitation projects to allow for any additional land disturbing practice to occur, or defer activities until 70 percent ground cover is attained in disturbed areas |
| Minerals and Geology | | |
| Forest-wide direction and standards and guidelines for locatable and leasable minerals do not apply to wilderness, other designated lands specifically withdrawn from mineral entry, and lands acquired under the Weeks Law, except where valid existing rights are established Practices 88 and 89 are employed in all other Management Areas | | |
| 88 - Minerals Management Locatables | Insure that prospectors and claimants meet appropriate laws or regulations that govern mining by working with the Corps of Engineers, Bureau of Land Management, State Department of Fish and Game, and local counties When appropriate, prior to approval of the Plan of Operations, determine objectives for land use and reclamation to be instituted after mining operations are complete | Advise claimants and prospectors to file a Notice of Intent and a Plan of Operations if their work causes significant ground or vegetative disturbance A Plan of Operations requires claimants to make the least disturbance, restore natural conditions to the extent possible, and remove improvements when no longer needed for mining purposes When a Plan of Operations is filed, the Forest Service has 30 days to respond |
| 89 - Minerals Management Leasables | Coordinate the review of prospecting and leasing applications with the Bureau of Land Management and State Department of Fish and Game to obtain broad assessment of the proposal | Review proposals, including the Plan of Operations and prepare an environmental assessment that reflects total resource needs and requirements for mineral area rehabilitation |
| 90 - Minerals Management - Mineral Materials | Use designated on-Forest rock or soil materials sources or import materials from private sources for in-service or cooperator use, whichever is most cost effective<br><br>Act expediently on private permit requests to develop all types of common mineral materials | Develop, maintain and update a materials source inventory for Forest uses<br><br>Strategically locate mineral material sites throughout the Forest to produce and stockpile road surfacing and construction materials<br><br>Conduct a materials source investigation if a sufficient quantity and quality of material is not readily available, or if better sources may be available |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | Require preparation of a materials source development and rehabilitation plan for each project involving more than 1,000 cubic yards<br><br>Issue permits to sell materials after making an EA or EIS to approve the site and establish mitigation and restoration needs Simultaneously issue a Plan of Operations with the permit |
| 91 - Geologic Inventory and Evaluation | Secure a knowledge of properties, distribution capabilities, suitabilities, and limitations of geological resources | Identify and give priority to areas that need more detailed geological hazard information Complete the Forest Geology Resources Inventory |
| 92 - Geologic Technical Inventories | Integrate Geological Resource Inventory (GRI) information into land and resource activities in order to optimize sustained yields of goods and services without impairment of land productivity, and protect public safety | Use the GRI when it is completed, or other available geologic hazard information for preliminary assessment of projects which disturb the land surface Provide geotechnical evaluation of projects with a higher potential to initiate or accelerate landslides Avoid or provide special treatment of unstable areas to avoid triggering mass movement<br><br>Allow no land-disturbing activities on extremely unstable land unless a geotechnical investigation determines certain activities are appropriate<br><br>Avoid earthquake fault zones whenever possible when designing roads and other facilities<br><br>Review geotechnical evaluations of private proposals such as hydroelectric developments<br><br>Develop site-specific mitigaton measures where potential slope insta- bility is identified Measures will be designed by an interdisciplinary team, which includes earth science skills |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | Prevent loss of groundwater quality and qualtity | Conduct a geotechnical assessment of all groundwater development projects or any other project which might adversely impact the groundwater table |
| Lands | | |
| 93 - Withdrawals and Revocations | Maximize the availability of lands for mineral exploration and development by insuring that withdrawals are maintained only when required by law, (i e , wilderness, wild rivers) or when laws and regulations do not provide adequate protection for sensitive resources and other conflicting land uses | Review all existing withdrawals by 1991 per FLPMA and periodically review new withdrawals following BLM and Forest Service guidelines |
| 94 - Land Adjustment | Seek optimum landownership patterns through land adjustments to reduce conflicts in the use and to improve administration of National Forest System lands | Improve the ownership pattern and simplify land management by these means<br>Acquire private land for public access to water and to protect watershed values,<br>acquire private land to consolidate ownership and reduce conflicts,<br>acquire private land to protect scenic values, threatened and endangered wildlife species, and forestall noncompatible land uses,<br>acquire private lands inside the Raker Act boundary to gain access to other Federal lands and to enhance wildlife management,<br>retain lands along waterways for public access, use, and enjoyment,<br>dispose of scattered National Forest parcels to create a firm, logical exterior boundary<br>Appendix D lists those lands that have priority for disposal by exchange |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| 95 - Acquisition of Rights-of-Way | Acquire rights-of-ways needed on roads, trails, cost share, and scenic easements for the management and administration of the resources | Determine the need for full public access versus administrative access when assessing the need for a full easement or a limited easement<br><br>Locate Forest roads, trails, fuel-breaks, and other facilities on National Forest land when practical<br><br>Participate in cooperative share cost road construction and use with adjacent landowners<br><br>Locate the facilities to minimize economic severance or disruption of private land use if acquisition of a right-of-way is necessary<br><br>Give priority to and initiate right-of-way proceedings for all system roads and trails across private land that are now lacking a recorded right- of-way |
| 96 - Special Use Management Nonrecreation | Authorize land occupancies only after a comprehensive analysis indicates such occupancy is in the best public interest, complements other resource objectives, and such use cannot be located on private land | Limit new major transportation - utility rights-of-way to potential corridors Base potential future corridors on the concept of exclusion areas and windows Place both transportation and utility facilities in common corridors Bury new or reconstructed power lines unless analysis shows this action would create unfavorable impacts Use towers with simple, aesthetic designs if burying is not feasible Utilize existing approved electronic sites prior to analyzing potential sites<br><br>Consolidate electronic sites to reduce impacts on other land and uses Prevent encumberances on lands identified for exchange that would reduce future disposal opportunities Consolidate public utilities rights-of-way to reduce impacts on other resources |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| 97 - Right-of-Way Grants Roads and Trails | Process applications for permits, easements and licenses in a timely manner | Review location and design specifications of facilities to be built under easements, permits or licenses to assure the protection or enhance- ment of the resources |
| 98 - Power-related Licenses and Permits | Coordinate the review and environmental assessment of applications for power licenses with FERC, other Federal, State and local agencies, and the public | Recommend to FERC if a project interferes or is inconsistent with the purposes for which the National Forest was created or acquired and protect National Forest resources by conditioning the license through Section 4(e) of the Federal Power Act. |
| 99 - Property Boundary Location and Marking | Survey, mark, and post property lines of lands administered by the Eldorado, prior to implementing resource programs adjacent to these property lines Maintain land title and survey records necessary to establish boundaries, provide for maintenance of property lines | Give priority to unsurveyed and and unmarked property lines<br><br>Solicit and participate in cooperative cost share survey with adjacent landowners.<br><br>Limit cadastral survey investments on parcels identified for disposal<br><br>Resolve existing unauthorized occupancy and new trespass cases when discovered by survey |

Facilities

Road Development and Maintenance are listed as Forest-wide practices because the Standards and Guidelines can be universally applied to Management Areas where roads are authorized Road practices do not apply to Wilderness, Primitive and Semi-primitive Nonmotorized High Country Management Areas, and the Wild category of Wild and Scenic Rivers

| | | |
|---|---|---|
| 100 - Timber Access Road Development Construction and Reconstruction | Develop an efficient transportation system to support the timber resource Minimize permanent road densities | Locate and design roads to economically accommodate the timber resource while providing for the protection or enhancement of resources other than timber<br><br>Construct temporary roads when there is only a one-time need for a transportation facility Return the road to vegetative production when the one-time need has been fulfilled |

| IANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | | Make road densities commensurate with sale and post timber sale activities Economics will be a key consideration in performing the analysis that determines road densities for any given timber sale.<br><br>On arterial, collector, and some local roads, perform an economic analysis comparing such items as haul, construction, and maintenance costs using time periods and interest rates<br><br>If an existing road is not capable of serving the desired resource need, reconstruct it to a standard that meets that need |
| 101 - General Resource Road Access Development Construction and Reconstruction | Develop a general transportation system to support Forest resources other than timber | Construct and reconstruct roads for economical resource management and safe use |
| | Process applications for permits, easements, and licenses | Review location and design specifications of facilities built under permit or license to assure the protection and enhancement of the resources |
| 102 - Transportation Management - Roads Open | Manage the Forest Development Transportation System to provide for user safety, control maintenance expenditures, protect resource values, and reduce user conflicts while providing for public and private commercial haul | Maintain open roads to maintenance Levels II to V according to the functional classification of the facility, surface type, road standard, and frequency of use<br><br>Stabilize the surface of roads available for all weather use |
| 103 - Transportation Management - Roads Regulated | | Maintain regulated roads to maintenance Levels I to V depending on the facility characteristics and administrative and resource management needs<br><br>Install gates on roads subject to seasonal closure Install gates on roads that are closed to the public but are needed on an intermittent basis for administrative and resource management activities |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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| | Allow periodic closure of designated areas to provide a quality deer hunting opportunity. | Temporarily block vehicle access to designated areas during the deer hunting season Gates or other temporary structures should be used to limit access to the public Administrative uses are permitted<br><br>Closures that create quality deer hunting opportunities will be undertaken only after contact has been made with the public and interested groups, and their support is given Coordination with the California Department of Fish and Game is required to identify potential closure areas<br><br>Information about closures should be made available to the public in advance of the closure date<br><br>On local roads, regulate, or restrict road use in such areas as critical deer winter range, and deer fawning areas to meet an average open road density of approximately 2 5 miles per square mile |
| 104 - Transportation Management - Roads Closed | | Maintain closed roads to maintenance Level I Select a closure device dependent on future activities planned for the area<br><br>Normally place earth-log barriers on local roads closed to use if subsequent activities requiring access are not planned for the next 10 years |

The following table illustrates the typical characteristics associated with the road maintenance levels discussed in the standards and guidelines for management practices 102, 103, and 104 These are by no means all inclusive descriptions but are included to give the reader an idea of the typical characteristics found within each maintenance level

MAINTENANCE LEVELS - ROADS

| | I | II |
|---|---|---|
| GENERAL DESCRIPTION | This is basic custodial care as required to protect the road investment and to see that damage to adjacent land and resources is held to a minimum. Level I maintenance often requires an annual inspection to determine what work, if any, is needed to keep drainage functional and the road stable This level is the normal prescription for roads that are not opened for traffic Maintain drainage and runoff patterns | This level is used on roads where management requires that the road be open for limited passage of traffic Traffic is normally minor, usually consisting of one or a combination of administrative use, permitted use, or specialized traffic. Level II requires the basic care of Level I |
| TYPICAL SURFACE TYPE AND CONDITION | Normally a native surface road may have spot aggregate base as needed Logs or slides are allowed to block access unless they contribute resource damage Not dust abated in this non-use condition | Native surface, may have aggregate base for surface stabilization May be rough and not passable with a sedan Brush, small trees, rocks, etc may encroach on travelway Not dust abated |
| WIDTH/LANES | 40" to 16' / single lane | 40" to 16' / single lane |
| DESIGN SPEED | 1 to 15 mph | 5 to 15 mph |
| FUNCTIONAL CLASS | LOCAL roads make up 99% of the Level I maintenance on the Eldorado | LOCAL roads make up 87% of the Level II maintenance on the Eldorado |
| ACTIVITIES | Bladed or brushed only when needed, such as for resource damage or prior to a project Safety and destination signing normally is not done Resource protection is the main goal | Surface is spot bladed only in areas where resource damage is taking place Road is opened up and made passable for high clearance vehicles such as pickups Road is not brushed for sight distance Safety and destination signing is commensurate with use |

| III | IV | V |
|---|---|---|
| This level is used on roads that are opened for public traffic and generally applies when use does not exceed 15 ADT 1/ ADT should be used as a guide in determining the maintenance level and not as a sole criterion A road may receive only one or two vehicles/day for most of the year, however, during a brief period, such as hunting season, the road may receive 20 or 30 vehicles/day Total traffic types and planned land use are important criterion for selecting maintenance level The road is maintained for safe and moderately convenient travel suitable for sedans | This level generally applies when road use is between 15 and 200 ADT (see comment concerning ADT under Level III). At this level, more consideration is given to the comfort of the user These roads are frequently surfaced with aggregate base material, but some may be paved to meet economical considerations of the limited aggregate resource and the surface replacement cost factors | This level is generally maintained for use of 100 ADT and greater (see comment concerning ADT under Level III) Roads in this category include both paved and aggregate base surfaces Safety and comfort are important considerations Abrupt changes in maintenance will be posted to warn travelers until these deficiencies are corrected |
| Native surface, may have aggregate base travelway for surface stabilization Not dust abated | Aggregate base with a prime asphalt and/or chip seal Usually smooth but may have some potholes Little if any brush encroaches on to the travelway Permanently dust abated | Asphalt concrete usually overlaid on to aggregate base sub-grade Same as Level IV |
| 12' to 18' / single lane | 16' to 24' / single and double lane | 18' to 24' double lane |
| 5 to 20 mph | 5 to 25 mph | 25 mph plus |
| LOCAL and COLLECTOR roads make up 82% of the Level III maintenance on the Eldorado | COLLECTOR and ARTERIAL roads make up 79% of the Level IV maintenance on the Eldorado | ARTERIAL roads make up 79% of the Level V maintenance on the Eldorado |
| Surface is normally bladed once a year or as needed Travelway is brushed for sight distance Road is signed for public safety and usually has route markers and destination signs | Patching of potholes is an annual activity Route markers, destination, and safety signs are to standard for public use | Same as Level IV |

/ Average daily traffic

| ANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
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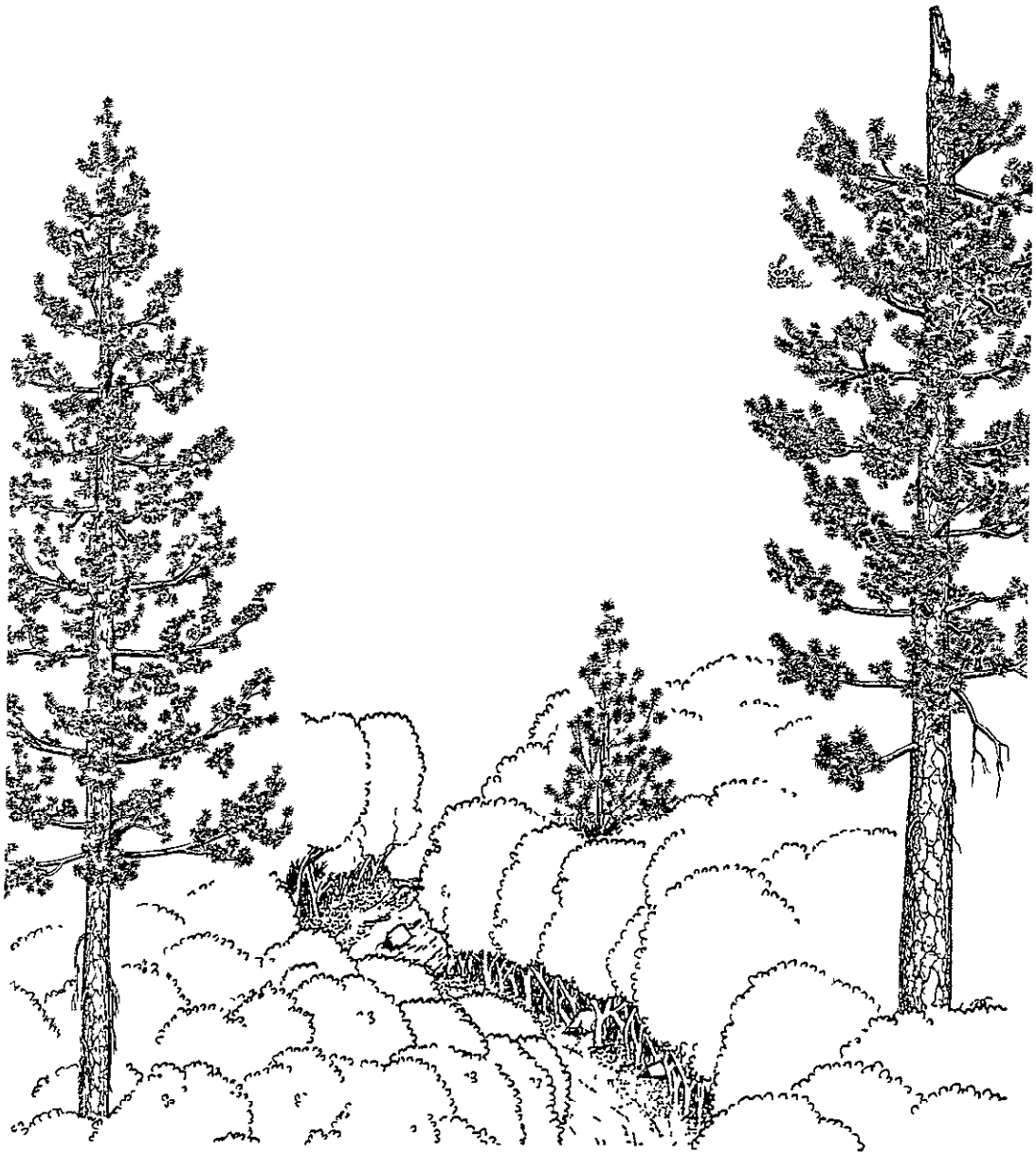
| 05 - Transportation Management - Road Obliteration | Reduce soil erosion and water degradation on roads not required for future resource management activities | When practical, restore the road prism to the original pre-roaded condition When this is not practical, restore the prism to such a condition that it will be maintenance free Return and compact as much of the fill as possible to the cut, outslope the surface, restore natural drainage, and revegetate with native forage species palatable to range cattle and wildlife<br><br>Remove and dispose of all man-made structures such as culverts, bridges, cattleguards, and signs that would necessitate maintenance |
| 06 - Trail Construction and Reconstruction | Provide for new trails where dispersion can be enhanced Develop a trail system that accommodates different types of users such as foot, equestrian, motorcycles and mountain bicycles<br><br>Cooperate with the State, other agencies, and user groups to identify and, where compatible with Forest Plan management objectives, develop segments of trail that support the concept of a State-wide trail system connecting use areas and providing the opportunity for long distance touring | Construct or reconstruct a minimum trail to accommodate the predicted type of use and capacity while providing the desired dispersion and recreation experience<br><br>Design equestrian trails to safely accommodate pack horses as well as horse and rider use<br><br>Design trails for motorcycles to provide an enjoyable experience<br><br>When applicable, utilize closed or obliterated roads as trails |
| 07 - Trail Construction and Reconstruction - Special Purpose | Provide for special purpose trails such as handicapped, educational, bicycle, and over-the-snow | Separate conventional bicycle trails from other uses except when incorporated into selected roads Over-the-snow trails will normally be installed, signed, and maintained by Special Use permittees |
| 108 - Transportation Management - Trails | Maintain trails for intended use Regulate and restrict trail use as mandated by law or policy Protect resource values and user safety while reducing conflicts | Follow Forest Service Manual direction for trail management<br><br>Implement trail use regulations |

The following table illustrates the typical characteristics associated with the trail maintenance levels discussed in the standards and guidelines for management practice 108 These are by no means all inclusive descriptions but are included to give the reader an idea of the typical characteristics found within each maintenance level Maximum width for a trail is 40 inches



MAINTENANCE LEVELS - TRAILS

| | I | II |
|---|---|---|
| GENERAL DESCRIPTION | Trails maintained for primitive experience level. No tread maintenance. Drainage functional and not likely to fail Trail sides not brushed but tread is kept passable Small slides may remain except for erosion potential Structures maintained as needed Signing may be deferred. | Trails maintained for near primitive experience level. Tread maintained for public safety. Logs or similar rustic structures may be provided at stream crossings Drainage same as Level I. Signing at a minimum level commensurate with the level of trail use |
| SURFACE TYPE AND CONDITION | Native surface, tread may be in a rough, primitive condition, but provisions are made for user safety and resource protection | Native surface, tread may be in near-primitive condition Provisions are made for user safety, resource, and investment protection. |
| MODE OF TRAVEL | Foot and Stock | Foot and Stock |
| ANNUAL TRAFFIC | Less than 30 users | 30 to 600 users |
| ACTIVITIES | Condition surveys and needed maintenance will be performed every 3-5 years Drainage is maintained to prevent damage to adjacent resources Signs are maintained that inform users of the conditions that exist Regulatory signs are maintained | Condition surveys and needed maintenance will be performed every 2-3 years Limited brushing, tread maintenance, slide removal, slump repair, and drainage maintenance takes place on this level of trail Route markers, regulatory, and directional signs are provided and maintained |

| III | IV | V |
|---|---|---|
| Trails maintained for intermediate experience level Tread maintained for public safety and user convenience Drainage same as Level I Trail sides brushed out to Handbook standards Structures maintained to original design standards Signing same as Level II | Trails maintained at relatively high standards to provide for public safety and convenience Tread relatively smooth, firm and may require stabilization. Signing at high level, all other elements same as Level III These trails are generally maintained for family or senior citizen use | Trails maintained for high use and experience levels, including special purposes such as VIS trails, bicycle trails, trails to major vista points, trails for the handicapped, etc Basic care same as Level IV but patching of paved tread may be needed annually Trail sides maintained to meet high visual standards by brushing and clean-up of debris beyond the trail limits Vistas are maintained |
| Native surface, may have spot surfacing Tread is relatively smooth providing for the protection of the resources and investment while being safe for the user | Native or stabilized surface In addition to providing user safety and protection of the investment and, resource this level of trail provides user comfort Tread smoothness is provided to safely accommodate the permitted use | Stabilized or paved surface Very smooth and oftentimes wider than the normal trail |
| Foot, horse, trailbike, snowmobile and cross country skiing | Same as III | Foot, bicycle, and/or wheel chair |
| 600 plus users | Same as III | Same as III |
| Condition surveys and needed maintenance will be performed every 1-2 years Cutting out of logs will be performed annually Activities such as contained in Level II are performed In addition, the tread and backslopes are groomed, rocks are removed, and spot surface replacement and structure maintenance is performed Warning, regulatory, directional, informational, and interpretive signing is maintained when applicable and as needed | Condition surveys and maintenance are performed at least annually and more often if needed Maintenance activities as outlined in Level III are applicable to Level IV trails Rock removal, however, will be more frequent Repair of bituminous and cement treated surfaces will take place when needed | All applicable activities had frequencies as performed on Level IV trails |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Protection | | |
| 111 - Fire Management | Provide public safety and protect Forest resources | Confine, contain, or control all wildfires within the Eldorado protection boundary to meet resource objectives with a least cost effort as defined by individual management area objectives<br><br>Implement a fire management organization, in conjunction with a Forest fuels treatment program, which assures that the outputs of goods and services defined by this Plan are sustained over time<br><br>Include public and resource protection measures in all planned management activities |
| 115 - Law Enforcement | Enforce laws and regulations in a fair and consistent manner | Protection - provide a safe Forest environment for the public and employees of the Forest Service<br><br>Violation Prevention - make the general public and employees aware of National Forest civil laws, rules, and regulations.<br><br>Investigation - gather evidence of suspected violations<br><br>Violation Prosecution - issue citations for violations<br><br>Civil and Criminal Liabilities - gather evidence and cooperate with local law enforcement agencies to determine civil and criminal liabilities |
| 116 - Integrated Pest Management | Maintain resource productivity at a high level by minimizing losses from forest pests | Vegetation management shall be the primary tool in the long-range minimizing of forest pest losses In situations when unacceptable losses occur or are anticipated, the full range of methods available will be considered, and those that are most effective considering the biological |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | efficacy, cost, and environmental effects and longevity of the response, shall be implemented<br><br>The presence of disease organisms shall be considered in the selection of species for each revegetation project, recognizing that some disease centers are very small or spot locations |
| 117 - Air Quality Management | Achieve the air quality goals in the Clean Air Acts as amended 1977 | Plan management activities so that the air quality will be equal to or better than that required by applicable Federal, State, and local standards or regulations, including 36 CFR 219 27 (a) 12 and 42 USC 7401-7642<br><br>Prepare smoke management plans to coordinate and manage smoke dispersal with other agencies and with respect to meteorological conditions<br>Maintain close liaison with local air pollution control offices and obtain all required permits |

## 2. Management Area Standards and Guidelines

Management Areas are distinct subdivisions of the Forest. The combination of Management Emphasis, Forest Practices, and individual Standards and Guidelines makes up a Management Area Prescription.

Each Management Area Prescription shown on the succeeding pages of Chapter IV consists of the following:

* Management Area Numbers which are grouped by Emphasis Zone. The pages on which the prescription appears are color-keyed to match the Emphasis Zones on the map.

* A Management Area Title which briefly identifies the land it represents.

* A Management Emphasis paragraph which more specifically states the long-term goal of the Prescription.

* A Management Area Description which concisely defines the types of land or specific sites to which the Prescription applies.

* Management Practices which are the actions, measures or treatments necessary to implement the Prescription. These Practices are categorized by Resource Element.

* General Direction which provides a transitional link between the Practice and its Standards and Guidelines.

* Standards and Guidelines which outline levels of attainment, conduct and local policy.

Management Areas in the General Forest Zone are comprised of a mixture of conifer timber strata and other vegetative types including grass, brush and hardwoods. The prescriptions for them include high site and low site timber harvesting of suitable stands that are capable of growing more than 20 cubic feet per acre per year. Unsuitable timber stands are lumped into a maintenance prescription, while type conversion and meadow management prescriptions are applied to brush and grass.

The General Forest Zone also contains four Management Areas which employ visual quality prescriptions. These prescriptions reduce the intensity of timber harvesting practices within selected viewsheds. Their application results in retention or partial retention of natural landscape conditions in foreground and middleground view areas.

This multiple set of prescriptions in the General Forest Zone produces a highly diversified land use pattern. Management Areas are extensively intermingled and vary in size from two acres up to several hundred acres. Like kinds of individual Management Areas acres are aggregated into total Management Area acres.

The following Management Area Index lists and summarizes the acreage allotted to each Prescription:

# Management Area Index

| | Management Area | Emphasis Zone | NF Acres | |
|---|---|---|---|---|
| | | **Designated** | | |
| 1. | Wilderness | | 115,753 | |
| 2. | Wild and Scenic River | | 14,361 | 1/ |
| 3 | Research Natural Area | | 2,562 | 2/ |
| 4 | Special Area | | 20,623 | 3/ |
| | | **High Country** | | |
| 5. | Primitive | | 281 | |
| 6. | Semiprimitive Nonmotorized | | 16.833 | |
| 7. | Semiprimitive Motorized | | 27,569 | |
| 8 | Roaded Natural | | 13,855 | |
| | | **Developed** | | |
| 9. | Existing Recreation | | 884 | |
| 10. | Potential Recreation | | 2,535 | |
| 11. | Existing Winter Sports | | 5,255 | |
| 12 | Potential Winter Sports | | 4,017 | |
| 13. | Private Sector Recreation | | 2,279 | |
| 14. | Administrative Sites | | 250 | |
| 15. | Placerville Nursery | | 218 | |
| 16. | Institute of Forest Genetics | | 234 | |
| 17. | Transportation Utility Corridor | | 0 | |
| | | **Wildlife** | | |
| 18. | Spotted Owl | | 60,800 | 4/ |
| 19. | Goshawk | | 4,473 | 5/ |
| | | **General Forest** | | |
| 20. | Visual Foreground Retention | | 19,306 | |
| 21. | Visual Foreground Partial Retention | | 14,885 | |
| 22. | Visual Middleground Retention | | 22,315 | |
| 23. | Visual Middleground Partial Retention | | 29,967 | |
| 24. | High Site Timber | | 131,795 | |
| 25. | Uneven Aged Timber | | 25,401 | |
| 26. | Low Site Timber | | 23,844 | |
| 27. | Type Conversion | | 0 | |
| 28. | Meadow Management | | 2,937 | |
| 29. | Maintenance | | 27,817 | |
| | | **Streamside** | | |
| 30. | Streamside Management Zone | | 27,200 | |

1/ 2,880 acres overlap wilderness
2/ 300 acres overlap wilderness
3/ 5,476 acres overlap wilderness
4/ 21,200 acres included in suitable land base
5/ 755 acres overlap other management areas

## MANAGEMENT AREA NUMBER 1

### WILDERNESS

**Management Emphasis**

Maintain a lasting system of quality wilderness
Provide for public use, enjoyment and appreciation of the unique characteristics of wilderness consistent with perpetuating its values

**Description**

Two designated wildernesses are currently contained in Management Area Number 1 These are

| Name | Size |
|---|---|
| Desolation | 42,194 acres |
| Mokelumne | 59,865 acres |
| Total | 102,059 acres |

Supplemental direction for Desolation is provided in the approved Desolation Wilderness Management Plan Supplemental direction for Mokelumne Wilderness is provided by the Interim Guidelines for Mokelumne Wilderness

One area is recommended for inclusion as wilderness

| Name | Size |
|---|---|
| Caples Creek | 13,694 |

This recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, Secretary of Agriculture, and the President of the United States The Congress has reserved the authority to make final decisions on wilderness designation

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| **Recreation** | | |
| 2 - Recreation Opportunity Spectrum - Primitive | Provide for very low interaction between visitors Evidence of other users is minimal | Manage to a Recreation Opportunity Spectrum of Primitive This is the desired level for wilderness |
| 9 - Cultural Resources Inventory and Evaluation | Identify all significant cultural properties that may be affected by wilderness use<br><br>Conduct inventories to expand the data base on high elevation sites | Apply Forest-wide Standards and Guidelines for inventory, evaluation, and protection of cultural resources |
| 10 - Cultural Resources Protection | Protect all significant cultural properties inside wilderness | Apply Forest-wide Standards and Guidelines in compliance with the Wilderness Act for protection of cultural properties |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 11 - Cultural Resources Enhancement | Provide for interpretation of cultural resources when appropriate | Interpretation must be consistent with wilderness values Refer to National Park Service examples and comply with "Principles in Treatment of Archaeological Properties a Handbook " |
| 14 - Visual Quality Objective - Preservation | Allow ecological changes only Trails, trail bridges, and other trail related improvements will be designed and located to be as obscure as possible | Manage to maintain a Visual Quality Objective of Preservation |
| 23 - Installation and Construction of Interpretive Services Facilities not on Interpretive Services Sites | Provide information and education material at trailheads outside of wilderness to explain wilderness use and protection | Develop maps, brochures, and publications for visitor use that stress wilderness manners, health, safety, no-trace camping, control of dogs, and proper use of firearms |
| 28 - Closed Off-Road Vehicle Management | No motor vehicle use or mountain bicycles allowed | Post wilderness boundaries and set up physical controls to prevent unauthorized entry where trespass is likely Exception by the Regional Forester may be made where escaped fire analysis or threat to life and property dictates otherwise |
| Wilderness | | |
| 33 - Wilderness Inventory and Planning | Use monitoring data and public input to recommend major changes in wilderness management direction<br><br>After Congressional designation of Caples Creek Wilderness Area, prepare a Wilderness Management Plan | Review or develop new management strategies or controls for this and the next planning period Utilize systems for judging impacts on wilderness campsites, such as the Frissell method of condition classification |
| 34 - Wilderness Area Management | Manage to preserve unique wilderness characteristics and limit use to the social carrying capacity<br><br>Management practices will be consistent with those of adjoining forests | Use the wilderness permit and reservation system to limit and restrict use and to collect visitor data Control use as follows<br><br>When use levels exceed 100 percent of capacity for a campsite or a travel zone, establish portal quotas and fix length of stay, |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Party size will be restricted to a maximum of 15 Exceptions may be made, on a case-by-case basis under special circumstances (i e , educational, scientific purposes)<br><br>close, rotate, or rehabilitate campsites to allow for site recovery,<br><br>require parties with recreation stock to carry feed,<br><br>restrict stock use from steep and rocky terrain,<br><br>grant permits to collect native plants only when needed to meet administrative or research needs<br><br>The above Standards and Guidelines are consistent with and will be used in conjunction with the supplement Management Plans for Desolation and Mokelumne Wilderness |
| | Allow commercial uses by permit only after an evaluation shows that such use will not compromise wilderness resources and character | Limit commercial permits to activities that meet specific public needs and cannot be provided in nonwilderness areas Do not issue permits for training activities or recreation events |
| Fish and Wildlife | | |
| 35 - Fish and Wildlife Habitat Coordination | Manage to allow a natural ecological succession of wildlife habitats, including natural wildfire and natural infestations of insects, to operate freely insofar as they do not endanger resources outside of wilderness | Direct management toward maintenance of those species indigenous to the area immediately prior to being designated wilderness Put special emphasis on the preservation of species classified as endangered, threatened, rare, or sensitive Physical improvements must be completed using nonmotorized equipment |

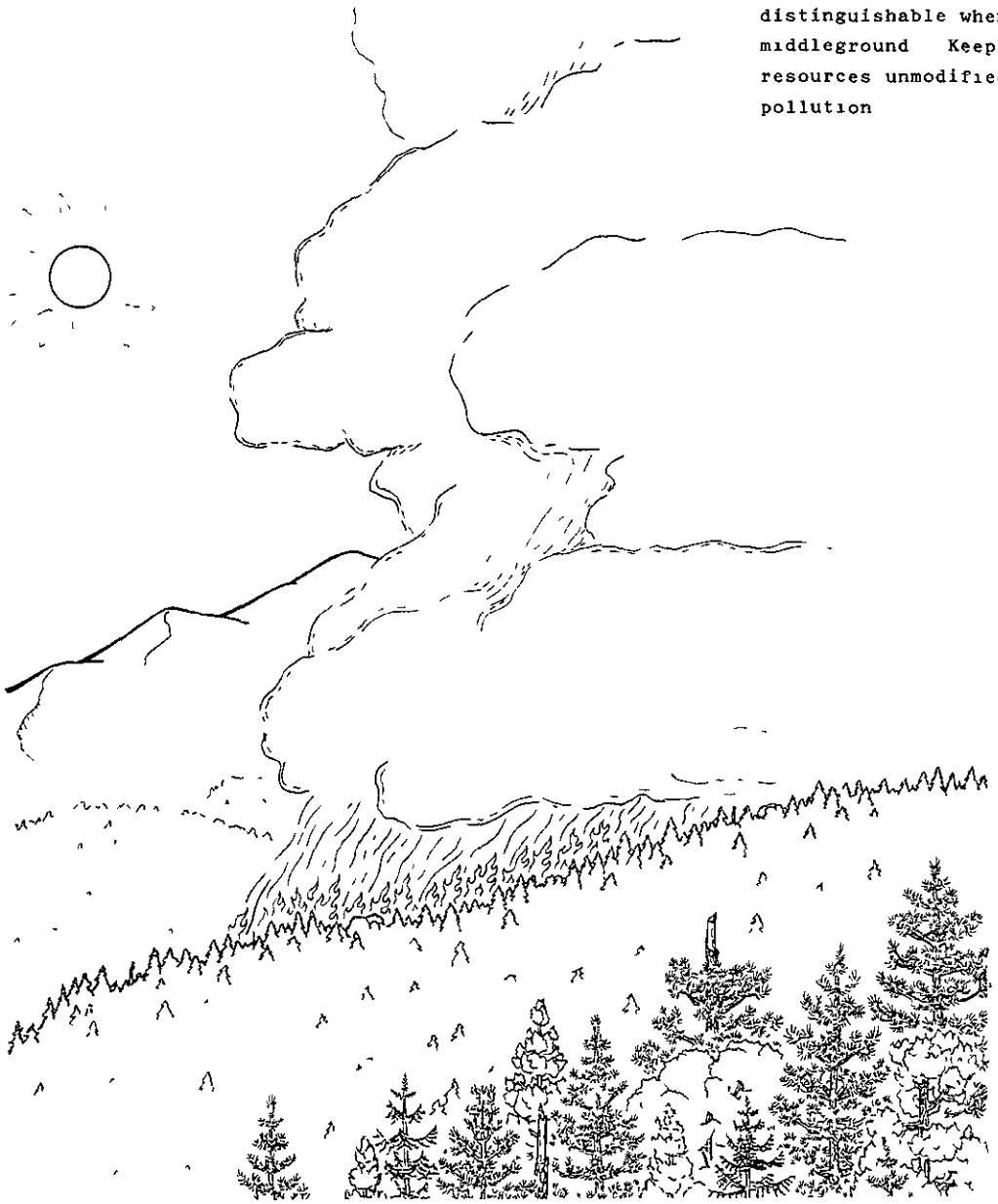
| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 38 - Lake Fisheries Habitat Improvement and Maintenance - Structural Improvements | Permit fish flow maintenance dams in existence prior to the designation of wilderness to remain and be operated and maintained to provide or improve the fishery resources | Structures must meet engineering structural standards Repair work on structures must be accomplished using nonmotorized equipment and native materials if possible |
| Range | | |
| 51 - Range Planning and Analysis | Analyze and maintain grazing allotments within the Desolation and Mokelumne Wildernesses, where these allotments were established at the time of Wilderness designation | No new allotments would be created, but livestock operations may continue on allotments established at the time of Wilderness designation Allotments closed at the time of designation will remain closed |
| 52 - Range Management | Administer existing grazing allotments to achieve proper use, protection of resources, and coordination *with dispersed recreation* wilderness use | Apply Regional readiness, utilization, and condition and trend survey standards |
| 54 - Range Improvement - Structural | Construct new range improvements only when necessary to manage the existing grazing resources and protect wilderness resources from grazing use | Prepare project environmental analyses Construct improvements by hand and with nonmotorized access |
| 55 - Range Improvement - Maintenance | Maintain existing and proposed range structural improvements to meet Allotment Plan and applicable wilderness area objectives | Perform maintenance with nonmotorized access and equipment Use native materials that harmonize with the environment |
| Timber | | |
| 79 - Fuelwood | Maintain natural condition | Wilderness is closed to fuelwood cutting |
| 80 - Christmas Trees and Miscellaneous Forest Products | Maintain natural condition | Do not allow harvest of miscellaneous forest products |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Water and Soils | | |
| 81 - Water Yield Improvement | Accept water yield incidental to wilderness management, with the exception of weather modification and weather and runoff monitoring stations | Where feasible, replace snow courses inside the wilderness with ones outside the boundary<br><br>Where feasible, convert permanent weather monitoring stations to buried instruments or temporary services |
| 82 - Runoff Regulation | Accept runoff incidental to wilderness management, with the exception of lake level and streamflow maintenance dams that predate the wilderness designation | Maintain and operate existing lake level and streamflow structures utilizing primitive means. |
| | Helicopters used to measure or service snow courses, stream gauges, and dams prior to area designation as wilderness, may continue | When not reasonably accessible by foot or horseback, the following flights are authorized<br><br>Soil Conservation Service - Two flights per year,<br><br>U S Geological Survey - Six flights per year,<br><br>Sacramento Municipal Utility District - Four flights per year,<br><br>Pacific Gas and Electric Company - One flight per year |
| 83 - Watershed Maintenance and Rehabilitation | Rehabilitate areas where land disturbing activities such as improper grazing and recreation trails and campsite overuse have caused resource damage, if natural recovery will take longer than 10 years | Where beneficial uses of water are adversely affected due to man's activities or natural disasters such as fire and flood<br><br>Stabilize stream channels and slopes, using reasonable non-mechanized and inconspicuous methods that will become unnoticeable to the casual observer within 5 years |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Utilize native plant species and natural rock to maintain stability |
| Minerals | | |
| 88 - Minerals Management - Locatables | Preserve the wilderness characteristics to the extent practicable while recognizing and accommodating valid existing rights | Preclude undue and unnecessary degradation of wilderness characteristics if surface disturbing activities are permitted by valid existing rights Determine if valid existing rights exist and comply with I D No 17, 36 CFR 228 15, or any other subsequent guidance |
| 89 - Minerals Management - Leasable | Preserve the wilderness characteristics to the extent practicable while recognizing and accommodating valid existing rights | Preclude undue and unnecessary degradation of wilderness characteristics if surface disturbing activities are permitted by valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |
| Lands | | |
| 93 - Withdrawals and Revocation | Preserve the wilderness characteristics of the land | Conform to Public Law 94-579, Section 204 |
| 96 - Special Use Management - Nonrecreation | Handle applications for conducting studies in wilderness by individuals or educational institutions on a case-by-case basis | Issue permits contingent upon the need to conduct a study within the wilderness for an administrative or research need Proposals will be jointly reviewed by the Forest Supervisor, a specialist from Pacific Southwest Experiment Station, and the sponsor to determine desirability and feasibility |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 98 - Power Related Licenses and Permits | Protect wilderness values in operating and maintaining existing power projects and other related facilities, including water regulation dams and hydro projects | Use foot and horseback access and require materials that harmonize with the environment to maintain existing facilities This is an exclusion area for transportation-utility corridors New development of hydro projects requires Presidential approval. |
| Facilities | | |
| | Foot | |
| 106 - Trail Construction and Reconstruction | Provide trailways and new trails where dispersion is desired. | Construct trail tread to an 18-inch standard<br><br>Use fords in preference to structures<br><br>Restore and stabilize the soil on abandoned trails by outsloping, revegetating, and performing other hand measures |
| | Equestrian | |
| | Provide for equestrain use on the flatter terrain Prohibit stock use in Summit City and Lower Mokelumne Canyon in the Mokelumne Wilderness | Construct trail tread to the minimum standard necessary to jointly carry foot and equestrian traffic |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area Develop Wilderness Fire Management Action Plans for Desolation and Mokelumne Wilderness | Use least cost strategies to meet resource objectives Use "light hand on land" concept in suppression efforts |
| 113 - Prescriptive Fire Management | Determine the role of fire in the wilderness ecosystem and evaluate the need for applying Forest Service Wilderness Fire Policy in Desolation and Mokelumne Wilderness The evaluation will consider use of planned and unplanned ignitions, with options to confine, contain, or control prescribed fire | In the interim, and consistent with basic fire suppression policy, control fires with the minimum impact on the environment Leave felled tree boles intact Use "light hand on land" concept |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | If prescribed fire is appropriate, prepare a Wilderness Fire Management Action Plan pursuant to the Forest Plan | |
| 117 - Air Quality Management | Achieve the air quality goals in the Clean Air Acts as amended in 1977 | Maintain high quality visual conditions in the Desolation Wilderness and Mokelumne Wilderness Class I airsheds Keep the form, line, texture, and color of characteristic landscapes clearly distinguishable when viewed as middleground Keep cultural resources unmodified by air pollution |



## MANAGEMENT AREA NUMBER 2

### WILD AND SCENIC RIVERS

Management Emphasis

Manage designated rivers and their immediate environments to preserve their free flowing condition and protect their outstandingly remarkable values Provide opportunities for public recreation and other resource uses based on the recommended class of each identified river segment.

Description

Two National Park Service inventoried rivers are contained in Management Area Number 2 They are

| | River | Class | Length | Size |
|---|---|---|---|---|
| 1 | Mokelumne | Wild | 19 miles | 2,880 acres |
| 2 | Rubicon | Scenic | 29 miles | 11,481 acres |
| | | | Total | 14,361 acres |

This is a preliminary administrative recommendation for the Rubicon that will receive further review and possible modification by the Chief of the Forest Service, Secretary of Agriculture and the President of the United States Final decisions to designate rivers to the Wild and Scenic Rivers system have been reserved by Congress

The North Fork of the Mokelumne above Salt Springs Reservoir is being studied and the recommendation, if any, will be made in the Forest Plan for the Stanislaus National Forest That portion of the river within the Eldorado will be managed to protect its values until the final decision is made If the final decision does not provide for designation as a Wild River, management will revert to Wilderness which is the current management prescription

The Rubicon will receive interim protection of its Wild, Scenic, or Recreational values, until Congress makes a formal designation by law, or disposes of the proposal

It has been determined that the North Fork of the Mokelumne west from Salt Springs Reservoir to Tiger Creek Reservoir is eligible for inclusion in the National Wild and Scenic River System A suitability study will be undertaken to evaluate alternative course of action for this stretch of river This portion of the river on the Eldorado N F is entirely within the recommended Mokelumne Archaeological Special Interest Area and will be managed as such if not designated as a Wild and Scenic River If it is designated by Congress, the direction for Wild and Scenic Rivers will apply

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Recreation | | |
| 2 - Recreation Opportunity Spectrum - Primitive | Provide for very low interaction between visitors Evidence of other users is minimal | Manage to Recreation Opportunity Spectrum of Primitive This is the desired level for the Mokelumne Wild River |
| 3 - Recreation Opportunity Spectrum - Semi-primitive Nonmotorized | Provide for low interaction between visitors Evidence of other users is apparent | Manage to a Recreation Opportunity Spectrum of Semiprimitive Non-motorized This is the desired level for the Rubicon Scenic River |
| 4 - Recreation Opportunity Spectrum - Semi-primitive Motorized | Provide for low concentrations of visitors Evidence of users is more obvious than Primitive or Semi-primitive Nonmotorized | Manage to a Recreation Opportunity Spectrum of Semiprimitive Motorized This is an acceptable level for the Rubicon Scenic River where external factors lower the ROS Class to SPM |
| 14 - Visual Quality Objective - Preservation | *Provide a high quality visual system* where changes are unnoticed both within the Management Zone and from the rivers | *Manage to a Visual Quality Objective* of Preservation This is the desired level for the Mokelumne Wild River |
| 15 - Visual Quality Objective - Retention | Provide the same visual setting as Primitive where changes are rarely evident | Manage to a Visual Quality Objective of Retention This is the desired level for the Rubicon Scenic River and an acceptable level for the Mokelumne Wild River |
| 16 - Visual Quality Objective - Partial Retention | Provide a high quality visual setting where changes are noticed but remain visually subordinate to adjacent landscape | Manage to a Visual Quality Objective of Partial Retention This is an acceptable level for the Rubicon Scenic River |
| 19 - Visual Resource Improvement | Maintain approved Visual Quality Objectives | When the visual setting is un-acceptable mitigate impacts or restore the lands to an acceptable rating |
| 20 - Developed Recreation and Visitor Information Services Site Construc-tion and Reconstruction | Support the recreation theme for the designated class of the river segment when developing potential sites | Mokelumne Wild River<br>Locate major campgrounds or inter-pretive facilities outside of Wild Rivers Provide only primitive type camping facilities at inventoried sites to enhance visitor appre-ciation for this program |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Keep development at Level I Use native materials |
| | | Rubicon Scenic River |
| | | Provide moderate sized campgrounds and other recreation facilities that are accessible from the rivers Screen buildings and improvements Keep them at least 100 feet from the rivers edge. |
| | | Allow development at Levels I and II with designs that harmonize with surroundings |
| 27 - Restricted Off-Road Vehicle Management | Provide restricted travel in the Scenic class of river where other resources are served Screen Roads and trails from the rivers | Post the designated travel routes |
| 28 - Closed Off-Road Vehicle Management | Close the Mokelumne Wild River to all motorized travel | Make exceptions only where escaped fire analysis or threat to life and property dictates otherwise |
| 30 - Wild, Scenic, or Recreation River Dispersed Recreation | Manage for moderate concentrations of visitors | Wild and Scenic Rivers |
| | | Allow activities that do not require building improvements sightseeing, hiking, undeveloped camping, nature study, fishing, and hunting |
| 31 - Wild, Scenic, or Recreation River Study | Complete formal nominations of the Mokelumne and Rubicon Rivers | Prepare a legislative EIS |
| | Complete suitability study on North Fork of Mokelumne River between Salt Spring Reservoir and Tiger Creek | |
| Wilderness | | |
| 34 - Wilderness Area Management | Manage the Mokelumne Wild River under dual designation with Mokelumne Wilderness | Make consistent with application of guidelines for Management Area Number 1 |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Fish and Wildlife | | |
| 37 - Stream Fisheries Habitat Improvement and Maintenance - Nonstructural Improvements | | Maintain a riparian strip that averages 100 feet on both sides of the stream<br><br>Recreation Rivers<br><br>Maintain the following vegetative structure within this riparian strip *when harvesting timber under Special* Cutting-Other, Practice 66<br><br>Uneven-aged timber between 100 and 250 years old, with a maximum opening 1 acre in size, or 3 chains along the streambank,<br><br>canopy closure of 40-70 percent,<br><br>one or more species of riparian hardwoods, in young and mature age classes, over 20 percent of the area by crown cover,<br><br>at least 25 percent of the ground cover in live plant material |
| 40 - Wetlands Habitat Improvement and Maintenance | Improve or maintain habitat for wetland species | Increase targeted wetland species through habitat management |
| 44 - Snag and Down Log Management | Provide a habitat designed to support a more intensive level of snag and down log management | Retain a minimum of four snags per acre greater than 24 inches diameter breast height Maintain a minimum average density of three downed logs per acre, 20 inches in diameter by 10 feet in length, in all forest types This is equivalent to one log per acre, 32 feet in length, or two logs per acre, 16 feet in *length, or any like combination* |
| Range | | |
| 51 - Range Planning and Analysis | Graze these areas as part of adjoining allotments on slopes less than 60 percent | Analyze river use as part of existing allotments under Allotment Management Plans |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 52 - Range Management | Administer key forage producing areas to achieve proper use of forage resources and protect soil and water resources | Annually utilize 50 percent of key forage species Do not locate salt within the Mokelumne Wild River |
| 53 - Range Improvement - Nonstructural | Seed and fertilize disturbed areas to enhance forage resources | Hand treat small localized areas that are generally less than 1 acre |
| 54 - Range Improvement - Structural | Fence to manage or control livestock | Analyze need and location of fences through Allotment Management Plans and the EA process |
| 55 - Range Improvement - Maintenance | Maintain existing Allotment Plan improvements compatible with Wild River status. | Perform maintenance by the grazing permittee according to permit. |
| Timber | | |
| | | Wild River |
| 66 - Special Cutting - Other | Harvest timber to retain the integrity of each class of designated river | Do not allow harvesting in the Mokelumne Wild River because of its dual wilderness status |
| | | Scenic River |
| | Harvest on an unregulated schedule Periodically recover endemic tree mortality Salvage catastrophic insect, disease, or fire loss. | Harvest timber to meet established VQO's, applying even-aged regeneration cutting only where approved recreation site plans and VQO's permit |
| 77 - Release and Weeding | Maintain growth and stocking of reforested and wild stands at a level based on site potential | Apply all timber stand improvement methods for release or weeding of overstocked stands |
| 78 - Precommercial Thinning | Remove surplus trees in areas of excess stocking on all forest types and site classes | Apply precommercial thinning methods hand, mechanical, or chemical |
| Water and Soils | | |
| 81 - Water Yield Improvement | Accept water yield improvement incidental to Wild and Scenic River management | Allow weather modification activities |
| 82 - Runoff Regulation | Accept runoff regulation provided by existing streamflow maintenance dams and related facilities | |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 83 - Watershed Maintenance and Rehabilitation | Maintain stable watershed conditions | Where the beneficial uses of water are adversely affected by man's activities or natural disasters such as fire or flood<br><br>Stabilize stream channels and adjacent slopes, using methods that are in harmony with Management Area objectives,<br><br>utilize native plant species and natural rock to maintain stability |
| Minerals | | |
| 88 - Minerals Management - Locatables | Preserve the qualifying characteristics of the Mokelumne and Rubicon Rivers | Preclude undue and unnecessary degradation of the qualifying characteristics if surface disturbing activities are permitted by valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |
| 89 - Minerals Management - Leaseables | Preserve the qualifying characteristics of the Mokelumne and Rubicon Rivers | Preclude undue and unnecessary degradation of the qualifying characteristics if surface disturbing activities are permitted by valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |
| Lands | | |
| 93 - Withdrawals and Revocations | Preserve the qualifying characteristics of the Mokelumne and Ribucon Rivers | Conform to Public Law 94-579, Section 204 Withdrawal of the Mokelumne Wild River is withdrawn by prior designation of Mokelumne Wilderness |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 98 - Power Related Licenses and Permits | Prohibit licensing of hydroelectric projects that are on or directly affecting a designated river or a designated study river Other rivers under study for inclusion in the Wild and Scenic Rivers System will be protected from development until such time when a determination is made as to the river's eligibility for inclusion in the system, and if eligible, then as to its suitability for inclusion in the system | These are exclusion areas for transportation-utility corridors |
| Protection | | |
| 111 - Fire Management | Establish individual fire size objectives for this management area | Use least cost strategies to meet resource objectives Use "light hand on land" concept in suppression efforts |
| 113 - Prescriptive Fire Management | Determine where prescribed fire is appropriate to support and enhance resource objectives | In the interim, and consistent with basic fire suppression policy, control fires with the minimum impact on the environment Leave felled tree boles intact |
| 114 - Natural Fuels Management | Minimize environmental impacts and resource losses caused by wildfire through treatment of natural fuels | Treat natural fuels to a level and frequency that will attain outputs identified in the Forest Plan |
| | | Consider all fuel treatment methods mechanical, chemical, manual |
| | | Treatment standards will consider both existing conditions and the effect of future management activities in the area surrounding the project area |
| 115 - Activity Fuels Management | Minimize environmental impacts and resource losses caused by wildfire through treatment of activity fuels | Consider all fuel treatment methods mechanical, chemical, or manual |
| | Reduce long-term protection costs and suppression expenditures | Treat activity fuels to a level and frequency that will meet outputs identified in this plan |

## MANAGEMENT AREA NUMBER 3

### RESEARCH NATURAL AREA

Management Emphasis

Maintain a natural condition Limit uses to research, study, observation, monitoring, and educational activities that are nondestructive and nonmanipulative

Description

Four candidate Research Natural Areas are contained in Management Area Number 3, representing two SAF Types, two unusual plant associations, and one unique ecosystem These are

| Name | Type/Association | Size |
|---|---|---|
| Peavine | SAF 245 Pacific Ponderosa Pine | 1,113 acres |
| | SAF 246 Black Oak | |
| Station Creek | Sugar pine-white fir plant association | 749 acres |
| | White fir-rattlesnake orchid plant association | |

These candidate areas are recommended for establishment by the Chief of the Forest Service as part of the nationwide network of Research Natural Areas

| | | |
|---|---|---|
| Snow Canyon | Western white pine unique ecosystem | 300 acres 1/ |
| Middle Mountain | Mountain Hemlock | 400 acres 2/ |
| | Total | 2,562 acres |

Snow Canyon and Middle Mountain have been nominated by the Forest Supervisor as proposed Research Natural Areas Further evaluation will determine the appropriateness of these areas for formal designation by the Chief, Forest Service Snow Canyon, if approved, would receive dual designation with Mokelumne Wilderness Middle Mountain, if approved, would receive dual designation with Desolation Wilderness

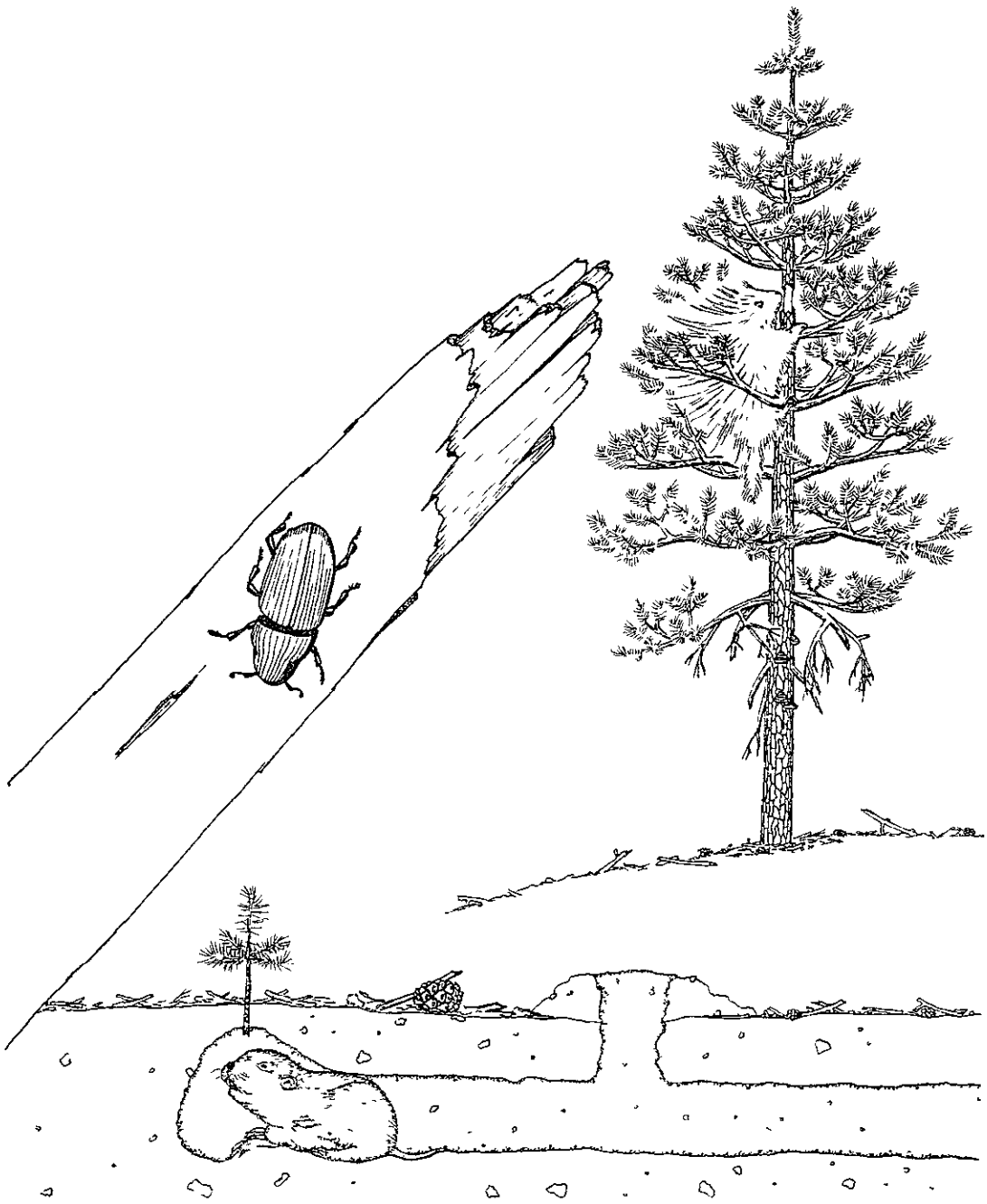
1/ 300 acres of Snow Canyon RNA overlap Mokelumne wilderness
2/ 400 acres of Middle Mountain overlap Desolation wilderness

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Recreation | | |
| 8 - Research Natural Areas | Protect undisturbed ecosystems for future research | Coordinate activities with the PSW/R5 Research Natural Area Committee |
| 14 - Visual Quality Objective - Preservation | Allow only ecological changes | Maintain existing visual condition |
| 25 Dispersed Recreation Management | Protect against activities that modify the environment | Discourage recreation uses such as picnicking, camping, hunting, and fishing, which contribute to modification of the RNA Expressly prohibit such uses if they threaten serious impairment of research or education values |
| 28 - Closed Off-Road Vehicle Management | Close Research Natural Areas yearlong to off-road vehicles | Exception may be made where escaped fire analysis or threat to life or property dictates otherwise |
| Fish and Wildlife | | |
| 35 - Fish and Wildlife Habitat Coordination | Maintain and enhance habitat for fish and wildlife species Coordinate habitat projects with the California Department of Fish and Game | Deer winter range habitat will not be maintained or enhanced within the portion of the Pacific Deer Herd winter range that is within the Peavine RNA<br><br>Some habitat recommendations listed in the Cooperative Pacific Deer Herd Plan will not be implemented |
| 45 - Hardwood Management | Manage oaks and other hardwoods for wildlife benefits, utilizable products, and aesthetic values | Planned management of black oak and other hardwoods will not be practiced within the Peavine RNA The existing age classes will remain unless a natural occurrence changes the composition |
| Range | | |
| 51 - Range Planning and Analysis | Exclude livestock grazing from the Research Natural Areas | Eliminate those portions of the Cody Meadows Allotment now included in the Station Creek RNA |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 54 - Range Improvement - Structural | Construct fences to exclude livestock that might interfere with research needs | Analyze actual need and location of fences in accordance with the adjoining allotment Management Plans and specific research proposals<br><br>Make construction costs part of the research project |
| 55 - Range Improvement - Maintenance | Maintain fences associated with research projects | Make maintenance the responsibility of the research project and cooperators |
| Timber | | |
| 79 - Fuelwood | Maintain natural condition | Close to fuelwood cutting |
| 80 - Christmas Trees and Miscellaneous Forest Products | Maintain natural condition | Do not allow harvest of miscellaneous forest products |
| Water and Soils | | |
| 83 - Watershed Maintenance and Rehabilitation | Rehabilitate RNA watersheds if natural recovery will take more than 10 years following the identification of any problems | Utilize native plant species for vegetative stabilization treatment |
| Minerals | | |
| These practices apply to valid existing rights for claims or leases located or issued prior to the effective date of withdrawal of the Research Natural Area | | |
| 88 - Minerals Management - Locatables | Preserve Research Natural Area ecosystems for future study while recognizing and accommodating existing rights | Prevent undue and unnecessary degradation of the ecosystem by limiting surface disturbing activities consistent with valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 89 - Minerals Management - Leasables | Preserve Research Natural Area ecosystems for future study while recognizing and accommodating existing rights. | Prevent undue and unnecessary degradation of the ecosystem by limiting surface disturbing activities consistent with valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |
| Lands | | |
| 93 - Withdrawals and Revocations | Preserve RNA ecosystems in a benchmark natural condition | Conform to Public Law 94-579, Section 204, upon formal designation of the candidate RNA's |
| 98 - Power Related Licenses and Permits | Inform the FERC that the proposal may affect the RNA and that use of that specific area for hydroelectric development would be inconsistent with the purpose for which the National Forest was created or acquired and inconsistent with the purpose of the RNA | This is an exclusion area for transportation-utility corridors |
| 99 - Property Boundary Location and Marking | Post and maintain Research Natural Area boundaries | Post boundaries in accordance with Forest Service Manual 4063 31 |
| Facilities | | |
| 101 - General Resource Access Road Development - Construction and Reconstruction | Physical improvements should not be permitted within Research Natural Areas | Do not construct or reconstruct roads inside the Research Natural Area boundary unless they contribute to research |
| 107 - Trail construction and Reconstruction - Special Purpose | Provide limited access for research needs | Construct only those special purpose trails needed in connection with research or education |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use least cost strategies to meet resource objectives Use "light hand on land" concept in suppression effort |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 114 - Natural Fuels Management | Preserve the vegetation for which the RNA was established | Prescribed fire may be used in certain circumstances See FSM 4063 34 for direction and authority |
| 116 - Integrated Pest Management | Let endemic insect and disease infestations run their course | |



## MANAGEMENT AREA NUMBER 4

### SPECIAL AREAS

**Management Emphasis**

Give recognition to Geological, Botanical, Archaeological and National Trails Special Areas
Manage the areas principally for their recreation use substantially in their natural condition
Preserve the integrity of the special interest features for which the areas were established.

**Description**

Special Interest Areas

| Name | Acres |
|---|---|
| Big Crater Geological | 127 |
| Little Crater Geological | 210 |
| Wrights Lake Bog Botanical | 65 |
| Rock Creek Botanical | 426 |
| Traverse Creek Botanical | 219 |
| Round Top Botanical/Geological | 4,033 1/ |
| Pyramid Creek Geological | 1,151 |
| Leonardi Falls Botanical | 219 |
| Mokelumne Archeological District | 12,200 2/ |
| TOTAL | 18,649 |

The areas listed above are established as Special Interest Areas pursuant to 36 CFR 294.1(a), and the authority vested in the Regional Forester by the Chief, Forest Service, upon approval of this Plan

Existing National Recreation Trails

| Name | Miles |
|---|---|
| Pacific Crest | 25 6 |
| Emigrant Summit | 16 7 |
| Pony Express | 10 0 |
| | 52.3 |

The Pacific Crest, and portions of the Pony Express and Emigrant Summit trails are formally designated

Candidate National Recreation Trails

| Name | Miles |
|---|---|
| Pony Express (Portion) | 26 0 |
| Rubicon Springs ORV | 6 0 |
| | 32 0 |

1/ 3,156 acres of Round Top overlap Mokelumne Wilderness
2/ 1,920 acres of Mokelumne Archaeological District overlap Mokelumne wilderness

These areas have been identified by the public and the Forest Service as having characteristics worth setting aside under protective status Establishment reports proposing designation of these candidates as National Recreation Trails will be prepared for Regional Forester approval

The Pony Express and the Emigrant Summit (Mormon/Carson Trail) are also candidates for National Historic Trail designation These areas have been determined to be eligible for National Historic Trail designation in the Draft Eligibility/Feasibility and Environmental Assessment prepared by the National Park Service Actual authorization of the trails as components of the National Historic Trails System will require passage of legislation by Congress

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Recreation | | |
| 2 - Recreation Opportunity Spectrum - Primitive<br>3 - Recreation Opportunity Spectrum - Semiprimitive Nonmotorized<br>4 - Recreation Opportunity Spectrum - Semiprimitive Motorized<br>5 - Recreation Opportunity Spectrum - Roaded Natural<br>6 - Recreation Opportunity Spectrum - Rural | Maintain a range of recreation experiences, since existing classes vary between identified Special Areas Keep Recreation Opportunity Spectrum levels at the approved class in the Recreation Opportunity Spectrum inventory | Manage dispersed recreation in these areas to maintain or improve the approved ROS classes consistent with Special Area values and implementation plans<br><br>Manage Mokelumne Archaeological District to an ROS Class of Roaded Natural |
| 9 - Cultural Resource Inventory and Evaluation | Provide for inventory and evaluation of archaeological and historical values of Special Areas. Nominate significant sites and area to NRHP | Follow methods as stipulated in FSM 2361 and "Cultural Resources Direction and Procedures," 2/12/82 Apply the National Register of Historic Places criteria in 36 CFR 60 and regulations in 36 CFR 63 to determine the eligibility of the cultural properties to the National Register |
| 10 - Cultural Resources Protection | Protect all significant cultural properties in Special Areas | Regulate vehicle travel on the Emigrant Summit and Pony Express Trails to protect the remaining historical and prehistorical properties of the trails and their associated features |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | Preserve the physical and scientific integrity of the Mokelumne Archaeological area while maintaining a healthy surrounding forest condition that complements recreation, wildlife, and scenic value | Allow unregulated timber harvesting on nonsignificant portions of the Mokelumne Archaeological Area Require a silviculturist and archaeologist to jointly design site protection measures during the EA stage of timber sale projects. |
| 11 - Cultural Resources Enhancement and Interpretation | Provide for interpretation of the historical and cultural values of Special Areas through signs, displays, brochures, and programs. | Follow professional interpretive standards as guided by FSM 2361, "Treatment of Archaeological Properties A Handbook" and National Park Service examples |
| 12 - Special Area Investigations | | Establish and post accurate boundaries for protection and maintenance of each area<br><br>Prepare an establishment report recommending designation by the Regional Forester of the Rubicon Springs ORV Trail and a portion of the Pony Express Trail as National Recreation Trails |
| 15 - Visual Quality Objective - Retention | Maintain a near natural visual character | Manage to a Visual Quality Objective of Retention This is the desired level for Special Areas |
| 16 - Visual Quality Objective - Partial Retention | Provide a high quality visual setting where changes are noticed but remain visually subordinate to adjacent landscapes | Manage to a Visual Quality Objective of Partial Retention This is the acceptable level for the Mokelumne Archaeological District and the Pacific Crest Trail |
| 21 - Interpretive Services Planning | Develop and update interpretive services plans for Special Areas | Identify and give priority to projects based on Special Area evaluations and nominations for establishment Identify objectives, audiences, interpretive messages, communication methods, and facility requirements for each |
| 22 - Interpretive Services Management | Interpret unique features of existing Special Areas | Prepare maps, brochures, signs and other interpretive devices to explain special features and reduce area damage |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 23 - Installation or Construction of Interpretive Services Facilities on Interpretive Services Sites | Construct interpretive facilities for Special Areas | Blend facilities to complement the unique character of each area, except for the Pacific Crest Trail, which allows for greater change |
| 25 - Dispersed Recreation Management | Provide for recreation activities that are consistent with Special Areas | Favor recreation activities that do not require extensive facilities and are designed for short stays |
| | Implement use of no-trace camping techniques | Prohibit use of campfires at Frog, Winnemucca, and Round Top Lakes |
| | Limit outfitter guide commercial Special Use Permits in the Round Top Special area to reduce overcrowding | Issue no new outfitter guide or recreation event Special Use Permits in the Round Top Special Area |
| 27 - Restricted Off-Road Vehicle Management | Make travel compatible with Special Areas | Use restricted access as a means of protection Establish Rubicon Springs National Recreation Trail expressly for 4-WD vehicles |
| 28 - Closed Off-Road Vehicle Management | Prevent use of certain Special Areas because of their ecological value or national policy | Close the following Special Areas<br>Round Top Botanical/geological<br>Pacific Crest Trail<br>Pony Express Trail<br>Emigrant Summit Trail (northeast of Horse Creek Saddle) |
| 29 - Cross-Country Skiing | Encourage cross-country skiing in the Round Top area | Avoid avalanche or other hazards<br>Prohibit heliskiing in the Round Top area |

Range

Grazing is generally excluded from these areas due to natural barriers or conditions However, Range Management is not currently in conflict with Special Areas, except Round Top, which is closed to grazing to protect its unique botanical community If conflict occurs in the future, fences or changes in grazing management may be needed

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Fish and Wildlife | | |
| 35 - Fish and Wildlife Habitat Coordination | Manage to allow natural ecological successions of wildlife, including natural wildfire and natural infestations of insects, insofar as they do not endanger resources outside such areas | Direct management toward maintenance of those species indigenous to the area prior to the area being established Give special emphasis to preservation of threatened, endangered, rare, or sensitive species |
| Timber | | |
| 66 - Special Cutting - Other | Harvest trees only in a manner consistent with protection of the resources for which the Special Areas are designated | Apply cutting methods to protect and enhance the unique features of each Special Area. |
| 73 - Artificial Stand Reestablishment | Maintain the unique values of the Special Interest Areas | Meet Regional stocking standards in native conifers<br><br>Modify site preparation techniques, if necessary to protect unique values, but allow all methods hand, mechanical, and chemical |
| 74 - Natural Stand Reestablishment | Maintain the unique values of the Special Interest Areas. | Meet Regional stocking standards in native conifers<br><br>Modify site preparation techniques, if necessary to protect unique values, but allow all methods hand, mechanical, and chemical |
| 77 - Release and Weeding | Maintain growth and stocking of reforested and wild stands at a level based on site potential | In Mokelumne Archaeological District, use applicable timber stand improvement methods for release and weeding of overstocked stands |
| 78 - Precommercial Thinning | Remove surplus trees in areas of excess stocking | In Mokelumne Archaeological District, use applicable timber precommercial thinning methods hand, mechanical or chemical |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Water and Soils | | |
| 83 - Watershed Maintenance and Rehabilitation | Rehabilitate areas where land disturbing activities such as improper grazing and overuse of trails and campsites have caused resource damage, if natural recovery will take more than 10 years | Where the beneficial uses of water are adversely affected due to man's activities or natural disasters such as fire and flood<br><br>Stabilize stream channels and side slopes using methods that are in harmony with the objectives of the particular special area<br><br>Where desirable utilize native plant species to maintain stability |
| Minerals | | |
| 88 - Minerals Management - Locatables | Maintain natural conditions Perpetuate the unique features of each Special Interest Area withdrawn under Management Practice 93 | Prevent undue and unnecessary degradation of Special Interest Area ecosystems by eliminating surface disturbing activities, consistent with valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |
| 89 - Minerals Management - Leasables | Maintain natural conditions Perpetuate the unique features of each Special Interest Area other than Mokelumne Archeological Area | Prevent undue and unnecessary degradation of Special Interest Area ecosystem by eliminating surface disturbing activities, consistent with valid exist- ing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |
| 90 - Minerals Management Mineral Materials | Maintain natural conditions Perpetuate the unique features of each Special Interest Area other than Mokelumne Archaeological Area | Do not issue mineral material permits |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 92 - Geologic Inventory and Evaluation | Define the geologic characteristics of Special Areas | For areas where geologic characteristics influenced establishment of the Special Area classification, compile existing information and conduct field studies as appropriate to provide background geologic information on each Special Area, for use during development of interpretive services. |
| Lands | | |
| 93 - Withdrawals and Revocations | Protect the inherent values of the Special Interest Areas other than Mokelumne Archeological Area. | Conform to Public Law 94-579, Section 204 |
| 98 - Power Related Licenses and Permits | If a hydroelectric project would be incompatible with a Special Area designation, recommend to the FERC that the proposal may affect the area and that use of that specific area for hydroelectric development would be inconsistent with the purpose for which the National Forest was created or acquired and inconsistent with the purpose of the Special Area | These are avoidance areas for transportation-utility corridors. |
| Facilities | | |
| 106 - Trail Construction and Reconstruction | Develop short-loop foot trails in designated Special Areas | Design and locate trails to convey the interpretive message associated with each Special Area<br><br>Do not change the Visual Quality objective as a result of construction<br><br>Maintain trails to Level II as a minimum |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use least cost strategies to meet resource objectives Use "light hand on land" concept in suppression effort |

## MANAGEMENT AREA NUMBER 5

### PRIMITIVE HIGH COUNTRY

**Management Emphasis**

Maintain a primitive forest setting that combines livestock grazing, minerals exploration and development, wildlife habitat management, watershed protection and dispersed recreation into an unaltered landscape Motorized use is not allowed

**Description**

Management Area Number 5 contains 281 acres The area is roadless It meets Forest Service criteria for the least developed Recreation Opportunity Spectrum class of Primitive No timber harvesting is practiced

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| **Recreation** | | |
| 2 - Recreation Opportunity Spectrum - Primitive | Provide for very low interaction between visitors Evidence of other users is minimal | Manage to Recreation Opportunity Spectrum of Primitive |
| 9 - Cultural Resources Inventory and Evaluation | Identify all significant cultural properties that may be affected through recreation or other uses<br><br>Conduct inventories to expand the data base on high elevation sites | Follow FSM 2361 and "Cultural Resources Direction and Procedures", 2/12/82 |
| 10 - Cultural Resources Protection | Protect all significant properties within Primitive High Country | Follow Manual of Mitigation Measures (MOMM) |
| 11 - Cultural Resources Enhancement | Enhance properties in keeping with their assessed value and associated level of public interest | Develop maps, displays, brochures, and signs for visitor use and enjoyment |
| 14 - Visual Quality Objective - Preservation | Provide a high quality visual setting where changes are unnoticed | Manage to a Visual Quality Objective of Preservation. This is the desired VQO for Primitive High Country |
| 15 - Visual Quality Objective - Retention | Provide a high quality visual setting where changes are rarely evident | Manage to a Visual Quality Objective of Retention This is an acceptable VQO for Primitive High Country |
| 19 - Visual Resource Improvement | Maintain approved Visual Quality Objectives | When the visual setting does not meet an acceptable level, mitigate impacts or restore the lands to Retention |
| 25 - Dispersed Recreation Management | Provide recreation opportunities that harmonize with the environment | Develop maps, brochures, and publications for visitor use that list dispersed recreation activities |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Stress backcountry manners and no-trace camping<br><br>Issue outfitter guide Special Use Permits to facilitate this use, provided they do not contribute to overuse of the area Do not authorize permanent campsites |
| 28 - Closed Off-Road Vehicle Management | Close the area to all vehicle use | Make exception when Escaped Fire Situation Analysis or threat to life and property dictate otherwise |
| 29 - Cross-Country Skiing | Provide cross-country skiing opportunities Locate support facilities such as parking lots, sanitation, ski huts, and shelters outside of Primitive High Country.<br><br>Encourage the private sector to furnish these facilities and locate them on National Forest land only when private land is not available and the need for National Forest land is fully justified | Avoid avalanche or other hazard areas Use maps, brochures, and 24-hour recorded phone messages to advise users of snow conditions Prohibit heliskiing<br><br>Shelters and ski huts will not be operated by the Forest Service. |
| Fish and Wildlife | | |
| 40 - Wetlands Habitat Improvement and Maintenance | Improve or maintain habitat for wetland species | Increase targeted wetland species through habitat management |
| 42 - Habitat Improvement - Old Growth | Provide late-successional habitat for wildlife species associated with old-growth forests | Maintain old-growth areas in high quality condition according to the habitat criteria for old-growth Keep the size of these areas greater than 100 acres where stand composition allows |
| Range | | |
| 51 - Range Planning and Analysis | Analyze and maintain existing and potential grazing allotments | Make environmental analyses for new allotments, major changes in class of livestock, or a more intensive management system |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 52 - Range Management | Administer allotments to achieve proper use and protection of other resources | Conduct allotment inspections and readiness, utilization, and condition, and trend surveys |
| 53 - Range Improvement - Nonstructural | Perform minor, nonmotorized reseeding of disturbed areas, and fertilization and hand removal of competing vegetation, to enhance forage production on a small scale | Limit activities to areas less than 5 acres |
| 54 - Range Improvement - Structural | Construct range improvements, primarily fences and water developments, to aid in the management of livestock | Make improvements needed to meet objectives of specific Allotment Management Plans Use non-motorized construction techniques |
| 55 - Range Improvement - Maintenance | Maintain existing improvements | Perform maintenance by permittee using nonmotorized access and techniques |
| Timber | | |
| 79 - Fuelwood | Maintain natural condition | Close to fuelwood cutting |
| 80 - Christmas Trees and Miscellaneous Forest Products | Maintain natural condition | Do not allow harvest of miscellaneous forest products |
| Water and Soils | | |
| 83 - Watershed Maintenance and Rehabilitation | Rehabilitate areas where land disturbing activities such as improper grazing and overuse of recreation trails and campsite use have caused resource damage, if natural recovery will take longer than 10 years | Where the beneficial uses of water are adversely affected due to man's activities or natural disasters such fire and flood<br><br>Stabilize stream channels and adjacent slopes, using non-mechanized and unconspicuous methods that are in harmony with the Management Area objectives<br><br>Utilize native plant species and natural rock for stabilization, where costs are not prohibitive |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Minerals | | |
| 88 - Minerals Management - Locatables | Allow mineral entry under the Mineral Laws. | State a preference for foot, horse, or helicopter access to claims when evaluating Plans of Operations If motorized travel is the only reasonable means of access, then change the ROS class of the affected area to Semiprimitive Motorized and keep authorized roads at the lowest possible maintenance level needed to develop the minerals |
| 89 - Minerals Management - Leasables | Issue mineral leases. | State a preference for foot, horse, and helicopter access to leases when they are issued. If motorized travel is the only reasonable means of access, then change the ROS class of the affected area to Semiprimitive Motorized and keep authorized roads at the lowest possible maintenance level needed to develop the minerals |
| Lands | | |
| 98 - Power Related Licenses and Permits | Recommend to the FERC that project proposals are inconsistent with or interfere with National Forest purposes only if the project cannot be mitigated sufficiently so as not to adversely affect the designated land allocation Site-specific environmental analyses and documentation will be completed before the Forest submits its 4(e) report to the FERC | This is an avoidance area for transportation-utility corridors |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use least cost suppression strategies to meet resource objectives |
| 113 - Prescriptive Fire Management | Use of prescribed fire is acceptable to meet management area objectives | Treat fuelbeds which are the result of fire exclusion to reduce unnatural buildups of fuel Create a more natural ecological condition associated with primitive dispersed area management |

## MANAGEMENT AREA NUMBER 6

### SEMIPRIMITIVE NONMOTORIZED HIGH COUNTRY

**Management Emphasis**

Maintain a semiprimitive nonmotorized type forest setting that combines livestock grazing, minerals exploration and development, wildlife habitat management, watershed protection and dispersed recreation into natural appearing landscape. Motorized use is not normally allowed

**Description**

Management Area Number 6 contains 16,833 acres The area is essentially undisturbed Land altering practices are limited in scope and duration It meets Forest Service criteria for the Recreation Opportunity Spectrum class of Semiprimitive Nonmotorized Special timber harvest methods to enhance recreation or salvage insect and disease losses are employed

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Recreation | | |
| 3 - Recreation Opportunity Spectrum - Semiprimitive Nonmotorized | Provide for low interaction between visitors Evidence of other use is minimal | Manage to a Recreation Opportunity Spectrum of Semiprimitive Nonmotorized Minimize controls and restrictions |
| 9 - Cultural Resources Inventory and Evaluation | Identify all significant cultural properties that may be affected through recreation or other uses<br><br>Conduct inventories to expand the data base on high elevation sites | Follow FSM 2361 and "Cultural Resources Direction and Procedures," 2/12/82 |
| 10 - Cultural Resources Protection | Protect all significant properties within Primitive High Country | Follow Manual of Mitigation Measures (MOMM) |
| 11 - Cultural Resources Enhancement | Enhance properties in keeping with their assessed value and associated level of public interest | Develop maps, displays, brochures, and signs for visitor use and enjoyment |
| 14 - Visual Quality Objective - Preservation | Provide a high quality visual system where changes are unnoticed | Manage to a Visual Quality Objective of Preservation This is the desired VQO for Semiprimitive Nonmotorized High Country |
| 15 - Visual Quality Objective - Retention | Provide a high quality visual setting where changes are rarely evident | Manage to a Visual Quality Objective of Retention This is an acceptable VQO for Semiprimitive Nonmotorized High Country |
| 19 - Visual Resource Improvement | Maintain an acceptable Visual Quality Objective | When the visual setting is reduced below acceptable, mitigate the impacts or restore the lands to Retention |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 20 - Developed Recreation and Visitor Information Services Site Construction and Reconstruction 1/ | Provide developed recreation opportunities that blend with the environment. | Limit development to small, primitive sites, using native materials. |
| 24 - Developed Recreation Site Management, Public Sector 1/ | Hold operation, maintenance, and administration at a standard level | Require user pack-out of non-burnable trash Emphasize visitor self-housekeeping. |
| 25 - Dispersed Recreation Management | Provide dispersed recreation opportunities that blend with the environment | Develop maps, brochures, and publications for visitor use that list dispersed recreation activities |
| | Limit commercial outfitter guide and recreation event special use permits to prevent overcrowding. | Stress back country manners and no-trace camping.<br><br>Issue no new permits at Margaret, Shealor, Devils Hole, Hidden, Devils, or Summit Meadow Lakes |
| 28 - Closed Off-Road Vehicle Management | Close the area to all vehicle use during the summer season. Allow use by over-snow vehicles during the winter season by permit only | Make exceptions when Escaped Fire Situation Analysis or threat to life and property dictate otherwise Portions of the area may be opened temporarily to salvage or harvest timber, develop mineral resources, and facilitate grazing |
| 29 - Cross-Country Skiing | Provide cross-country skiing opportunities. Locate support facilities requiring roads or parking outside of Semi-primitive Nonmotorized High Country Allow primitive ski huts or shelters in line with Regional Policy | Avoid avalanche or other hazard areas. Use maps, brochures, and 24-hour recorded phone messages to advise users of snow conditions To avoid conflict, confine permitted snow vehicle use to designated areas and routes described in the Eldorado Facility and Transportation Map Allow snow vehicle packing of maintained ski trails Prohibit heliskiing |

1/ Note that developed sites are treated separately under Management Area Number 9. Practices 20 and 24 are listed here to show the relationship between Developed Sites and High Country emphasis

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Fish and Wildlife | | |
| 40 - Wetlands Habitat Improvement and Maintenance | Improve or maintain habitat for wetland species | Increase targeted wetland species through habitat management |
| 42 - Habitat Improvement - Old Growth | Provide habitat for wildlife species associated with late-successional and old-growth forests | Maintain old growth areas in high quality condition according to the habitat criteria for old growth Keep the size of these areas greater than 100 acres where stand composition allows. |
| Range | | |
| 51 - Range Planning and Analysis | Analyze and maintain existing and potential grazing allotments | Make environmental analyses for new allotments, major changes in class of livestock, or a more intensive management system |
| 52 - Range Management | Administer allotments to achieve proper use and protection of other resources | Conduct allotment inspections and readiness, utilization, and condition and trend surveys |
| 53 - Range Improvement - Nonstructural | Perform minor, nonmotorized, reseeding of disturbed areas, and fertilization and hand removal of competing vegetation, to enhance forage production on a small scale | Limit activities to areas less than 5 acres |
| 54 - Range Improvement - Structural | Construct range improvements, primarily fences and water developments, to aid in the management of livestock | Make improvements needed to meet objectives of specific Allotment Management Plans Use non-motorized construction techniques |
| 55 - Range Improvement - Maintenance | Maintain existing improvements | Perform maintenance by permittee using nonmotorized access and techniques |
| Timber | | |
| 66 - Special Cutting - Other | Harvest timber to retain a Semi-primitive Nonmotorized setting | Cut to meet visual objectives, to prevent disease, to minimize the spread of pests, and to accommodate recreation development<br><br>Vary the number and type of trees cut depending upon conditions and desired results |

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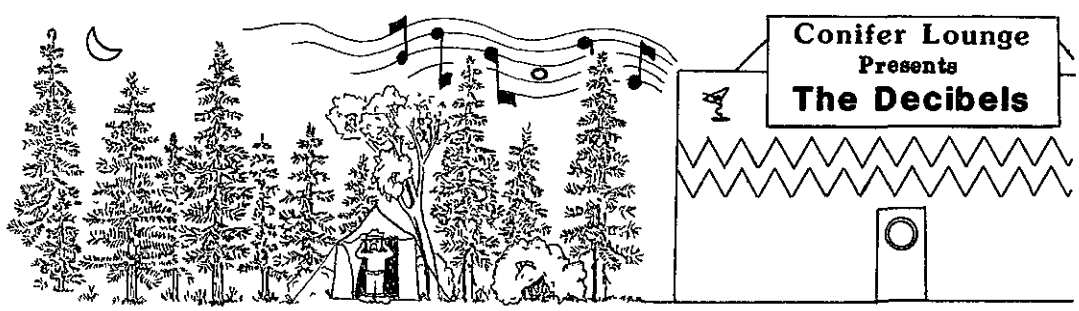
| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 69 - Ground Based Harvest System<br>70 - Cable Harvest System<br>71 - Skyline Harvest System<br>72 - Special Harvest System | Apply each system based on utilizing the most efficient one while protecting visual and recreation values. | Use harvest systems that require road construction only if planned roads can be treated so as not to adversely affect the recreation experience of the area Obliterate roads or convert them to trails following harvest |
| Water and Soils | | |
| 83 - Watershed Maintenance and Rehabilitation | | Where the beneficial uses of water are adversely affected due to man's activities or natural disasters such as fire and flood<br><br>Stabilize stream channels and adjacent slopes, using methods that are in harmony with Management Area objectives<br><br>Use native plant species and natural rock for stabilization, where costs are not prohibitive |
| Minerals | | |
| 88 - Minerals Management - Locatables | Allow mineral entry under the Mineral Laws. | If motorized travel is the only reasonable means of access, then chang the ROS class of the affected area to Semiprimitive motorized and keep authorized roads at the lowest possibl maintenance level needed to develop th minerals |
| 89 - Minerals Management - Leasables | Issue mineral leases. | If motorized travel is the only reasonable means of access, then chang the ROS class of the affected area to Semiprimitive motorized and keep authorized roads at the lowest possibl maintenance level need to develop the minerals |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Lands | | |
| 98 - Power Related Licenses and Permits | Recommend to the FERC that a project is inconsistent with or interferes with National Forest purposes only if the project cannot be mitigated sufficiently so as not to adversely affect the designated land allocation | Permit no access road construction to project developments<br><br>This is an avoidance area for transportation-utility corridors |
| Facilities | | |
| 106 - Trail Construction and Reconstruction | Retain the nonmotorized theme of this management area | Construct and reconstruct trails to accommodate foot and equestrian traffic only |
| 108 - Transportation Management - Trails | Manage and maintain trails for nonmotorized use. | Restrict motorized use from all trails |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use least cost suppression strategies to meet resource objectives |
| 113 - Prescriptive Fire Management | Use of prescribed fire is acceptable to meet management area objectives | Treat fuelbeds that are the result of fire exclusion to reduce unnatural buildups of fuel Create a more natural ecological condition associated with primitive dispersed area management |



## MANAGEMENT AREA NUMBER 7

### SEMIPRIMITIVE MOTORIZED HIGH COUNTRY

**Management Emphasis**

Maintain a semiprimitive motorized forest setting that combines livestock grazing, minerals exploration and development, wildlife habitat management, watershed protection and dispersed recreation into a natural appearing landscape. Motorized use is allowed.

**Description**

Management Area Number 7 contains 27,569 acres. The area is essentially undisturbed Land altering practices are limited in scope and duration It meets Forest Service criteria for the Recreation Opportunity Spectrum class of Semiprimitive Motorized Special timber harvest methods are employed to enhance dispersed recreation and visual quality or salvage insect and disease losses

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| **Recreation** | | |
| 4 - Recreation Opportunity Spectrum - Semiprimitive Motorized | Provide for low concentrations of use Evidence of other use starts to become obvious. | Manage to a Recreation Opportunity Spectrum of Semiprimitive Motorized |
| 9 - Cultural Resources Inventory and Evaluation | Identify all significant cultural properties that may be affected through recreation or other uses.<br><br>Conduct inventories to expand the data base on high elevation sites | Follow FSM 2361 and "Cultural Resources Direction and Procedures," 2/12/82 |
| 10 - Cultural Resources Protection | Protect all significant properties within Primitive High Country. | Follow Manual of Mitigation Measures (MOMM) |
| 11 - Cultural Resources Enhancement | Enhance properties in keeping with their assessed value and associated level of public interest | Develop maps, displays, brochures, and signs for visitor use and enjoyment. |
| 15 - Visual Quality Objective - Retention | Provide a high quality visual setting where changes are rarely evident | Manage to a Visual Quality Objective of Retention This is the desired VQO for Semiprimitive Motorized High Country. |
| 16 - Visual Quality Objective - Partial Retention | Provide a high quality visual setting where changes are noticed but remain visually subordinate to adjacent landscapes | Manage to a Visual Quality Objective of Partial Retention This is an acceptable VQO for Semiprimitive Motorized High Country |
| 19 - Visual Resource Improvement | Maintain an acceptable Visual Quality Objective | When the visual setting is reduced below acceptable, mitigate the impacts or restore the lands to Partial Retention |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 20 - Developed Recreation and Visitor Information Services Site Construction and Reconstruction 1/ | Provide developed recreation opportunities that blend with the environment | Limit development to small, primitive sites, using native materials Locate improvements near water Provide facilities to accommodate off-road vehicle travel along designated routes |
| 24 - Developed Recreation Site Management, Public Sector 1/ | Hold operation, maintenance, and administration at a standard level | Require user pack-out of all non-burnable trash Emphasize visitor self-housekeeping |
| 25 - Dispersed Recreation Management | Provide dispersed recreation opportunities that blend with the environment | Develop maps, brochures, and publications for visitor use that list dispersed recreation activities<br><br>Stress backcountry manners and no-trace camping |
| | Limit the number of Commercial Outfitter-Guide and Recreation Event Special Use Permits to prevent overcrowding | Issue no new permits at Scout, Carson, and Granite Lakes |
| 29 - Cross-Country Skiing | Provide cross-country skiing opportunities | Avoid avalanche or other hazard areas Keep separate from motorized use areas Provide for dual summer-winter use of trailhead facilities Use maps, brochures, and 24-hour recorded phone messages to advise users of snow conditions Prohibit heliskiing |
| Fish and Wildlife | | |
| 40 - Wetlands Habitat Improvement and Maintenance | Improve or maintain habitat for wetland species | Increase targeted wetland species through habitat management |
| 42 - Habitat Improvement - Old Growth | Provide habitat for wildlife species associated with late-successional and old-growth forests | Maintain old-growth areas in high quality condition according to the habitat criteria for old growth Keep the size of these areas greater than 100 acres where stand composition allows |

1/ Note that developed sites are treated separately under Management Area Number 9 Practices 20 and 24 are listed here to show the relationship between Developed Sites and High Country Emphasis

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| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 43 - Habitat Improvement - Vegetation Enhancement | Enhance productivity of forage and cover plants for wildlife. | Adhere to Eldorado criteria for Management Indicator Species Increase mast production and browse. |
| 44 - Snag and Down Log Management | Provide a habitat designed to support a more intensive level of snag and down log management. | As a minimum, maintain an average density of three downed logs per acre, 20 inches in diameter by 10 feet in length, in all forest types. This is equivalent to one log per acre, 32 feet in length, or 2 logs per acre, 16 feet in length, or any like combination. |
| Range | | |
| 51 - Range Planning and Analysis | Analyze and maintain existing and potential grazing allotments. | Make environmental analyses for new allotments, major changes in class of livestock, or a more intensive management system. |
| 52 - Range Management | Administer allotments to achieve proper use and protection of other resources. | Conduct allotment inspections and readiness, utilization, and condition and trend surveys |
| 53 - Range Improvement - Nonstructural | Provide a full range of forage improvement methods at a moderate size. | Limit activities to 5 acres |
| 54 - Range Improvement - Structural | Provide a full range of structural improvements to achieve proper management of livestock | Make improvements needed to meet objectives of approved Allotment Management Plans by project environmental analyses. |
| 55 - Range Improvement - Maintenance | Maintain existing improvements | Perform maintenance by the permittee using motorized access and techniques. |
| Timber | | |
| 66 - Special Cutting - Other | Harvest timber to retain a Semi-primitive Motorized setting | Cut to meet visual objectives to prevent the spread of insects or disease, and to accommodate recreation development The number and type of trees cut and snags retained may vary depending on conditions and desired result Consult with appropriate resource specialists for determination |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 69 - Ground Based Harvest System<br>70 - Cable Harvest System<br>71 - Skyline Harvest System<br>72 - Special Harvest System | Apply each system based on utilizing the most efficient one while protecting visual and recreation values | Use harvest systems that do not require road construction or reconstruction unless new or improved roads can be made compatible with recreation management |
| Water and Soils | | |
| 81 - Water Yield Improvement | Practice water yield improvement where opportunities exist | Treat coniferous forest stands and meadows, using techniques that meet a Partial Retention Visual Quality Objective and are designed to increase water yield |
| 82 - Runoff Regulation | Practice runoff regulation where opportunities exist | Provide regulation in connection with water yield improvement activities, using techniques that meet a Partial Retention Visual Quality Objective Design timber harvest to prolong the snow melt period and encourage deep seepage |
| 83 - Watershed Maintenance and Rehabilitation | | Where the beneficial uses of water are adversely affected due to man's activities or natural disasters such as fire or flood<br><br>Stabilize stream channels and adjacent slopes, using methods that are in harmony with Management Area objectives<br><br>Use native plant species and natural rock for stabilization, where costs are not prohibitive |
| 86 - Soil Support Services | Manage off-road vehicle travel to protect the soil resource from damage by erosion | The following areas are not suitable for off-road vehicle activity<br><br>Soils having cold soil temperatures,<br><br>areas having a high landslide hazard,<br><br>soils having a high erosion potential, |

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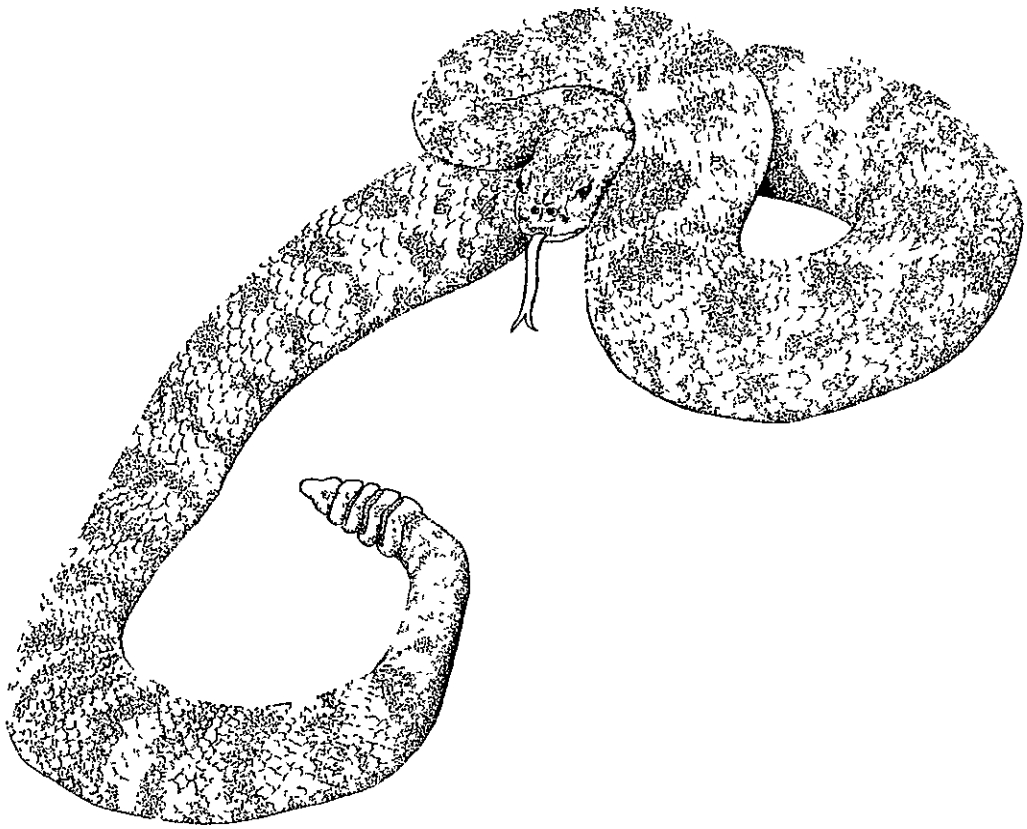
| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | areas of high soil moisture or areas having shallow water tables (springs, seeps, meadows, etc ),<br><br>soils of low trafficability when wet These soils have heavy loam to clay subsoils and occur below 5,000 feet elevations |
| Minerals | | |
| 88 - Minerals Management - Locatables | Allow mineral entry under the Mineral Laws | Allow motorized access and development when evaluating Plans of Operation |
| 89 - Minerals Management - Leasables | Issue mineral leases | Authorize motorized access to leases |
| Lands | | |
| 98 - Power Related Licenses and Permits | Incorporate special techniques into design, construction, and maintenance of project features so they are subdued on the landscape | Minimize road construction Normally obliterate roads after project completion Maintain project facilities without permanent roads Require instream flows that satisfy aesthetic and recreation needs where streams border this Management Area<br><br>This is an avoidance area for transportation-utility corridors |
| Facilities | | |
| 108 - Transportation Management - Trails | Keep foot and equestrian trails in open status yearlong. | Maintain to Levels I, II, and III |
| | Restrict motorized trail use to periods when rutting, soil compaction, and disturbance do not occur | Maintain to Levels II and III Use signs to indicate degree of difficulty from easy to most difficult, based on grade, soil type, and alignment of trails |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use least cost suppression strategies to meet resource objectives |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 113 - Prescriptive Fire Management | Use of prescribed fire is acceptable to meet management area objectives | Treat fuelbeds which are the result of fire exclusion to reduce unnatural buildups of fuel Create a more natural ecological condition associated with primitive dispersed area management |



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## MANAGEMENT AREA NUMBER 8

### ROADED NATURAL HIGH COUNTRY

**Management Emphasis**

Maintain a roaded natural type forest setting that provides a range of recreation opportunities and experiences Accommodate both motorized and nonmotorized vehicle travel and make it compatible with the grazing, minerals exploration and development, wildlife, water and soil resources

**Description**

Management Area Number 8 contains 13,855 acres The area is dissected by major transportation facilities but adjacent lands are essentially natural It meets the Forest Service criteria for the Recreation Opportunity Spectrum class of Roaded Natural Special timber harvest methods are employed to enhance dispersed recreation and visual quality or salvage insect and disease losses

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| **Recreation** | | |
| 5 - Recreation Opportunity Spectrum - Roaded Natural | Provide for low to moderate interaction between users Sights and sounds of others are clearly evident. | Manage to a Recreation Opportunity Spectrum of Roaded Natural |
| 9 - Cultural Resource Inventory | Identify all significant cultural properties that may be affected through recreation or other uses<br><br>Conduct inventories to expand the data base on high elevation sites. | Follow FSM 2361 and "Cultural Resources Direction and Procedures," 2/12/82 |
| 10 - Cultural Resources Protection | Protect all significant properties within Primitive High Country. | Follow Manual of Mitigation Measures (MOMM) |
| 11 - Cultural Resource Enhancement | Enhance properties in keeping with their assessed value and associated level of public interest. | Develop maps, displays, brochures, and signs for visitor use and enjoyment |
| 15 - Visual Quality Objective - Retention | Provide a high quality visual setting where changes are rarely evident | Manage to a Visual Quality Objective of Retention. This is the desired V for Roaded Natural High Country |
| 16 - Visual Quality Objective - Partial Retention | Provide a high quality visual setting where changes are noticed but remain visually subordinate to adjacent landscapes | Manage to a Visual Quality Objective of Partial Retention This is an acceptable for Roaded Natural High-Country |
| 19 - Visual Resource Improvement | Maintain approved Visual Quality Objectives | When visual setting is temporarily reduced to Modification, mitigate th impacts and restore the lands to Partial Retention |

| PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Developed Recreation and Visitor Information Services Site, Construction and Reconstruction 1/ | Provide developed recreation opportunities that blend with the environment | Limit development to small, primitive sites, using native materials Locate improvements near the transportation facilities |
| 24 - Developed Recreation Site Management, Public Sector 1/ | Hold operation, maintenance, and administration at a standard level. | |
| 25 - Dispersed Recreation Management | Provide dispersed recreation opportunities that have low impact. Limit commercial outfitter guide Special Use Permits to prevent overcrowding | Favor activities that do not require facilities and are short duration of stay |
| | | Issue no new permits in the Carson Pass area outside of the Emigrant Summit Trail Corridor |
| 28 - Closed Off-Road Vehicle Management | Prevent conflicts with cross-country skiers and hikers | Close those areas near the Sierra Crest where conflicts occur |
| 29 - Cross-country Skiing | Provide cross-country skiing opportunities | Avoid avalanche or other hazard areas Keep separate from motorized use areas Provide for dual summer-winter use of trailhead facilities Use maps, brochures, and 24-hour recorded phone messages to advise users of snow conditions Prohibit heliskiing. |
| Fish and Wildlife | | |
| 40 - Wetlands Habitat Improvement and Maintenance | Improve or maintain habitat for wetland species. | Increase targeted wetland species through habitat management |
| 42 - Habitat Improvement - Old Growth | Provide habitat for wildlife species associated with late-successional and old-growth forests. | Maintain old growth areas in high quality condition according to the habitat criteria for old growth Keep the size of these areas greater than 100 acres where stand composition allows |

1/ Note that developed sites are treated separately under Management Area Number 9 Practices 20 and 24 are is listed here to show the relationship between developed sites and High Country emphasis

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 43 - Habitat Improvement - Vegetation Enhancement | Enhance productivity of forage and cover plants for wildlife. | Adhere to Eldorado criteria for Management Indicator Species Increase mast production and browse |
| 44 - Snag and Down Log Management | Provide a habitat designed to support a more intensive level of snag and down log management. | As a minimum, maintain an average density of three downed logs per acre, 20 inches in diameter by 10 feet in length, in all forest types This is equivalent to one log per acre, 32 feet in length, or 2 logs per acre, 16 feet in length, or any like combination |
| Range | | |
| 51 - Range Planning and Analysis | Analyze and maintain existing and potential grazing allotments. | Make environmental analyses for new allotments, major changes in class of livestock, or a more intensive management system |
| 52 - Range Management | Administer allotments to achieve proper use and protection of other resources | Conduct allotment inspections and readiness, utilization, and condition and trend surveys |
| 53 - Range Improvement - Nonstructural | Provide a full range of forage improvement methods at a moderate size | Restrict activities to 5 acres or less |
| 54 - Range Improvement - Structural | Provide full range of structural improvements to achieve proper management of livestock | Make improvements needed to meet objectives of approved Allotment Management Plans by project environmental analyses |
| 55 - Range Improvement - Maintenance | Maintain existing improvements | Perform maintenance through the permittee using motorized access and techniques |
| Timber | | |
| 66 - Special Cutting - Other | Harvest timber to retain a Roaded Natural setting | Cut to meet visual objectives, to prevent the spread of insects or disease, and to accommodate recreation development The number and type of trees cut may vary depending upon conditions and desired results Consult with appropriate resource specialists for determination |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 69 - Ground Based Harvest System<br>70 - Cable Harvest System<br>71 - Skyline Harvest System<br>72 - Special Harvest System | Apply each system based on utilizing the most efficient one while protecting visual and recreation values | Use harvest systems that do not require road construction or reconstruction unless new or improved roads can be made compatible with recreation management |
| 74 - Natural Stand Reestablishment | Encourage natural regeneration to increase recreation values. | Apply site preparation techniques to enhance dispersed recreation opportunities Allow temporary disturbances that accomplish long-term improvements |
| 79 - Fuelwood | Utilize fuelwood removal to the extent that recreational values are not diminished | Encourage removal of fuelwood where fuel reduction is desirable and where visual quality can be improved |
| 80 - Christmas Tree and Miscellaneous Forest Products | Utilize miscellaneous forest products to the extent that recreation values are not diminished | Encourage removal of miscellaneous products where fuel reductions are desirable and where visual quality can be improved |
| Water and Soils | | |
| 81 - Water Yield Improvement | Practice water yield improvement where opportunities exist | Treat coniferous forest stands and meadows, using techniques that meet a Partial Retention Visual Quality Objective and are designed to increase water yield |
| 82 - Runoff Regulation | Practice runoff regulation where opportunities exist | Provide regulation in connection with water yield improvement activities, using techniques that meet a Partial Retention Visual Quality Objective Design timber harvest to prolong the snow melt period and encourage deep seepage |
| 83 - Watershed Maintenance and Rehabilitation | | Where the beneficial uses of water are adversely affected due to man's activities or natural disasters such as fire or flood<br><br>Stabilize stream channels and adjacent slopes, using methods that are in harmony with Management Area objectives |

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| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Use native plant species and natural rock for stabilization, where costs are not prohibitive. |
| 86 - Soil Support Services | Manage off-road vehicle travel to protect the soil resource from damage by erosion. | The following areas are not suitable for off-road vehicle activity· |
| | | Soils having cold soil temperatures, |
| | | areas having a high landslide hazard, |
| | | soils having a high erosion potential; |
| | | areas of high soil moisture or areas having shallow water tables (springs, seeps, meadows, etc.), |
| | | soils of low trafficability when wet. These soils have high amounts of silt-sized or smaller particles and occur primarily below 5,000 feet |
| Minerals | | |
| 88 - Minerals Management - Locatables | Allow mineral entry under the 1872 Mineral Law. | Allow motorized access and development when evaluating Plans of Operation. |
| 89 - Minerals Management - Leasables | Issue mineral leases. | Authorize motorized access to leases. |
| Lands | | |
| 98 - Power Related Licenses and Permits | Incorporate special design techniques into construction and maintenance of project features so they are subdued on the landscape. | Minimize road construction. Normally restrict use of access roads to project facilities Require instream flows that satisfy aesthetic and recreation needs where streams border this Management Area |
| | | This area is a potential window, with mitigation, for transportation-utility corridors |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Facilities | | |
| 108 - Transportation Manangement - Trails | Keep foot and equestrian trails open yearlong | Maintain to Levels I, II, and III |
| | Restrict motorized trail use to periods when rutting, soil compaction and disturbance do not occur | Maintain to Levels II and III<br>Use signs to indicate degree of difficulty from easy to most difficult, based on grade, soil type, and alignment of trails |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use least cost suppression strategies to meet resource objectives. |
| 112 - Activity Fuels Management | Minimize environmental impacts and resources losses caused by wildfire through treatment of activity fuels | Consider all fuel treatment methods mechanical, chemical, or manual |
| | Unplanned ignitions shall receive an appropriate suppression response. Fires will be either confined, contained, or dontrolled | Treat activity fuels to a level and frequency that will meet outputs identified in this Plan.<br>Burn area objectives and burning conditions will determine the appropriate suppression strategy for unplanned ignitions |
| 113 - Prescriptive Fire Management | Use of prescribed fire is acceptable to meet management area objectives | Treat fuelbeds which are the result of fire exclusion to reduce unnatural buildups of fuel Create a more natural ecological condition associated with primitive dispersed area management |

## MANAGEMENT AREA NUMBER 9

### EXISTING DEVELOPED RECREATION SITES

**Management Emphasis**

Provide developed recreation opportunities for the public Maintain facilities for the convenience of the user Preserve or improve the natural forest setting surrounding these facilities

**Description**

Management Area Number 9 contains 844 acres These are existing campgrounds, picnic grounds, observation sites, boating sites, interpretive sites and information sites operated and maintained by the Forest Service, FERC Licensees, or Concessionairs

**EXISTING SITES**

| Name | Site No | Kind | Name | Site No | Kind |
|---|---|---|---|---|---|
| Shot Rock | 087 0 | Observation Site | Lovers Leap | 523 0 | Family Campground |
| Peddler Hill | 831 6 | Observation Site | Vista Overflow | 686 0 | Family Campground |
| Leek Springs | 992 0 | Observation Site | China Flat | 482 5 | Family Campground |
| Hell Hole Vista | 101 0 | Observation Site | Capps Crossing | 977 5 | Family Campground |
| Big Hill | 060 5 | Observation Site | Bear River | 980 0 | Group Campground |
| Hell Hole | 109 4 | Boating Site | Black Oak | 107 6 | Group Campground |
| Loon Lake | 014 4 | Boating Site | Wench Creek | 048 6 | Group Campground |
| Yellow Jacket | 046 2 | Boating Site | Bear River | 980 0 | Group Campground |
| Union Valley | 055 2 | Boating Site | Middle Meadows | 144 5 | Group Campground |
| Ice House | 584 4 | Boating Site | Woods Lake | 864 6 | Picnic Ground |
| Stumpy Meadows | 685 0 | Boating Site | Bear Creek | 085 0 | Picnic Ground |
| Mokelumne | 817 0 | Family Campground | Pashoda | 055 5 | Picnic Ground |
| White Azalea | 818 0 | Family Campground | Ice House | 584 8 | Picnic Ground |
| Silver Lake | 856 5 | Family Campground | Bridal Veil | 273 0 | Picnic Ground |
| Woods Lake | 864 5 | Family Campground | 42 Mile | 561 0 | Picnic Ground |
| South Shore | 974 5 | Family Campground | Salt Springs | 160 0 | Picnic Ground |
| Stumpy Meadows | 107 5 | Family Campground | Tragedy Springs | 872 7 | Picnic Ground |
| Big Meadows | 136 5 | Family Campground | Loon Lake | 014 6 | Picnic Ground |
| Loon Lake | 014 5 | Family Campground | Wrights Lake | 576 1 | Picnic Ground |
| Yellow Jacket | 046 1 | Family Campground | Digger Indian Spring | 156 0 | Picnic Ground |
| Sunset | 055 6 | Family Campground | China Flat | 482 6 | Picnic Ground |
| Silver Creek | 066 0 | Family Campground | Eagle Rock | 573 0 | Picnic Ground |
| South Fork | 097 0 | Family Campground | Edson Burn Interpretive Trail | 683 0 | Interpretive Site |
| Ice House | 584 1 | Family Campground | | | |
| Sand Flat | 474 0 | Family Campground | Hell Hole Station | 681 0 | Interpretive Site |
| PiPi | 597 5 | Family Campground | Crystal Basin Station | 612 0 | Interpretive Site |
| Lumberyard | 824 5 | Family Campground | Placerville Ranger Station | 653 0 | Interpretive Site |
| Moore Creek (STF) | 071 1 | Family Campground | | | |
| Caples Lake | 972 0 | Family Campground | Amador Ranger Station | 999 9 | Interpretive Site |
| Kirkwood Lake | 987 0 | Family Campground | Georgetown Ranger Station | 680 0 | Interpretive Site |
| Hell Hole | 118 0 | Family Campground | | | |
| Upper Hell Hole | 150 0 | Family Campground | Pacific Ranger Station | 626 0 | Interpretive Site |
| Pleasant | 022 0 | Family Campground | Forest Information Center | 655 0 | Interpretive Site |
| Wench Creek | 048 5 | Family Campground | | | |
| Gerle Creek | 064 1 | Family Campground | Cleveland Corral | 023 0 | Information Site |
| Wentworth Springs | 080 0 | Family Campground | Carson Pass | 709 0 | Information Site |
| Wrights Lake | 579 1 | Family Campground | Mormon Emigrant Trail | 651 0 | Information Site |
| Silver Fork | 313 0 | Family Campground | | | |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Recreation | | |
| 5 - Recreation Opportunity Spectrum - Rural | Retain site qualities that will not degrade this level of experience | Manage to a Recreation Opportunity Spectrum of Rural Administer facilities to accommodate large numbers of people for motorized use and parking The development scale allows Levels III, IV and V, with three to ten sites per acre |
| 9 - Cultural Resources Inventory and Evaluation | Inventory all developed recreation sites and determine effects on significant cultural properties | Follow Forest-wide Standards and Guidelines |
| 10 - Cultural Resources Protection | Protect cultural resources associated with developed sites | Mitigate continuing adverse impacts on significant cultural properties |
| 11 - Cultural Resources Enhancement | Give highest priority to cultural resources study and interpretation associated with developed sites | Design and implement cultural resources interpretive plans where visitors may view significant properties<br><br>Develop interpretive signing for Pipi Campground |
| 16 - Visual Quality Objective - Partial Retention | Provide a natural appearing forest setting within the constraints of existing site character and its kind of use | Manage to a Visual Quality Objective of Partial Retention This is the desired VQO<br><br>Maintain recreation facilities and roads within the site in order to be as obscure as possible when viewed from within or immediately adjacent to the site<br><br>Plant and maintain the optimum amount of vegetation in order to keep a natural appearing setting that functionally and aesthetically satisfies visitors when viewed from within or immediately adjacent to the site |
| 17 - Visual Quality Objective - Modification | | Manage to a Visual Quality Objective of Modification This is an acceptable VQO |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 19 - Visual Resource Improvement | Maintain approved Visual Quality Objectives | When the visual setting does not meet acceptable levels, mitigate the impacts and restore the lands to a minimum Visual Quality Objective of Modification |
| 21 - Interpretive Services Planning | Update existing interpretive plans | Include developed recreation sites in District and Forest-wide interpretive plans |
| 22 - Interpretive Services Management | Provide interpretive services in developed sites | Develop and maintain incentives to reduce vandalism<br><br>Coordinate operation and maintenance of interpretive services facilities with other functions such as fire and engineering<br><br>Emphasize guided activities<br><br>Give priority to energy efficiency |
| 23 - Installation and Construction of Interpretive Services Facilities not on Interpretive Services Sites | Provide new interpretive services facilities in conjunction with existing developed sites | Coordinate placement of interpretive services with developed site rehabilitation or major maintenance |
| 24 - Developed Recreation Site Management, Public Sector | Operate and maintain existing sites Sites will be rehabilitated from a Forest priority list | Scale development to Levels III or IV Manage at standard maintenance Incorporate interpretation of cultural, natural, or resource management themes into rehabilitation plans Prepare vegetative management plans for all sites |
| 28 - Closed Off-Road Vehicle Management | Confine vehicle use to interior roads and spurs | Allow use of trails which lead to adjacent off-road vehicle routes or cross-country areas |
| 32 - Recreation Management - Private and Other Public Sector | Permit operation and management of developed recreation facilities by private concessionaires | Issue a prospectus after assessment indicates that operation of existing facilities is best served by private sector management |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Range | | |
| 51 - Range Planning and Analysis | Exclude livestock from developed recreation sites | Provide livestock management and control around existing recreation sites Define those measures in the Allotment Management Plan |
| 54 - Range Improvements - Structural | Construct fences and cattleguards to exclude livestock | Determine the actual need, location, and style of fence to meet both grazing allotment and recreation site objectives consistant with allotment management and recreation site plans Construction is the responsibility of the Forest Service rather than the grazing permittee |
| 55 - Range Improvements - Maintenance | Maintain existing improvements as part of the site or access road system | Maintenance is the responsibility of the Forest Service |
| Timber | | |
| 66 - Special Cutting - Other | Maintain a healthy forest cover that enhances the recreation experience of the site | Remove trees that are dead, dying, or susceptible to windthrow and breakage Remove other trees to create the desired stand characteristics of species, age, size, vigor, and density |
| 79 - Fuelwood | Utilize incidental fuelwood for camp stoves and campfires free of charge | Give priority to developed site users for collection of fuelwood Excess material can be gathered by regular paid fuelwood permitees |
| Water and Soils | | |
| 83 - Watershed Maintenance and Rehabilitation | | Where the beneficial uses of water are adversely affected due to man's activities or natural disasters such as fire or flood<br><br>Stabilize stream channels and adjacent slopes, using methods that are in harmony with Management Area objectives |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | *Use native plant species for* vegetative stabilization |
| Minerals and Geology | | |
| 88 - Minerals Management - Locatables | Protect site investments to the extent practicable while recognizing and and accommodating individual rights | Preclude undue and unnecessary developed recreation site degradation where surface disturbing activities are permitted by valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |
| 89 - Mineral Management- Leasables | Protect site investments to the extent practicable while recognizing and and accommodating individual rights | Preclude undue and unnecessary developed recreation site degradation where surface disturbing activities are permitted by valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |
| Lands | | |
| 93 - Withdrawals and Revocations | Preserve the investment and user amenities of existing developed recreation sites | Conform to Public Law 94-579, Section 204 |
| 98 - Power Related Licenses and Permits | Avoid locating projects in the immediate vicinity of developed recreation sites | If unavoidable, design, locate construct, and maintain facilities to mitigate impacts on sites *Require* instream flows that satisfy aesthetic and recreation needs where streams border these sites<br><br>This is a window, with mitigation, for transportation-utility corridors |
| *Protection* | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use appropriate suppression strategies at a least cost effort to meet resource objectives |

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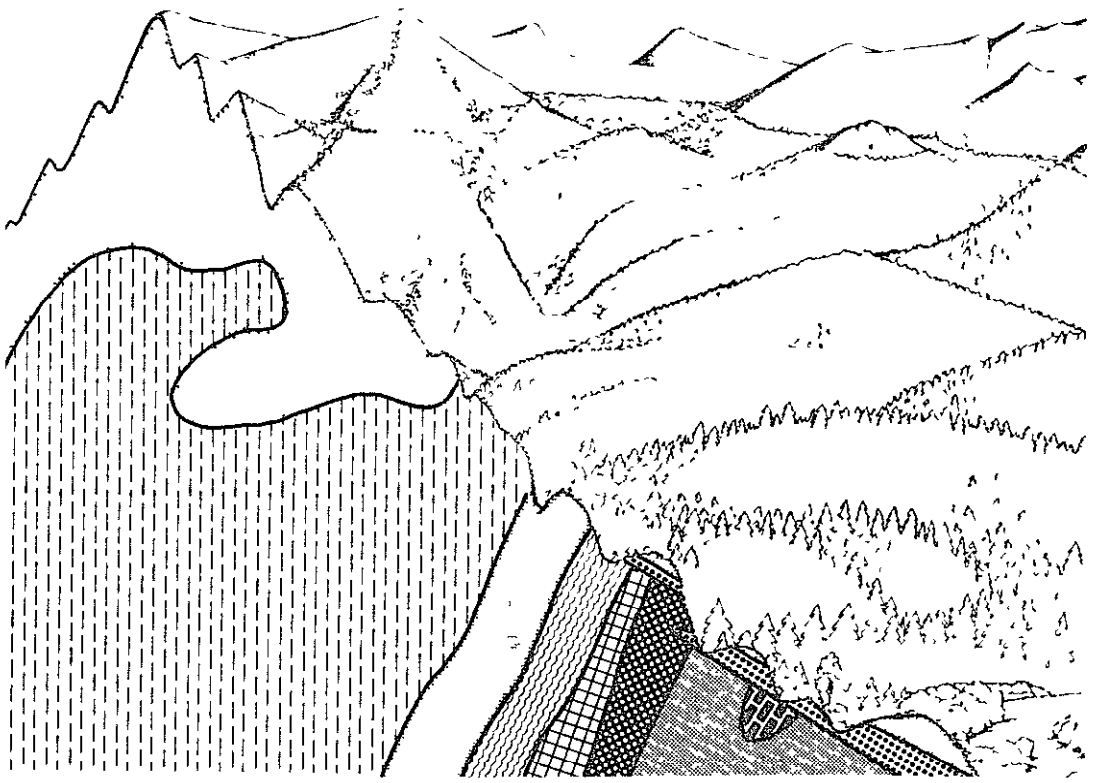
| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 113 - Prescriptive Fire Management | Use of prescribed fire is acceptable to meet resource objectives | Treat fuelbeds which are the result of fire exclusion to reduce unnatural fuel buildup |



## MANAGEMENT AREA NUMBER 10

### POTENTIAL DEVELOPED RECREATION SITES

*Management Emphasis*

Provide future developed recreation opportunities for the public Meet increasing demand by setting up an inventory of developable areas and preserving site qualities that make them desirable for recreation use

*Description*

Management Area Number 10 contains approximately 2,535 acres These are inventoried sites now considered available for development this decade and into the future However, some currently inventoried sites may become unavailable in the future due to changes in plans for FERC licenses or other unforeseen events Change in use patterns and/or future studies may dictate a need for adjustment of uses in some areas Some needed may become available through land exchange, purchase recreation plans, future use determinations, or conversion from dispersed status Some potential recreation sites are part of Composite Plans Facilities may be developed by the Forest Service, FERC Licensees, or Contract Consessionaires

Additional uninventoried potential sites are available on the Forest to meet projected demand beyond the 50-year planning horizon

| Name | Site No | Kind | Name | Site No | Kind |
|---|---|---|---|---|---|
| West Point | 549 0 | Boating Site | Wolf Creek | 617 0 | Trailer Sanitation Station |
| Alder Reservoir | 660 0 | Observation Site | | | |
| Sugar Pine Point | 966 0 | Family Campground | Northstar | 45 7 | Group Campground |
| Bear | 968 0 | Family Campground | Bear River | 980 1 | Group Campground |
| Harmonial City | 846 0 | Family Campground | Wench Creek | 48 7 | Group Campground |
| Airport | 635 0 | Family Campground | Granlees | 70 1 | Group Campground |
| Loon Lake | 14 9 | Family Campground | Loon Lake Dam | 613 0 | Group Campground |
| Northshore | 26 5 | Family Campground | Fitch-Rantz | 310 0 | Group Campground |
| County Road | 73 0 | Family Campground | Bear River Reservoir | 964 0 | Group Campground |
| Kirkwood Lake | 987 1 | Family Campground | Wrights Lake | 624 0 | Equestrian Group Campground |
| Stumpy Meadows | 107 7 | Family Campground | | | |
| Granlees | 70 0 | Family Campground | Gerle | 64 3 | Picnic Ground |
| North Creek | 469 0 | Family Campground | Alder Dam | 661 0 | Picnic Ground |
| Alder Point | 662 0 | Family Campground | Alder Creek East | 663 0 | Picnic Ground |
| Northstar | 45 6 | Family Campground | Sherman | 484 0 | Picnic Ground |
| Loon Lake Fisherman | 614 0 | Overflow Camping | Caples Dam | 721 0 | Picnic Ground |
| Tunnel Portal | 627 0 | Overflow Camping | Forni Reservoir | 666 0 | Day Use Parking |
| Strawberry Point | 423 1 | Overflow Camping | Angel Creek | 62 1 | Day Use Parking |
| *Northwind* | *424 0* | *Overflow Camping* | *Wrights Lake* | *625 0* | *Day Use Parking* |
| Woods Creek Parking | 720 0 | Overflow Camping | Caples Resort | 722 0 | Day Use Parking |
| Loon Lake | 618 0 | Trailer Sanitation Station | Blue Lake Station | T55 8 | Interpretive Site (on Toiyabe N F ) |

10

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Recreation | | |
| 1 - Recreation Planning and Inventory | Place additional sites on the Potential Developed Recreation Site Inventory to meet future demand beyond 50 years | Conduct a Forest-wide survey for sites that meet criteria for developed recreation Add these sites to the Eldorado resource data base and list them under Management Area Number 10 as the area placed on the Eldorado site inventory |
| 5 - Recreation Opportunity Spectrum - Roaded Natural | Retain site qualities that will not degrade future development opportunities | Manage to a Recreation Opportunity Spectrum of Roaded Natural Allow dispersed recreation in the interim and perform other multiple use activities that are compatible with preserving or improving site quality |
| 9 - Cultural Resources Inventory and Evaluation | Inventory all potential recreation sites and determine potential impacts on significant cultural properties | Follow Forest-wide Standards and Guidelines |
| 10 - Cultural Resources Protection | Protect cultural resources associated with potential developed recreation sites | Mitigate adverse effects on significant cultural resources |
| 11 - Cultural Resources Enhancement | Give high priority to cultural resource study and interpretation associated with potential developed recreation sites | Design and implement interpretive plans where visitors may view significant properties |
| 13 - Visual Resource Inventory and Planning | Maintain or improve a natural appearing forest setting for future development | Analyze existing visual condition on a project basis and manage to that state<br><br>Prepare a vegetative management plan |
| 16 - Visual Quality Objective - Partial Retention | Provide a natural appearing forest setting within the constraints of existing site character and its kind of use | Manage to a Visual Quality Objective of Partial Retention This is the desired VQO |
| 17 - Visual Quality Objective - Modification | | Manage to a Visual Quality Objective of Modification This is an acceptable VQO |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 19 - Visual Resource Improvement | Practice vegetative management to eliminate hazards, improve future visual condition and treat threatening insect and disease infestations | Limit activities to those that retain a Visual Quality Objective of Modification In extreme cases, such as insect mortality, mitigate impacts and restore sites to Modification as a minimum |
| 20 - Developed Recreation and Visitor Information Service Site Construction and Rehabilitation | Construct new sites to meet the demand for Recreation Visitor Days (RVD) of developed recreation | Meet site planning and design criteria outlined in Forest Service Manual 2331 |
| 21 - Interpretive Services Planning | Insure that interpretive services will be provided for future developed sites | Integrate interpretive services (information, education, and orientation for the visiting public) with preliminary site planning and design |
| 25 - Dispersed Recreation Management | Provide recreation activities that have low to moderate impact on these sites | Favor interim activities that do not require improvements and are short duration of stay Limit length of stay or restrict type and number of occupants to protect public health and safety<br><br>Utilize appropriate site for foot and equestrian trailheads at Development Class II |
| 27 - Restricted Off-Road Vehicle Management | Control travel to protect future site capability | Confine travel to designated off-road vehicle routes and trails Do not allow unrestricted vehicle use on inventoried sites |
| Fish and Wildlife | | |
| 43 - Habitat Improvement - Vegetation Enhancement | Enhance productivity of forage and cover plants for wildlife | Adhere to Eldorado criteria for management of selected indicator species Increase mast production and browse |
| 44 - Snag and Down Log Management | Provide a habitat designed to support a more intensive level of snag and down log management | Provide a minimum of four snags per acre greater than 24 inches diameter breast height |

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| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | As a minimum, maintain an average density of three downed logs per acre, 20 inches in diameter by 10 feet in length, in all forest types This is equivalent to one log per acre, 32 feet in length, or two logs per acre, 16 feet in length, or any like combination |
| Range | | |
| Continue the current level of grazing and grazing resource management (with existing range improvements) as long as the current grazing use is compatible with maintaining the condition for which future recreation sites would be developed | | |
| Timber | | |
| 66 - Special Cutting - Other | Harvest to retain current stand characteristics | Harvest only those trees that are dead or dying, have a high probability of dying within 10 years, or are in excess of desired stocking for future developed recreation use |
| Water and Soils | | |
| 81 - Water Yield Improvement | Practice water yield improvement on an interim basis until the site is developed | Manage forest stands for water yield improvement using techniques that retain recreation qualities of the site |
| 82 - Runoff Regulation | Practice runoff regulation on an interim basis | Practice runoff regulation in connection with water yield improvement using techniques that retain recreation qualities of the site Where appropriate in the red fir and subalpine zones design timber harvest to prolong the snow melt period and encourage deep seepage |
| 83 - Watershed Maintenance and Rehabilitation | | Where the beneficial uses of water are adversely affected due to man's activities or natural disasters such as fire or flood<br><br>Stabilize stream channels and adjacent slopes, using method that are in harmony with Management Area objectives |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 88 - Minerals Management - Locatables | Inventory and assess affects on all significant locatable mineral values from development of potential developed recreation sites | Assess mineral potential in conjunction with environmental analyses of expansion proposals Locate proposed expansions on low mineral potential lands whenever possible |
| 88 - Minerals Management - leasables | Inventory and assess affects on all significant leasable mineral values from development of potential developed recreation sites | Assess mineral potential in conjunction with environmental analyses of expansion proposals Locate proposed expansions on low mineral potential lands whenever possible |
| Lands | | |
| 98 - Power Related Licenses and Permits | Evaluate power project proposals against the RIM inventory of potential developed sites | Design, locate, construct, and maintain facilities to mitigate impacts on proposed developed recreation sites The licensee will build the facilities and provide operation and maintenance (O&M) funding Require instream flows that satisfy aesthetic and recreation needs where streams border these sites<br><br>This is a window, with mitigation, for transportation-utility corridors |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use appropriate suppression strategies at a least cost effort to meet resource objectives |
| 112 - Activity Fuels Management | Minimize environmental impacts and resource losses caused by wildfire through treatment of activity fuels | Consider all fuel treatment methods mechanical chemical, or manual<br><br>Treat activity fuels to a level and frequency that will permit attainment of the outputs identified in this Plan |
| 114 - Natural Fuels Management | Minimize environmental impacts and resource losses caused by wildfires *through treatment of natural fuels*<br><br>Use of prescribed fire is acceptable to meet resource objectives | Consider all fuel treatment methods mechanical, chemical or manual *methods*<br><br>Treat natural fuels to a level and at a frequency that will meet outputs identified in this Plan |

11

## MANAGEMENT AREA NUMBER 11

### EXISTING WINTER SPORTS SITES

**Management Emphasis**

Operate and maintain existing downhill skiing sites Provide aesthetically pleasing, well maintained, fully equipped facilities for the pleasure and safety of forest visitors

**Description**

These are downhill skiing sites that are administered by the Forest Service and are operated by private concessionaires under Special Use Permit Existing winter sports sites contained in Management Area Number 11 are

| Name | Site No | Acres |
|---|---|---|
| Iron Mountain | 710 0 | 1,402 |
| Kirkwood Meadows | 798 0 | 2,165 |
| Echo Summit | 267 0 | 109 |
| Sierra Ski Ranch | 339 0 | 1,579 |
| | TOTAL | 5,255 |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| **Recreation** | | |
| 1 - Recreation Planning and Inventory | Provide a safe, high quality skiing experience | Offer technical expertise and coordinate with the Tri-county Technical Advisory Committee on development of associated private lands<br><br>Coordinate with county and State agencies who have jurisdiction over lift facilities, water systems, sewerage, etc |
| 4 - Recreation Opportunity Spectrum - Semi-primitive Motorized<br>5 - Recreation Opportunity Spectrum - Roaded Natural<br>6 - Recreation Opportunity Spectrum - Rural | Winter sports sites are so large and diverse that a range of Recreation Opportunity Spectrum classes exist Maintain recreation experience levels to the approved class in the Eldorado Forest Recreation Opportunity Spectrum inventory | Maintain lifts and other auxiliary facilities with the least impact on visitor experience<br><br>Use existing vehicle routes for permittee maintenance and administration. |
| 10 - Cultural Resources Protection | Provide for protection of the remaining cultural integrity of the Emigrant Summit Trail and other properties associated with Kirkwood Meadows Winter Sports Site | Control vehicle travel to protect its historical properties and associated features |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 13 - Visual Resource Inventory and Planning | Provide a natural appearing forest setting within the context of existing winter sports sites | Through the master plan process, mitigate impacts to insure optimum visual quality after construction of additional facilities under the existing permit<br><br>Model expanded lifts, runs, and other improvements with potential impacts by computer graphic simulations and field checks<br><br>Prepare vegetative management plans for these sites |
| 16 - Visual Quality Objective - Partial Retention | Retain a natural appearing forest setting | Manage to a Visual Quality Objective of Partial Retention This is the desired VQO for existing sites |
| 17 - Visual Quality Objective - Modification | | Manage to a Visual Quality Objective of Modification This is an acceptable VQO, but preferably should be upgraded to Partial Retention |
| 19 - Visual Resource Improvement | Achieve a natural appearing forest setting | Upgrade Modification to Partial Retention where physical developments allow |
| 21 - Interpretive Services Planning | Incorporate interpretive services into existing winter sports site master plans | Coordinate interpretive services needs with further development or improvement of existing sites |
| 23 - Installation or Construction of Interpretive Services Facilities not on Interpretive Sites | Install informal interpretation facilities that explain on-site features and management of ski areas | Develop and maintain information and interpretation facilities at Echo Summit, Kirkwood, Sierra Ski Ranch, and Iron Mountain Ski Areas |
| 25 - Dispersed Recreation Management | Incorporate compatible off season use into winter sports site master plans | Make dual use of facilities to provide land base for a variety of dispersed recreation activities |
| 28 - Closed Off-Road Vehicle Management | Close summer and winter motor vehicle use except by winter sports permittees in connection with operation of the ski area | Allow low standard maintenance and administration of roads and trails by the permittee |

11

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 29 - Cross-Country Skiing | Encourage existing winter sports permittees to develop cross-country skiing in conjunction with their downhill operation | Make dual use of downhill base facilities or provide separate base facilities to support cross-country skiing where compatible<br>Prohibit heliskiing |
| 32 - Recreation Management, Private and Other Public Sector | Work with permittees to complete master plans to designed Persons-at-One-Time (PAOT) capacity | Prepare environmental analyses that incorporate new or revised practices that will have lesser impact on or will benefit the resources<br><br>Encourage permittees to provide handicapped access to scenic vistas served by existing lifts |
| Fish and Wildlife | | |
| 43 - Habitat Improvement - Vegetation Enhancement | Improve the productivity of forage and cover plants for wildlife when revegetating ski runs and other disturbed areas | Adhere to Eldorado Standards and Guidelines for Management Indicator Species Increase mast production and browse |
| 47 - Wildlife Structural Improvements | Improve the habitat capability of wildlife species through structural improvements | Apply Standards and Guidelines for structural wildlife improvements<br>Design improvements to increase habitat capabilities of Management Indicator Species |
| Range | | |
| 51 - Range Planning and Analysis | Permit grazing on portions of ski areas that are away from developed facilities and on slopes less than 60 percent Graze as a specific management tool to control vegetation on groomed slopes | Coordinate grazing with winter sports site master plans<br><br>Keep the Hansen Canyon portion of Sierra Ski Ranch open for grazing<br><br>Keep most portions of Iron Mountain Ski Area open for grazing<br><br>Close Echo Summit Ski Area to grazing<br><br>Keep Kirkwood Ski Area closed to grazing north of Thimble Basin |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 52 - Range Management | Administer grazing permits on forage producing areas to meet specific vegetation management objectives of the ski area | Proper use is 50 percent of the annual production Make allotment inspections and readiness, utilization, and trend studies Provide close coordination between the Grazing Permittee and the Ski Area Operator |
| 54 - Range Improvement - Structural | Construct fences to manage, control, or exclude livestock at ski areas | |
| 55 - Range Improvement - Maintenance | Maintain fences to meet both grazing allotment and ski area objectives | Coordinate maintenance needs between grazing permittees and ski area operators Maintenance responsibility may vary on a site specific basis |
| Timber | | |
| 66 - Special Cutting - Other | Harvest timber when needed to expand facilities, maintain or regulate forest cover, and minimize hazards to the public | Make cutting compatible with management of winter sports sites |
| Water and Soils | | |
| 81 - Water Yield Improvement | Practice water yield improvement where opportunities exist | Manage forest stands and meadows for increased yield by using techniques that are compatible with ski area management |
| 82 - Runoff Regulation | Practice runoff regulation where opportunities exist | Provide runoff regulation in connection with water yield improvement by using techniques that are compatible with ski area management and where appropriate in the red fir and subalpine zones design timber harvest to prolong the snow melt period and encourage deep seepage |
| 83 - Watershed Maintenance and Rehabilitation | | Where beneficial uses of water are adversely affected due to man's activities and natural disasters such as fire and flood<br><br>Stabilize stream channels and sideslopes using methods that are in harmony with Management Area objectives |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 86 - Soil Support Services | Maintain stable watershed conditions by establishing permanent ground cover on all disturbed areas within 3 years Provide temporary ground cover protection until permanent ground cover takes over | Maintain at least a 50 percent ground cover on soils with a moderate erosion hazard<br><br>Maintain at least a 60 percent ground cover on soils with high, or very high, erosion hazard |
| Minerals and Geology | | |
| 88 - Minerals Management - Locatables | Protect site investments to the extend practicable while recognizing and accommodating mineral rights | Preclude undue and unnecessary winter sports site degradation where surface disturbing activities are permitted by valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |
| 89 - Minerals Management - Leasables | Protect site investments to the extent practicable while recognizing and accommodating mineral rights | Preclude undue and unnecessary winter sports site degradation where surface disturbing activities are permitted by valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |
| Lands | | |
| 93 - Withdrawals and Revocations | Preserve the investment and user amenities of existing winter sports sites | Conform to Public Law 94-579, Section 204 |
| 98 - Power Related Licenses and Permits | Do not allow hydroelectric power developments which are incompatible with Existing Winter Sports sites | Give priority to retaining existing ski areas over power project proposals Oppose projects that cannot successfully mitigate conflicting impacts, or which jeopardize skier safety<br><br>These are avoidance areas for transportation-utility corridors |

12

MANAGEMENT AREA NUMBER 12

POTENTIAL WINTER SPORTS SITES

Management Emphasis

Protect potential downhill skiing sites for future development Maintain or improve the forest setting

Description

These are inventoried sites that have characteristics that make them suitable for downhill skiing All potential areas are adjacent to existing winter sports sites They would be constructed by private concessionaires under Special Use Permit Potential sites contained in Management Area Number 12 are as follows

Scheduled this Decade

| Name | Site No | Acres |
|---|---|---|
| Huckleberry | 679 0 | 238 |
| Sierra Ski Ranch | 339 1-2 | 1,713 |
| Kirkwood Meadows | 798 1-2 | 1,709 |
| Iron Mountain | 710 0 | 297 |
| Echo Summit | 267 1 | 60 |
| | Total | 4,017 |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Recreation | | |
| 1 - Recreation Planning and Inventory | Set aside potential sites to provide a high quality downhill skiing experience | Cooperate with proponents during the preparation and review of development proposals for these specific sites<br><br>Offer technical expertise and coordinate, as necessary, with the Tri-county Technical Advisory Committee on development of proposed sites<br><br>Coordinate with county and state agencies who have jurisdiction over lift facilities, water systems, sewage, etc<br><br>Coordinate with state agencies on design, construction, and operation of lifts, tows, and related safety devices |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 3 - Recreation Opportunity Spectrum - Semiprimitive Nonmotorized<br>4 - Recreation Opportunity Spectrum - Semiprimitive Motorized<br>5 - Recreation Opportunity Spectrum - Roaded Natural | Potential winter sports sites are so large and diverse that a range of Recreation Opportunity classes exist<br>Maintain recreation experience levels to the approved class in the Eldorado Recreation Opportunity Spectrum inventory | |
| 9 - Cultural Resources Inventory and Evaluation | Inventory and assess effects for all cultural properties on potential winter sports sites | Perform assessments in conjunction with environmental analyses of expansion proposals |
| 10 - Cultural Resources Protection | Mitigate effects for all significant sites | Follow Manual of Mitigation Measures (MOMM) |
| 11 - Cultural Resources Enhancement | Provide for interpretation of sites where appropriate | Integrate site interpretation with proposed winter sports development |
| 13 - Visual Resource Inventory and Planning | Preserve or improve a natural appearing forest setting for future development of potential sites | On a project basis, determine and meet Visual Quality Objectives during construction<br>Prepare vegetative management plans for each new development |
| 16 - Visual Quality Objective - Partial Retention | Retain a natural appearing forest setting | Manage to a Visual Quality Objective of Partial Retention This is the desired VQO for potential sites |
| 17 - Visual Quality Objective - Modification | | Manage to a Visual Quality Objective of Modification This is an acceptable VQO but preferably should be upgraded to Partial Retention |
| 19 - Visual Resource Improvement | Maintain the existing visual condition | Land modifying activities or projects should not occur in these areas except to improve future visual condition or future recreation experience |
| 21 - Interpretive Services Planning | Incorporate interpretive services into development plans for potential winter sports sites | Coordinate interpretive services needs with development of proposed sites Work with permittees |
| 25 - Dispersed Recreation Management | Provide interim dispersed recreation activities that have low impact on these sites | Favor interim activities that do not require improvements and are short duration of stay |

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| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 27 - Restricted Off-Road Vehicle Management | Regulate vehicle travel to protect site capability | Confine travel to designated motorized trails and off-road vehicle routes Do not allow unrestricted vehicle use on inventoried sites |
| 29 - Cross-country Skiing | Encourage new winter sports permittees to develop cross-country skiing in conjunction with downhill operations | Make dual use of downhill base facilities or provide separate base facilities to support cross-country skiing, where compatible |
| Range | | |
| 51 - Range Planning and Analysis | Continue to graze the potential sites that are currently within existing allotments | Confine grazing to slopes of 60 percent or less |
| 52 - Range Management | Administer these portions of grazing allotments to achieve proper use of the forage resources and protect other resource values | Utilize 50 percent of annual forage production<br><br>Conduct readiness, utilization, and allotment inspections |
| Timber | | |
| 66 - Special Cutting - Other | Retain current stand characteristics | Harvest only those trees that are dead or dying, have a high probability of dying within 10 years, are in excess of desired stocking, or are located in ski runs locations |
| Water and Soils | | |
| 81 - Water Yield Improvement | Practice water yield improvement where opportunities exist | Manage forest stands and meadow areas for water yield improvement by using management techniques that meet partial retention standards and are compatible with proposed ski area management objectives |
| 82 - Runoff Regulation | Practice runoff regulation where opportunities exist | Practice runoff regulation in connection with water yield improvement by utilizing techniques that meet partial retention standards and are compatible with proposed ski area management objectives Where appropriate in the red fir and subalpine zones design timber harvest to prolong the snow melt period and encourage deep seepage |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 83 - *Watershed Maintenance* and Rehabilitation | | *Where the beneficial uses of water* are adversely affected due to man's activities or natural disasters such as *fire* and flood<br><br>Stabilize stream channels and the adjacent side slopes utilizing any reasonable methods that are in harmony with Management Area objectives |
| 88 - Minerals Management - Locatables | Inventory and assess affects on all significant locatable mineral values from development of potential winter sports sites | Assess mineral potential in conjunction with environmental analyses of expansion proposals Locate proposed expansions on low mineral potential lands whenever possible |
| 88 - Minerals Management - Leasables | Inventory and assess affects on all significant leasable mineral values from development of potential winter sports sites | Assess mineral potential in conjunction with environmental analyses of expansion proposals Locate proposed expansions on low mineral potential lands whenever possible |
| Lands | | |
| 98 - Power Related Licenses and Permits | Give potential ski areas development priority over power projects | Relocate power project rights-of-way that would make these potential winter sports sites unsuitable for future development<br><br>These are avoidance areas for transportation-utility corridors |
| Protection | | |
| 111 - *Fire Management* | *Determine allowable fire size* objectives for this management area | *Use appropriate suppression* strategies at a least cost effort to meet resource objectives |

13

## MANAGEMENT AREA NUMBER 13

### PRIVATE SECTOR DEVELOPED RECREATION

**Management Emphasis**

Provide a wide variety of recreation experiences for existing private sector facilities

**Description**

Management Area Number 13 contains 2,279 acres These are inventoried resorts, camps, clubs, organization sites and residence sites authorized under Special Use Permit to private concessionaires, organizations or individuals

### EXISTING SITES

| Name | Site No | | Kind | No Lots | Name | Site No | | Kind | No Lots |
|---|---|---|---|---|---|---|---|---|---|
| Bear River | 975 5 | Rec | Residence | 45 | 29 Milestone | 592 0 | Rec | Residence | 4 |
| Caples Lake | 909 0 | Rec | Residence | 13 | 30 Milestone | 591 0 | Rec | Residence | 34 |
| Devils Gate | 989 0 | Rec | Residence | 14 | 31 Milestone | 590 0 | Rec | Residence | 2 |
| Kirkwood Lake | 985 0 | Rec | Residence | 26 | 33 Milestone | 588 0 | Rec | Residence | 27 |
| East Silver Lake | 854 1 | Rec | Residence | 54 | 34 Milestone | 587 0 | Rec | Residence | 26 |
| South Silver Lake | 862 0 | Rec | Residence | 24 | 35 Milestone | 571 0 | Rec | Residence | 15 |
| Woods Lake | 860 0 | Rec | Residence | 5 | 36 Milestone | 570 0 | Rec | Residence | 23 |
| Georgetown | 682 0 | Rec | Residence | 2 | 39 Milestone | 564 0 | Rec | Residence | 51 |
| Dark Lake | 574 0 | Rec | Residence | 7 | 41 Milestone | 563 0 | Rec | Residence | 39 |
| Gerle Creek | 067 5 | Rec | Residence | 41 | 42 Milestone | 599 0 | Rec | Residence | 28 |
| Wrights Lake | 575 0 | Rec | Residence | 68 | 46 Milestone | 338 0 | Rec | Residence | 23 |
| Alder Creek | 542 0 | Rec | Residence | 20 | 47 Milestone | 340 0 | Rec | Residence | 29 |
| Aspen Creek | 341 0 | Rec | Residence | 18 | Kaleva Lodge | 371 0 | Club | | |
| Atwood | 270 5 | Rec | Residence | 23 | Porcupine Club | 224 6 | Club | | |
| Bryant Creek | 337 0 | Rec | Residence | 30 | STS Clubhouse | 572 0 | Club | | |
| Bull Creek | 538 0 | Rec | Residence | 16 | Deer Crossing | 027 0 | Private Camp | | |
| Cody Creek | 558 0 | Rec | Residence | 1 | Mountain Camp | 417 0 | Private Camp | | |
| Fir | 336 0 | Rec | Residence | 23 | Caples Lake | 988 1 | Resort | | |
| Forni Creek | 564 0 | Rec | Residence | 5 | Kit Carson | 853 0 | Resort | | |
| Fry Creek | 593 0 | Rec | Residence | 1 | Twin Bridges | 550 0 | Resort | | |
| Phillips | 346 0 | Rec | Residence | 6 | Camp Minkalo | 857 0 | Organization Site | | |
| Pyramid Creek | 552 0 | Rec | Residence | 34 | Camp Silverado | 855 0 | Organization Site | | |
| Riverside | 589 0 | Rec | Residence | 12 | Stockton Camp | 887 0 | Organization Site | | |
| Sayles Canyon | 269 0 | Rec | Residence | 36 | Two Sentinels | 984 0 | Organization Site | | |
| Sciots | 562 0 | Rec | Residence | 70 | Camp Winton | 973 0 | Organization Site | | |
| Strawberry | 557 0 | Rec | Residence | 52 | SMUDEA | 051 5 | Organization Site | | |
| Strawberry Creek | 560 0 | Rec | Residence | 33 | Camp Cody | 459 0 | Organization Site | | |
| Twin Bridges | 551 0 | Rec | Residence | 7 | Camp Sacramento | 379 0 | Organization Site | | |
| White Hall | 540 0 | Rec | Residence | 5 | Sierra Pines | 335 0 | Organization Site | | |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Recreation | | |
| 1 - Recreation Planning and Inventory | Administer private sector sites to provide a high quality experience | Coordinate with State and county agencies who have jurisdiction over building codes, water, and sanitation |
| | For each tract complete analysis of recreation residence continuance, following the NEPA Process as directed in FSM 2721 23e Issue no new Recreation Special Use Permits outside of the existing tracts, except as directed by Future Use Studies Organization camps will offer social priority 1, 2, and 3 use and thereby fulfill a needed public service as a condition of use of the site Reissuance of organization camp permits would be contingent on continuance of this type of use | Endeavor to complete analysis of recreation residence continuance prior to expiration of existing permits in 1991, or within 5 years following approval of this plan Issue annual permits for those sites not completed before 1991 Plan a phase out period for boat houses and secondary buildings as directed by policies outlined in FSH 2709 11 Consolidate docking facilities |
| | Combine the sites into priority groups, as follows | |
| | 1 Highway 88 Corridor and associated areas Amador Ranger District | |
| | 2 Lower Section-Highway 50 Placerville Ranger District | |
| | 3 Upper Section-Highway 50 Placerville Ranger District | |
| | 4 Pacific and Georgetown Districts | |
| 4 - Recreation Opportunity Spectrum - Semiprimitive Motorized<br>5 - Recreation Opportunity Spectrum - Roaded Natural<br>6 - Recreation Opportunity Spectrum - Rural | Maintain a range of recreation experiences, because existing classes vary between inventoried sites | |
| 9 - Cultural Resources Inventory and Evaluation | Provide for an historic and architectural inventory assessment of buildings scheduled for removal | Follow Forest-wide Standards and Guidelines |
| 10 - Cultural Resources Protection | Provide for mitigation of effects on significant properties | Follow the Manual of Mitigating Measures (MOMM) |

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| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 11 - Cultural Resources Enhancement | Interpret significant cultural properties associated with Private Sector Developed Recreation Sites | Preserve and/or rehabilitate where appropriate for interpretation |
| 13 - Visual Resource Inventory and Planning | Provide a natural appearing setting within the context of private sector sites | Identify visual tradeoffs under Future Recreation Use Determinations<br><br>Prepare vegetative management plans for all sites<br><br>Produce a visual handbook of buildings, signs, and facilities, setting the theme and standards for improvements<br><br>Analyze proposed land modifications from the observer point of view |
| 16 - Visual Quality Objective - Partial Retention | Retain a natural appearing forest setting | Manage to a Visual Quality Objective of Partial Retention This is the desired VQO for existing private sector sites<br><br>Maintain recreation residences, buildings, and roads within the sites in order to be as obscure as possible when viewed from within or immediately adjacent to the sites<br><br>Plant and maintain the optimum amount of vegetation in order to keep a natural appearing setting that functionally and aesthetically satisfies passing Forest visitors |
| 17 - Visual Quality Objective - Modification | | Manage to a Visual Quality Objective of Modification This is an acceptable VQO but preferably should be upgraded to Partial Retention |
| 19 - Visual Resource Improvement | Achieve a natural appearing forest setting | Upgrade to Partial Retention where physical qualities allow Work with permittees to minimize vegetation loss Replant with native species |
| 22 - Interpretive Services Management | Provide information and education materials to permittees | Develop information material to keep permittees informed about management policies and programs affecting their use |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 28 - *Closed Off-Road Vehicle* Management | *Do not allow vehicle use off of* system roads and trails | *Confine use to roads and trails* that lead to adjacent off-road vehicle routes or areas |
| 32 - Recreation Management - Private and Other Public Sector | Manage recreation Special Use Permits in accordance with Forest Service Manual 2300 and 2700 | Incorporate foot bridges, docks and additional buildings into existing Special Use Permits (where appropriate) Charge an additional fee for all secondary buildings on recreation residence sites that exceed 100 square feet |
| Range | | |
| Grazing is generally excluded from other developed recreation areas | | |
| Timber | | |
| 66 - Special Cutting - Other | Maintain a healthy forest cover with characteristics that enhance the recreation experience of the site | Remove trees that are dead, dying and susceptible to windthrow or breakage Remove other trees to create the desired stand characteristics of species, age, size, vigor, and density |
| 69 - Ground Based Harvest System<br>70 - Cable Harvest System<br>71 - Skyline Harvest System<br>72 - Special Harvest System | Use the harvest system that best protects recreational values of specific sites | Give primary consideration to end results in the selection of a harvest system Make relative cost a secondary consideration |
| 73 - Fuelwood | Utilize all the woody material from tree removal under Special Cutting | Dispose of fuelwood material off-site that is created by stand maintenance within these areas off-site |
| 80 - Christmas Trees and Miscellaneous Forest products | Remove all woody material from the harvest of miscellaneous forest products | Dispose of woody material off-site which is created by stand maintenance within these sites |
| Water and Soils | | |
| 83 - *Watershed Maintenance* and Rehabilitation | | *Where the beneficial uses of water* are adversely affected due to man's activities or natural disasters such as fire and flood |

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| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Stabilize stream channel and adjacent side slopes using methods that are in harmony with Management Area objectives |
| Minerals and Geology | | |
| 88 - Minerals Management - Locatables | Protect site investments to the extent practicable while recognizing and accommodating mineral rights | Preclude undue and unnecessary site degradation where surface disturbing activities are permitted by valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface development activities |
| 89 - Minerals Management - Leasables | Protect site investments to the extent practicable while recognizing and accommodating mineral rights | Preclude undue and unnecessary site degradation where surface disturbing activities are permitted by valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |
| Lands | | |
| 93 - Withdrawals and Revocations | Preserve the investment and user amenities | Conform to Public Law 94-579, Section 204 |
| 94 - Land Adjustments | Make land adjustments defined by approved Future Use Studies | Manage lands status quo under permit, dispose of them by exchange, or recover sites for unencumbered public access |
| 98 - Power Related Licenses and Permits | Minimize impacts on private sector special use permits | Evaluate project impacts to mitigate the effects of power development through FERC licensing requirements |
| | | Consider alternate project locations if displacement is the only solution |
| | | Preserve water rights previously granted to permittees and their various associations |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 28 - *Closed Off-Road Vehicle* Management | *Do not allow vehicle use off of* system roads and trails | *Confine use to roads and trails* that lead to adjacent off-road vehicle routes or areas |
| 32 - Recreation Management - Private and Other Public Sector | Manage recreation Special Use Permits in accordance with Forest Service Manual 2300 and 2700 | Incorporate foot bridges, docks and additional buildings into existing Special Use Permits (where appropriate) Charge an additional fee for all secondary buildings on recreation residence sites that exceed 100 square feet |
| Range | | |
| Grazing is generally excluded from other developed recreation areas | | |
| Timber | | |
| 66 - Special Cutting - Other | Maintain a healthy forest cover with characteristics that enhance the recreation experience of the site | Remove trees that are dead, dying and susceptible to windthrow or breakage Remove other trees to create the desired stand characteristics of species, age, size, vigor, and density |
| 69 - Ground Based Harvest System<br>70 - Cable Harvest System<br>71 - Skyline Harvest System<br>72 - Special Harvest System | Use the harvest system that best protects recreational values of specific sites | Give primary consideration to end results in the selection of a harvest system Make relative cost a secondary consideration |
| 73 - Fuelwood | Utilize all the woody material from tree removal under Special Cutting | Dispose of fuelwood material off-site that is created by stand maintenance within these areas off-site |
| 80 - Christmas Trees and Miscellaneous Forest products | Remove all woody material from the harvest of miscellaneous forest products | Dispose of woody material off-site which is created by stand maintenance within these sites |
| Water and Soils | | |
| 83 - Watershed Maintenance and Rehabilitation | | Where the beneficial uses of water are adversely affected due to man's activities or natural disasters such as fire and flood |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Stabilize stream channel and adjacent side slopes using methods that are in harmony with Management Area objectives |
| Minerals and Geology | | |
| 88 - Minerals Management - Locatables | Protect site investments to the extent practicable while recognizing and accommodating mineral rights | Preclude undue and unnecessary site degradation where surface disturbing activities are permitted by valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface development activities |
| 89 - Minerals Management - Leasables | Protect site investments to the extent practicable while recognizing and accommodating mineral rights | Preclude undue and unnecessary site degradation where surface disturbing activities are permitted by valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |
| Lands | | |
| 93 - Withdrawals and Revocations | Preserve the investment and user amenities | Conform to Public Law 94-579, Section 204 |
| 94 - Land Adjustments | Make land adjustments defined by approved Future Use Studies | Manage lands status quo under permit, dispose of them by exchange, or recover sites for unencumbered public access |
| 98 - Power Related Licenses and Permits | Minimize impacts on private sector special use permits | Evaluate project impacts to mitigate the effects of power development through FERC licensing requirements<br><br>Consider alternate project locations if displacement is the only solution<br><br>Preserve water rights previously granted to permittees and their various associations |

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## MANAGEMENT AREA NUMBER 14

### ADMINISTRATIVE SITES

Management Emphasis

Locate Administrative Sites to effectively protect and manage the Eldorado Blend buildings and and facilities with the surrounding landscape Make them energy efficient and functionally suitable for both employees and the visiting public

Description

Management Area Number 14 contains 250 acres These sites are situated throughout the Forest and have buildings and facilities on them that serve fire and other administrative needs Their size is usually small In some cases, they serve as public information outlets in addition to their primary purpose The Sly Park Conservation Site is included under Administrative Sites

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Recreation | | |
| 5 - Recreation Opportunity Spectrum - Roaded Natural<br>6 - Recreation Opportunity Spectrum - Rural | Maintain or improve the existing Recreation Opportunity Spectrum Administrative Sites, because of development, fall within a lower range of experience | Manage to a Recreation Opportunity Spectrum that is consistent with Management Areas that surround the Administrative Sites The desired level is Roaded Natural |
| 9 - Cultural Resources Inventory and Evaluation | Inventory and evaluate the cultural value of Forest Service administrative buildings and facilities | Assess both existing and abandoned buildings during this 10-year planning period |
| 10 - Cultural Resources Protection | Protect significant buildings and sites | Protect significant buildings and sites in accordance with Forest Service Manual 2360, Region 5 Supplement Number 31 and the Manual of Mitigating Measures (MOMM) |
| 11 - Cultural Resources Enhancement | Stabilize, rehabilitate, and/or document significant buildings or sites Restore significant buildings and sites to original condition where there is high interpretive potential | Provide for public interpretation of significant buildirgs and sites where protection and maintenance costs are justified |
| 13 - Visual Resource Inventory and Planning | Provide functional, aesthetically pleasing Administrative Sites | Locate and design Administrative Sites to minimize visual impacts |
| 16 - Visual Quality Objective - Partial Retention | Fstablish and maintain Administrative Sites in an aesthetic setting | Manage to a Visual Quality Objective of Partial Retention This is the desired VQO |
| 17 - Visual Quality Objective - Modification | | Manage to a Visual Quality Objective of Modification This is an acceptable VQO |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 19 - Visual Resource Improvement | Achieve an aesthetically pleasing setting for Administrative Sites | Upgrade sites to a minimum acceptable level of Modification |
| 21 - Interpretive Services Planning | Develop and update interpretive plans for Administrative Sites as key visitor contact points that are not now providing interpretive services | Identify interpretive objectives, audiences, messages, communication methods, parking and traffic patterns, space needs, staffing, and funding |
| 22 - Interpretive Services Management | Maintain interpretive services at established sites Leased sites, while not located on National Forest land are adjuncts to this Management Area | Provide effective self-service and employee administered services at key contact points Make personal services available during normal business hours, at least 5 days per week, at key points such as Ranger Stations and the Supervisor's Office Extend personal services during holidays and special events such as opening of hunting season to pre and post business hours, up to 7 days per week<br><br>Provide screening or other separation between public service areas and office space where administrative work is being performed |
| 23 - Installation or Construction of Interpretive Services facilities not Interpretive Services Sites | Develop and maintain interpretive services facilities at Administrative Sites<br><br>Provide visitor information on Highway 50 | Integrate interpretive services facilities with site plans<br><br>Provide personal contact visitor information along Highway 50 at the Eldorado Visitor Center in Camino Keep the Center open 7 days per week yearlong |
| Range | | |
| 2 - Range Management | Exclude grazing from Administrative Sites | |
| 53 - Range Improvements-Structural | Build perimeter fences to protect sites from grazing damage | Keep fences effective and in good repair Maintain them with Forest Service funds and personnel |

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| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Timber | | |
| 66 - Special Cutting - Other | Manage the vegetation to maintain or enhance the existing species mix Retain safe, healthy natural stands in Administrative Sites | Prepare a silvicultural prescription for all Administrative Sites during this planning period to ensure healthy tree stands<br><br>Use ornamental landscaping to enhance native surroundings |
| 69 - Ground Based Harvest System<br>70 - Cable Harvest System<br>71 - Skyline Harvest System<br>72 - Special Harvest System | Use the harvest system that best protects values of specific administrative sites | Give primary consideration to the end results in the selection of a harvest system Make relative cost a secondary consideration |
| 79 - Fuelwood | Utilize all woody material from tree removal under Special Cutting | Dispose of fuelwood material off-site which is created by stand maintenance within these sites |
| 80 - Christmas Trees and Miscellaneous Forest Products | Remove all woody material from the harvest of miscellaneous forest products | Dispose of woody material off-site which is created by stand maintenance within these sites |
| Minerals and Geology | | |
| 88 - Minerals Management - Locatables | Protect site investments to the extent practicable while recognizing and accommodating mineral rights | Preclude undue and unnecessary site degradation where surface disturbing activities are permitted by valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |
| 89 - Minerals Management - Leasables | Protect site investments to the extent practicable while recognizing and accommodating mineral rights | Preclude undue and unnecessary site degradation where surface disturbing activities are permitted by valid existing rights All claimed valid existing rights will be verified by a Forest Service mineral examiner prior to authorizing any significant surface disturbing mineral access or development activities |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Lands | | |
| 93 - Withdrawals and Revocations | Review all existing administrative site withdrawals to determine the need and validity for continuance | Complete the review during this planning period Recommend revocation of withdrawals that are no longer needed |
| | Protect Administrative Site investments to the extent practicable while recognizing and accommodating mineral rights | Preclude undue and unnecessary administrative site degradation where surface disturbing activities are permitted by valid existing rights |
| 98 - Power Related Licenses and Permits | Allow minor power projects that support the Administrative Sites | Evaluate proposals to mitigate or eliminate direct impacts on the site<br><br>These are windows with mitigation for transportation-utility corridors |
| Protection | | |
| 109 - Fire, Administration and Other (FA&O) Facility Construction and Reconstruction | Provide for construction and reconstruction of facilities to support the forest program of work | Conform to Forest Service manual standards to insure proper assessment, design and construction of facilities<br><br>Incorporate energy saving devices into new construction Seek other means of conserving energy |
| 110 - Fire, Administration, and Other (FA&O) Facility Operation and Maintenance | Operate and maintain forest structures to serve fire protection, administration and other management | Eliminate inventoried FA&O maintenance backlog to reduce maintenance needs to 3 percent of the current appraised value by 1985<br><br>Retrofit all buildings and facilities for which energy surveys indicate a favorable Saving Investment Ratio (SIR) by 1990<br><br>Build new trailer court pads for Forest Service employees |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use appropriate suppression strategies at a least cost effort to meet resource objectives |

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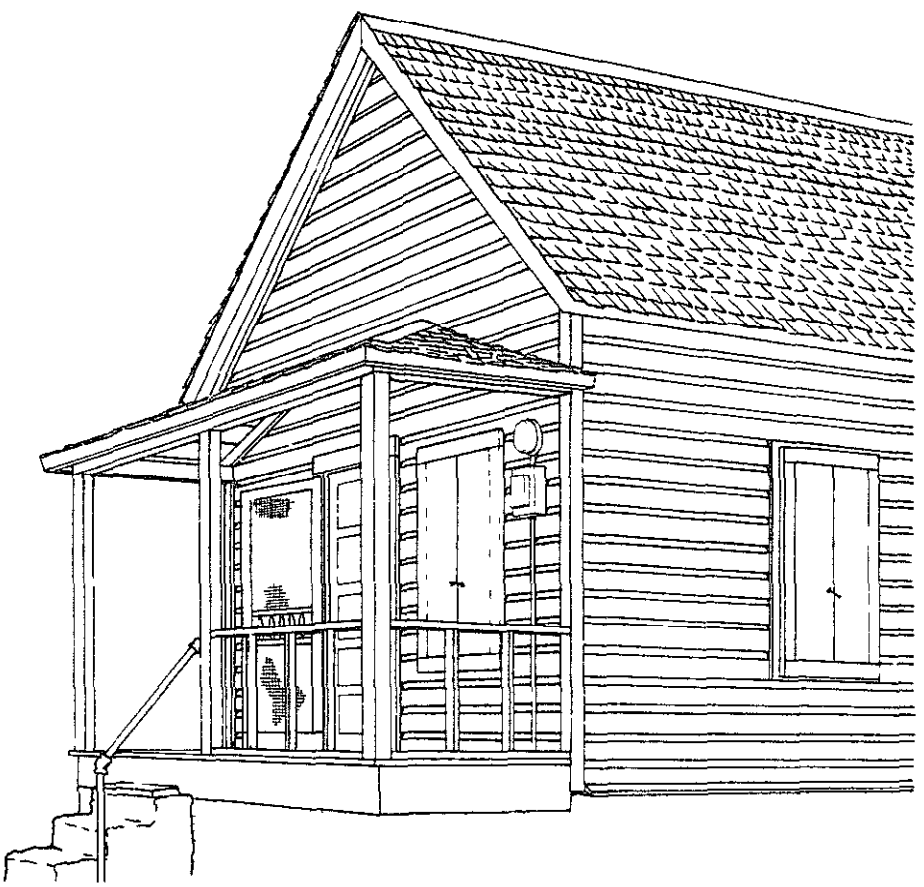
| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 112 - Activity Fuels Management | Provide 100% clean-up | Consider all fuel treatment methods mechanical, chemical, manual, or removal |



MANAGEMENT AREA NUMBER 15

PLACERVILLE NURSERY

Management Emphasis

Produce 7-18 million individual conifer seedlings annually in support of regeneration of National Forests in the Pacific Southwest Region of the Forest Service Maintain the Badger Hill breeding orchard in connection with the Placerville Nursery

Description

The Placerville Nursery is a major facility operated by the Eldorado to supply seedlings to National Forests in California It is administered as a subunit by a Nursery Superintendent who reports to the Forest Supervisor Placerville Nursery proper is located outside the main administrative boundary of the National Forest on an isolated 157 acre parcel of land in the Apple Hill area of El Dorado County Badger Hill Breeding Orchard is a 61-acre site located inside the main administrative boundary

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Recreation | | |
| 6 - Recreation Opportunity Spectrum - Rural | Give priority to seedling growth This is a production oriented need not related to visual experiences encountered in the main body of the Forest | Manage to a Recreation Opportunity Spectrum of Rural This is an acceptable ROS Class level consistent with Nursery management objectives |
| 9 - Cultural Resources Inventory and Evaluation | Inventory the nursery and determine the effects of nursery operations on significant cultural properties | Follow Forest-wide Standards and Guidelines |
| 10 - Cultural Resources Protection | Protect significant cultural resources associated with the nursery | Mitigate continuing adverse impacts on significant cultural properties |
| 11 - Cultural Resources Enhancement | Provide for interpretation appropriate to assessed level of significance for cultural properties | Integrate interpretation of cultural properties with existing interpretive efforts at the nursery |
| 13 - Visual Resource Inventory and Planning | Maintain an aesthetically pleasing rural setting | Establish safe and orderly surroundings Make the Nursery attractive to visitors and local travelers by creating an attractive portal and drought resistant plant demonstration garden |
| 18 - Visual Quality Objective - Maximum Modification | Give precedence to seedling production | Manage to a Visual Quality Objective of Maximum Modification This level fits in with the surrounding Apple Hill agricultural community |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 21 - Interpretive Services Planning | Develop and update interpretive services plans | Identify interpretive objectives, audiences, messages, communication methods, operating hours, staffing, and funding<br><br>Complement the Forest-wide Plan<br><br>Emphasize the role played by nurseries in contributing to future forests<br><br>Promote interpretive activities during fall and winter months<br><br>Promote the drought resistant garden |
| 22 - Interpretive Services Management | Provide opportunities to interpret the existing operation and its relationship to current forest management | Coordinate interpretive services funding with the Regional reforestation program<br><br>Maintain high quality displays and brochures Replace faded and dated graphics<br><br>Include a Supervisory Interpreter and staff<br><br>Minimize conflicts between interpretive services and regular nursery operation |
| 23 - Installation and Construction of Interpretive Services Facilities not on Interpretive Sites | Develop new interpretive services facilities | Design and construct exhibit modules for a visitor center<br><br>Build a self-guided interpretive trail around and through the Nursery complex<br><br>Maintain Recreation Information Management (RIM) data for use of these services |

Range

Grazing is excluded from the Nursery in areas used for the growing of seedlings Livestock grazing could be used as a management tool on areas that are rested and controlled by means of temporary cross fencing This type of grazing use would not be managed under a Term Permit for grazing allotments but under an Annual Grazing Permit for a specific vegetation management needed at the Nursery

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Timber | | |
| 75 - Tree Improvement | Develop genetically improved seed in the Badger Hill breeding orchard to meet the goals of increased growth and quality established in the R-5 Tree Improvement Master Plan | Intensively manage competing vegetation to keep tree vigor high but maintain sufficient ground cover to prevent soil degradation |
| 76 - Nursery | Supply the quantity and quality of seedlings to meet reforestation objectives on National Forest and other Federal lands | Make periodic assessments under the leadership of the Regional Office Timber Management Branch to determine seedling capacity related to projected demand Evaluate storage capacity needs and the benefit-cost of planting 2-0 versus 1-0 stock<br><br>Make Nursery operations efficient in the use of energy, water, and materials such as fertilizers Save energy in seed processing, building maintenance, and field operations<br><br>Protect soils in seedling production areas to retain desired structure, nutrient levels, and depth Keep records of soil testing and treatment by interior seedling blocks |
| Water and Soils | | |
| 86 - Soil Support Services | Maintain stable watershed conditions by providing temporary ground cover on all areas that are disturbed during the winter lifting season | Provide at least a 60 percent ground cover on all seed beds within 2 days of lifting Initiate measures to mitigate areas that are severely compacted |
| | Fstablish ground cover on all areas that are not in seed bed production | Establish ground cover before October 1 on these areas |
| | Maintain grass waterways and settling ponds to trap sediment from areas of seedling production | Make these facilities functional before October 1 Measure and document the amount of sediment removed from sediment points |

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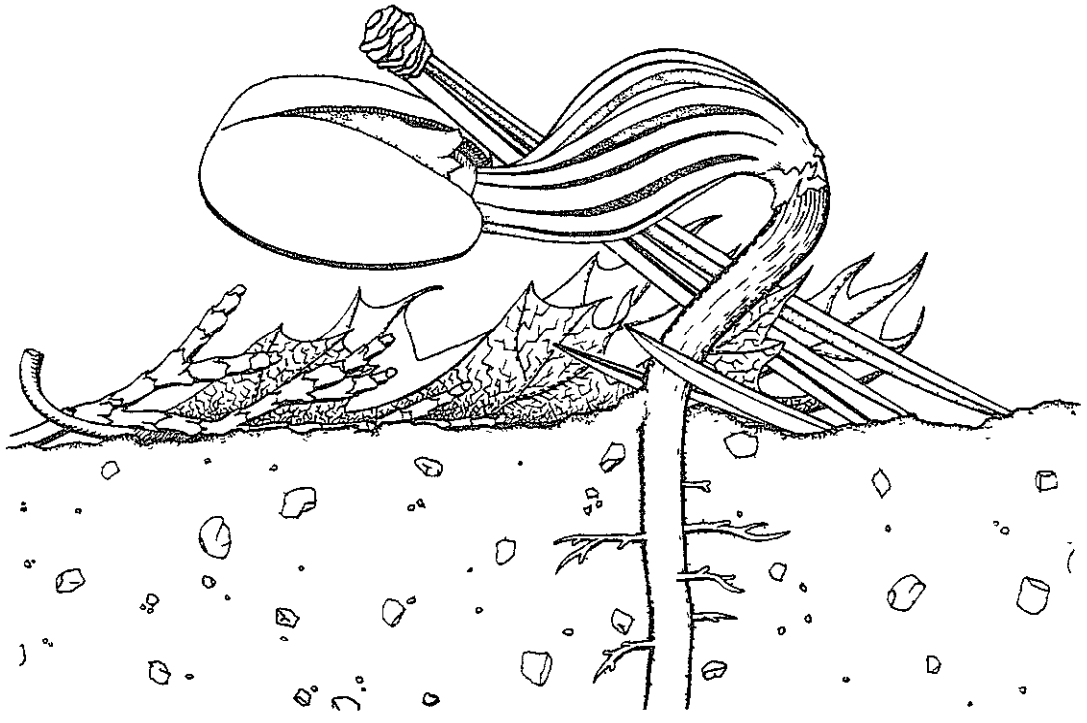
| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Lands | | |
| 98 - Power Related Licenses and Permits | Do not allow power projects that are incompatible with Nursery operations | Oppose power projects, including transmission lines<br><br>The Placerville Nursery is an avoidance area for transportation-utility corridors |
| Protection | | |
| 116 - Integrated Pest Management | Sustain production levels and minimize loss of investment at the Placerville Nursery and Badger Hill | Keep insect, animal, and disease damage to the Nursery and Orchard within acceptable limits by application of integrated pest management techniques |



MANAGEMENT AREA NUMBER 16

INSTITUTE OF FOREST GENETICS

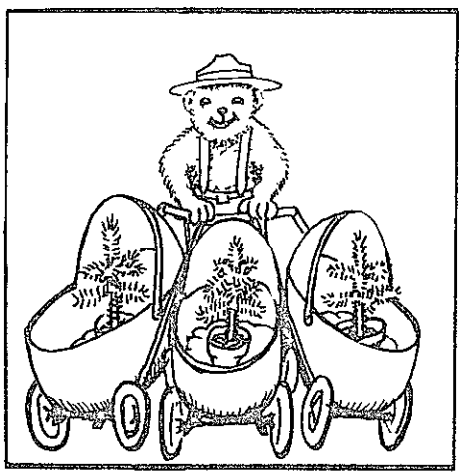
Management Emphasis

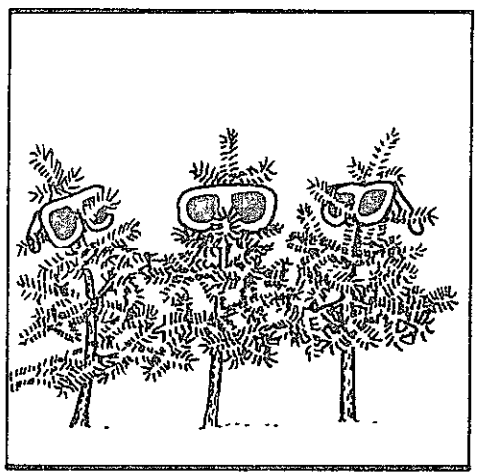
Conduct research in conifer characteristics, cross breeding, and experimental plantings under the direction of the Pacific Southwest Experiment Station

Description

The Institute contains of 234 acres planted to various species of conifers It is located on three isolated parcels of land outside the main administrative boundary of the Eldorado National Forest in the Apple Hill, Mount Danaher, and El Dorado areas of El Dorado County The Apple Hill site contains several buildings and facilities used to conduct the Institute's research program The Institute is carried as part of the Forest land base Special Use Management of Experiment Station lands is the primary activity related to the Eldorado

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Lands | | |
| 96 - Special Use Management - Nonrecreation | Process applications for land uses that are consistent with the Institute's research goals<br><br>Administer existing Special Use Permits | Review all applications and current land uses with the Director of the Institute |
| 98 - Power Related Licenses and Permits | Review all power project proposals with the Director of the Institute | Do not allow power projects that adversely affect the Institute's research programs<br><br>The Institute is an avoidance area for transportation-utility corridors |





## MANAGEMENT AREA NUMBER 18

### SPOTTED OWL HABITAT AREA

#### Management Emphasis

Protect and manage mature timber stands that provide suitable habitat for late successional wildlife species, particularly the spotted owl Meet National Forest Management Act (NFMA) requirements for maintaining viable populations of threatened, endangered, and sensitive wildlife species

#### Description

The Spotted Owl Management Area contains a total of 60,800 acres in a network of 32 Spotted Owl Habitat Areas (SOHA's) These SOHA's are located throughout the Forest, overlaying other Management Areas They are designated in clusters of three, to the extent possible, and are spaced so as to retain the distribution of owls throughout their geographic range (in accordance with Regional Planning Direction, 1/84)

The network is composed of estimated spotted owl home ranges, defined by a 1 5 mile radius circle (approximately 4,500 acres) Each SOHA is composed of 1,000 acres of suitable base habitat, plus additional replacement habitat within a home range area Where 1,000 acres of suitable habitat was unavailable, the deficit was identified as potential habitat to be managed to meet suitability The base habitat includes 1) a core area - 300 acres of contiguous habitat within which a nest or suspected nest is found, 2) an alternate core - another 300 acres of contiguous habitat to serve as an alternate nest stand, and 3) additional base habitat - 400 acres of additional habitat in not more than 3 parcels, at least 60 acres in size In SOHA's where these conditions are not currently being met, management will be aimed at improving habitat to meet these requirements in the future

A viable amount of replacement habitat is required depending upon the timber harvest prescription selection for each SOHA Replacement acre requirements for the available prescriptions are no scheduled harvest--650 acres, uneven-aged management--1,000 acres, and even-aged management--1,650 acres. This results in SOHA's varying in size from 1,650 acres to 2,650 acres A timber management prescription was determined for each of the 32 SOHA's based on the availability of suitable or potential habitat for replacement acres An even-aged management prescription was selected for 8 SOHA's which were anticipated to have at least 2,650 acres of suitable and potential habitat available The remaining 24 SOHA's will be managed under a no scheduled harvest prescription due to the lack of available habitat or its heavy fragmentation These initial management prescriptions may be modified if site specific data developed in a Habitat Management Plan indicated significantly lesser or greater amounts of potential habitat available than originally estimated

# 18

The spotted owl serves as a management indicator for other late successional stage wildlife, and the protected habitat adds to the seral stage acreage of older mature trees General guidelines for this Management Area are provided in the Management Area Prescription, however, site specific guidelines will be developed for each individual SOHA within a Spotted Owl Habitat Management Plan

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Recreation | | |
| 2 - Recreation Opportunity Spectrum - Primitive<br>3 - Recreation Opportunity Spectrum - Semiprimitive Nonmotorized<br>4 - Recreation Opportunity Spectrum - Semiprimitive Motorized<br>5 - Recreation Opportunity Spectrum - Roaded Natural | Make consistent with the ROS Class of surrounding Management Areas | |
| 14 - Visual Quality Objective - Retention | Protect mature timber Eliminate disturbance to 1,000 acres of base habitat. | Manage to a Visual Quality Objective of Retention to preserve spotted owl habitat. |
| 25 - Dispersed Recreation Management | Manage for a low concentration of dispersed use and restrict activities that modify spotted owl habitat or disturb breeding pairs | Allow sightseeing, hiking, undeveloped camping, nature study, hunting, and fishing. |
| 27 - Restricted Off-Road Vehicle Management | Confine ORV use to designated trails | When designating ORV trails through SOHA's, attempt to avoid the 1,000 acre base habitat. |
| 28 - Closed Off-Road Vehicle Management | Prohibit motor vehicle use within the spotted owl core area. | Do not allow construction of ORV trails within the spotted owl core area. Existing trails will be rerouted to be outside the core area unless determined through a biological evaluation, that the existing use is not an impact Address site specific ORV concerns within the Spotted Owl Habitat Management Plan |

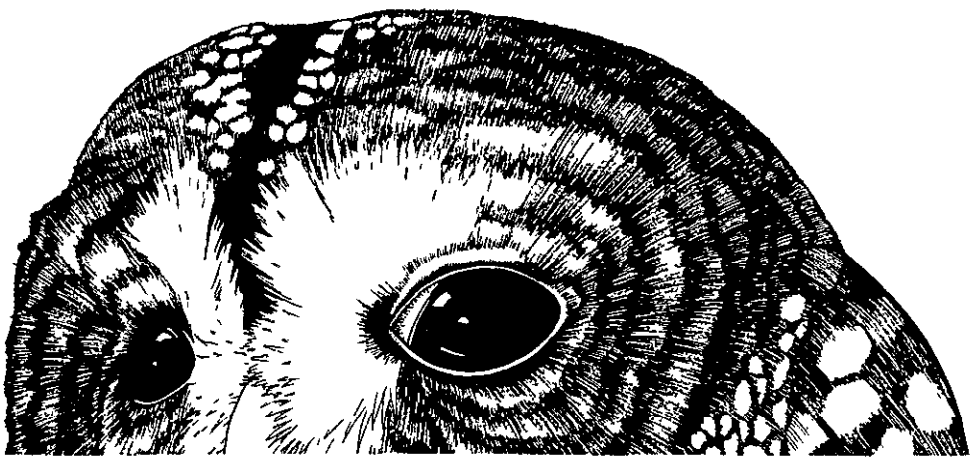
| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Vegetative Management within each SOHA will be primarily for maintaining spotted owl habitat requirements Vegetation and seral stages included within each SOHA will be selected jointly by the Forest biologist and silviculturist |
| Fish and Wildlife | | |
| 42 - Habitat Improvement - Old Growth | Provide habitat for wildlife species associated with late successional stages and old growth forests. Manage these areas in high quality condition according to the habitat quality criteria for old growth stands (Wildlife Habitat Capability Models and Habitat Quality Criteria for the Western Sierra Nevada, May 1981, and Habitat Suitability Index Models Spotted Owls, Laymon et al 1985) | Retain the following conditions to provide high quality habitat for spotted owls and other old-growth species<br><br>Dominant tree characteristics - dominant trees are Dunning Class 3 and 5, top rounded or flat, more than 36 inches in diameter at breast height in core nesting areas and 30 inches in diameter in core replacement areas, and age 170 to 300 years<br><br>Presence of natural mortality and disturbance - mortality and tree fall occur without disturbance in base habitat<br><br>Snags - largest size available, more than 24-inch diameter breast height and more than 20 feet high Average density of seven per acre<br>Downed logs - more than 24 inches at the largest diameter All classes of decay Average density more than 10 per acre<br><br>Proximity to stream - less than 0 5 miles to a water source<br><br>Stand structure - multi-layered stand, lower story may be hardwood mix, 75 percent cumulative canopy closure |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Spotted Owl Management Plans, developed by appropriate resource specialists, will provide site specific management guidelines to maintain spotted owl habitat over time |
| 48 - Recovery Species Administrative Management | Protect and improve habitat for threatened, endangered, and sensitive species | Forest wildlife staff will coordinate with other resources, particularly timber Habitat criteri for other species utilizing old growt and late successional stages will be provided for active projects Biological evaluations will be prepared as necessary to assess existing or potential impacts |
| Range | | |
| 51 - Range Planning and Analysis | Continue grazing as part of existing allotments | Manage forage-producing areas under nonintensive grazing systems |
| 52 - Range Management | Administer as part of surrounding allotments | Discourage concentrated use Locate salt away from spotted owl habitat |
| 54 - Range Improvement - Structural | Allow only allotment boundary fences to cross the territories | Do not machine clear fenceline rights-of-way Perform construction and maintenance by hand between July and March 1 |
| 55 - Range Improvement - Maintenance | Keep fences in repair to meet both grazing allotment and spotted owl needs | Perform maintenance by the permittee under the terms of the grazing permit |
| Timber | | |
| 66 - Special Cutting - Other | Retain stand characteristics essential to spotted owl and other wildlife species that are dependent upon mature timber seral stages | Within SOHA's containing 1,650 acres of suitable and potential habitat, n scheduled timber harvest will occur. Design timber management prescriptio within Habitat Management Plans, as needed to achieve spotted owl habita requirements |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Within SOHA's containing 2,000 acres of identified habitat, allow regulated harvest under an even-aged harvest prescription, as determined within a Spotted Owl Habitat Management Plan Ensure that at least 1,000 acres of suitable habitat is maintained in a suitable distribution at all times A wildlife biologist will participate in sale layout |
| | | Within SOHA's containing 2,650 acres of identified habitat, allow regulated harvest as determined within a Spotted Owl Habitat Management Plan. Ensure that at least 1,000 acres of suitable habitat is maintained in a suitable distribution at all times. No harvest will occur within the core area, and a wildlife biologist will participate in sale layout |
| | | Institute seasonal restrictions in areas with nests and roosts |
| | | A spotted Owl Habitat Management Plan will be prepared prior to authorizing timber salvage activities within the SOHA, *unless determined through the* biological evaluation process and through input from the Forest Pest Management Staff, that the integrity of the SOHA is being threatened to a greater extent by an insect outbreak than by the proposed salvage activities |
| 79 - Fuelwood | Minimize fuelwood gathering in base and replacement habitat, especially during the reproductive season | Do not designate fuelwood gathering areas within base habitat Implement closures or restrictions as necessary to protect desired habitat characteristics |

8

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Lands | | |
| 98 - Power Related Licenses | In designated spotted owl territories, permit projects or portions of projects that do not lower the capability of the habitat to support spotted owls | This is an avoidance area for transportation-utility corridors Evaluate impacts of proposed projects on the habitat needs of spotted owls Require proponents to maintain or increase the level of habitat capability consistent with established guidelines A technical specialist should review project plans that may impact spotted owl territories, and prepare a biological evaluation |
| Protection | | |
| 111 - Fire Management | Maintaining the integrity of the SOHA's is a primary consideration during fire suppression activities. | Use appropriate suppression strategies to protect SOHA's, paying particular attention to core areas |
| 114 - Natural Fuels Management | Minimize environmental impacts and resource losses caused by wildfires through treatment of natural fuels | Treat natural fuels to a level and at a frequency that will permit attainment of the outputs identified in the Forest Plan, while maintaining necessary habitat characteristics for spotted owls<br><br>Select fuel treatment methods that will not degrade old growth stand characteristics |



## MANAGEMENT AREA NUMBER 19

### GOSHAWK MANAGEMENT AREA

**Management Emphasis**

Protect mature timber stands that provide suitable habitat for the goshawk Meet National Forest Management Act (NFMA) requirements for maintaining viable populations of all native vertebrate species

**Description**

The Goshawk Management Area consists of 51 habitat areas that contain a total of 2,550 acres These habitat areas are located throughout the Forest, overlapping other Management Areas, and are spaced so as to retain the distribution of goshawks throughout their geographic range

The 51 habitat areas are potential goshawk habitats containing a minimum 25-acre nest stand and a 25-acre alternate nest stand Most stands will exceed the minimum These areas will be held in a minimum level of management intensity Additional survey work will attempt to positively verify active territories Specific locations of goshawk habitat areas may change as this information is developed The existing 51 habitat areas will be maintained until the verification is complete

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| **Recreation** | | |
| 2 - Recreation Opportunity Spectrum - Primitive<br>3 - Recreation Opportunity Spectrum - Semiprimitive Nonmotorized<br>4 - Recreation Opportunity Spectrum - Semiprimitive Motorized<br>5 - Recreation Opportunity Spectrum - Roaded Natural | Make Recreation Opportunity Spectrum consistent with the class of surrounding Management Areas | |
| 14 - Visual Quality Objective - Retention | Protect mature timber. Eliminate disturbance to nest stands and alternates | Manage to a Visual Quality Objective of Retention to preserve goshawk habitat |
| 25 - Dispersed Recreation Management | Manage for a low concentration of dispersed use and restrict activities that modify the goshawk habitat | Allow sightseeing, hiking, undeveloped camping, nature study, hunting, and fishing |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Fish and Wildlife | | |
| 42 - Habitat Improvement - Old-Growth | Provide high quality goshawk habitat and comply with Regional direction for maintaining a viable population | Protect potential nesting territories until at least 51 active nesting territories have been identified Above that level, consider additional territories through the environmental analysis process.<br><br>Create a primary protection zone of 25 acres around all active or recently active nest sites The scope of the primary zone will depend on topographic and vegetative characteristics but will include the nest tree, the plucking and roosting sites, and whenever possible, the portion of the forest stand located between a nest and the closest water source<br><br>Select an alternate zone of 25 acres for each territory. Locate this area within 0 5 miles of the active nest site Apply the same restrictions as the primary zone. |
| 48 - Recovery Species Administrative Management | Protect and improve habitat for threatened, endangered, and sensitive species. | Forest wildlife staff will coordinate with other resources, particularly timber. Biologists will participate in layout of adjoining timber sales |
| Range | | |
| 51 - Range Planning and Analysis | Continue grazing as part of existing allotments | Manage forage producing areas under nonintensive grazing systems Goshaw territories are not key forage areas |
| 52 - Range Management | Administer territories as part of the surrounding allotments | Discourage concentrated use<br>Locate salt away from territories |
| 54 - Range Improvement - Structural | Allow only allotment boundary fences to cross the territories | Do not machine clear fenceline rights-of-way Perform construction and maintenance by hand between July and March 1 |
| 55 - Range Improvement - Maintenance | Keep fences in repair to meet both grazing allotment and goshawk needs | Perform maintenance by the permittee under the terms of the grazing permit |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Timber | | |
| 66 - Special Cutting-Other | Maintain a healthy forest cover while protecting the habitat capability to support goshawks. Retain stand characteristics essential to this species | Selectively harvest individual trees designated for removal by a wildlife biologist or appropriate resource specialist. |
| 79 - Fuelwood | Utilize fuelwood when compatible with goshawk management | Remove fuelwood from alternate nest stands when desired habitat characteristics are not adversely affected. |
| Lands | | |
| 98 - Power Related Licenses and Permits | In designated goshawk territories, permit projects or portions of projects that do not lower the capability of the habitat to support goshawks. | This is an avoidance area for transportation-utility corridors Evaluate impacts of proposed projects on habitat needs of goshawks Oppose projects that lower habitat capability from the pre-project level. Require proponents to maintain or increase the level of habitat capability consistent with established guidelines A technical specialist must review project plans that may impact goshawk territories. |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use appropriate suppression strategies at a least cost effort to meet resource objectives |
| 114 - Natural Fuels Management | Minimize environmental impacts and resource losses caused by wildfires through treatment of natural fuels.<br><br>For the benefit of the public safety, manage fuelbeds so they will not sustain high intensity fires.<br><br>Reduce long-term protection costs and suppression expenditures. | Treat natural fuels to a level and at a frequency which will permit attainment of the outputs identified in the Forest Plan |

## MANAGEMENT AREA NUMBER 20

### VISUAL FOREGROUND RETENTION

**Management Emphasis**

Apply an uneven-aged selection system of timber management where individual or small groups of trees are removed Maintain a high level of visual quality Provide opportunities for water, wildlife enhancement, grazing, minerals exploration and development, and dispersed recreation Where in harmony wtih the above, manage red fir stands to increase water yields and to prolong the snow melt period

**Description**

Management Area Number 20 contains 19,306 acres of high site timber lands that are capable, available, and suitable (CAS) for scheduled harvest Selection is employed to meet a Visual Quality Objective of Foreground Retention on Sensitivity Level 1, Variety Class A and B viewsheds This area retains wildlife habitat in a condition that favors some late successional species

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| **Recreation** | | |
| 4 - Recreation Opportunity Spectrum-Semiprimitve Motorized<br>5 - Recreation Opportunity Spectrum - Roaded Natural<br>6 - Recreation Opportunity Spectrum - Rural | Maintain a range of recreation experiences, since existing classes vary between Management Areas Keep Recreation Opportunity Spectrum levels at the approved class in the Recreation Opportunity Spectrum Inventory | Manage dispersed recreation in these areas to maintain or improve the approved ROS classes consistent with Management Area values and implementation plans |
| 13 - Visual Resource Inventory and Planning | Provide project level data to aid in meeting visual quality objectives | Mitigate visual loss resulting from approved major projects such as highway widening or realignment, transmission lines, mining operations, dams, reservoirs, conduits, penstocks, etc Coordinate closely with proponents Start mitigation during the planning and design stage |
| 15 - Visual Quality Objective - Retention | Maintain the visual character of Foreground Retention areas for the pleasure of the viewing public | Manage to a Visual Quality Objective of Retention within the Foreground distance zone of Sensitivity Level 1 viewsheds inventoried in the Eldorado Data Base This is the desired level<br><br>Practices or projects that will result in Partial Retention are not acceptable |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Manage to a Visual Quality Objective of Retention on those portions of this Management Area that do not currently meet Retention This is an acceptable level until opportunity exists to upgrade to Retention |
| 19 - Visual Resource Improvement | Mitigate or restore visual quality reductions | Allow a short-term reduction to Partial Retention on major non-timber projects that conflict with the Foreground-Retention objective, and when proven necessary Require detailed grading and revegetation plans for project proponents, which return the impacted areas to Retention within a reasonable time |
| 23 - Installation or Construction of Interpretive Services not on Interpretive Service Sites | Provide information and interpretive material to interpret resources and activities. | Prepare wayside exhibits, interpretive trails, and publications for visitor use and/or interpret the practice and its benefits that are identified in District and Forest-wide interpretive plans |
| 25 - Dispersed Recreation Management | Provide for dispersed recreation activities that are consistent with Scenic Foreground Retention | Allow public wood cutting where it will reduce fuel buildup, minimize visual impacts, or lower costs of disposal |
| Fish and Wildlife | | |
| 40 - Wetlands Habitat Improvement and Maintenance | Improve or maintain habitat for wetland species | Increase targeted wetland species through habitat management |
| 43 - Habitat Improvement - Vegetation Enhancement | Enhance productivity of forage and cover plants for wildlife. | Design projects to increase habitat capabilities for management indicator species Adhere to guidelines set forth in the booklet Guidelines for Timber and Wildlife Coordination in Regeneration Cutting.<br><br>Encourage mast and browse production to the extent that timber productivity is not significantly reduced. |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 44 - Snag and Down Log Management | Make snag and down log management part of the visual experience where it does not effect traveler safety | As a minimum, maintain an average density of 3 downed logs per acre, 20 inches in diameter by 10 feet in length, in all forest types For example, this is equivalent to 1 log per acre, 32 feet in length, or 2 logs per acre, 16 feet in length, or any combination thereof Leave down logs that appear natural along the road edge and foreground distance zone |
| 47 - Structural Wildlife Habitat Improvement and Maintenance | Improve the habitat capability of wildlife species through structural improvements | Design improvements to increase habitat capabilities for Management Indicator Species |
| Range | | |
| 51 - Range Planning and Analysis | Make analyses to determine if increases in forage production are warranted Generally forage increases resulting from selection cutting are minor | Analyze these areas as part of grazing allotments under Allotment Management Plans<br><br>Continue grazing in this Management Area Roads are commonly used as allotment or unit boundaries |
| 52 - Range Management | Generally make no specific change in the management intensity from the adjoining areas Achieve proper use of grazing resources consistent with Visual Quality Objectives | Conduct allotment inspections, utilization checks, and surveys |
| 53 - Range Improvement - Nonstructural | Make reseeding and fertilizing of specified roads and landings the primary activity to provide forage and watershed protection consistent with Visual Quality Objectives | Treat roads and landings that will be closed to vehicle use but will be used again during the next timber entry |
| 54 - Range Improvement - Structural | Construct all forms of range improvements needed for the management of livestock on the allotment | Construct new improvements based on objectives in approved Allotment Management Plans |
| 55 - Range Improvement - Maintenance | Maintain improvements to meet range management objectives and Visual Quality Objectives | Make maintenance the responsibility of the permittee |

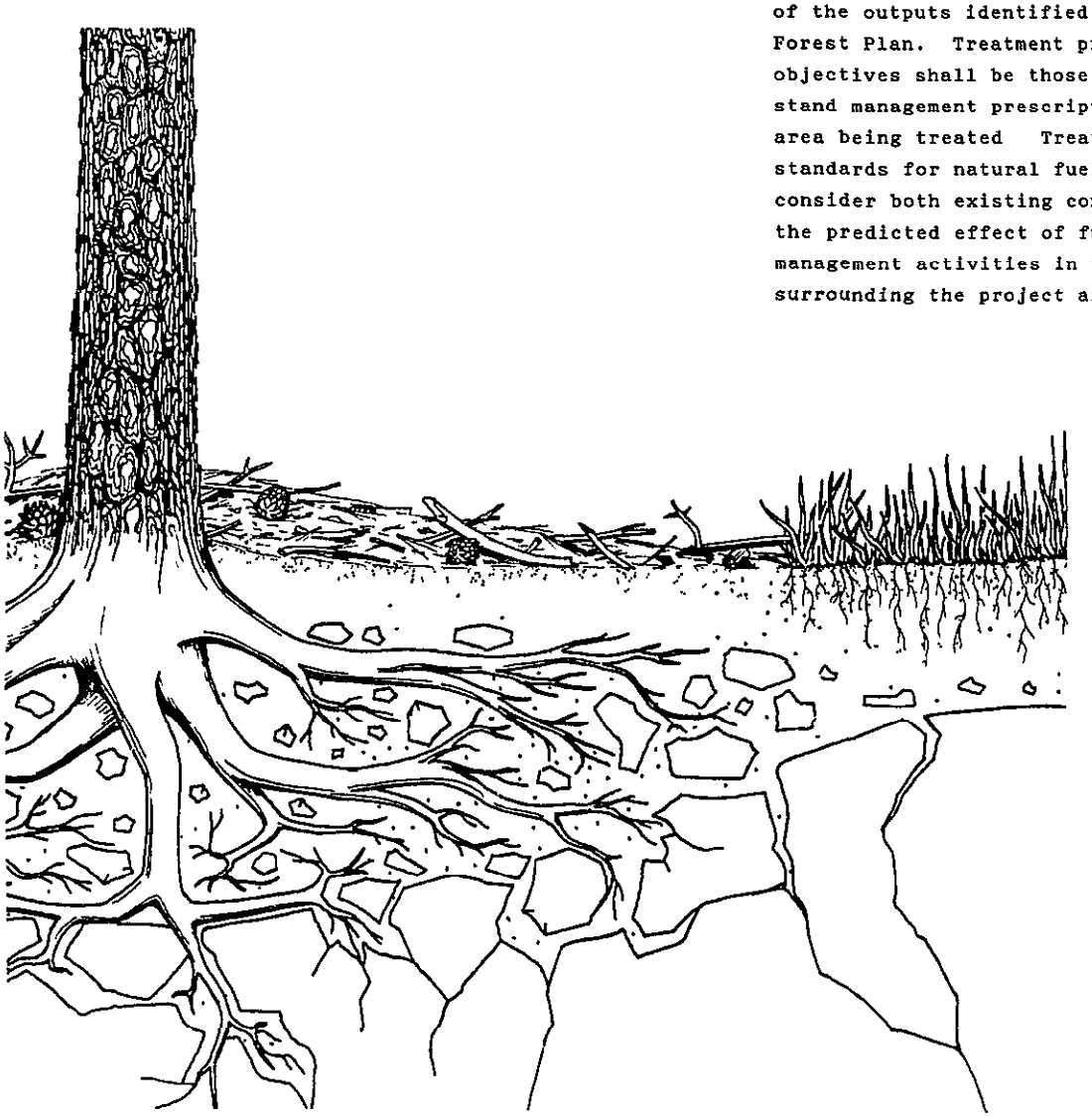
| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Timber | | |
| 64 - Selection Cutting Method | Manage stands under the selection system to produce scheduled high yields of forest products and meet Visual Quality Objectives | Harvest trees in small groups, less than 2 acres, or individually, to create a visual diversity distribution of tree sizes to meet Retention Most units will be individual trees or group harvest of less than 1 acre<br><br>Maintain the species composition that is most productive for the site and that enhances and maintains visual diversity Leave some old, large - character trees for variability and interest<br><br>Thin merchantable and submerchantable trees to maintain growth and reduce mortality<br><br>In addition to removing trees to meet size and spacing objectives, remove dead, dying, and diseased trees |
| 66 - Special Cutting - Other | Improve visual diversity. | Utilize special cutting to open identified vistas and views |
| 77 - Release and Weeding | Eliminate competing vegetation and improve conifer stocking consistent with uneven-aged selection and visual quality<br><br>Perform timber stand improvement to maintain or improve stand vigor | Manage conifer stocking and control competing vegetation Maintain conifer height and diameter growth commensurate with site, as per appropriate yield tables Use all available release and weeding methods Leave damaged but sound trees to be used as visual character trees in the foreground view area |
| 78 - Precommercial Thinning | Eliminate competing vegetation and improve conifer stocking consistent with uneven-aged selection and visual quality | Remove competing vegetation by hand, mechanical, and chemical methods. Thin submerchantable trees that have poor genetic characteristics, are damaged and diseased, or are surplus to desired stocking by tree class. |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 83 - Watershed Maintenance and Rehabilitation | | Where the beneficial uses of water are adversely affected due to man's activities and natural disasters such as fire and flood, stabilize stream channels and the adjacent side slopes utilizing any reasonable methods that will meet Retention Foreground standards Utilize native species and/or natural appearing vegetation to maintain stability whereever possible |
| 86 - Soil Support Services | Protect soils subject to high surface runoff or having potential for unacceptable surface and mass movement because of steep or unstable slopes | Maintain at least 70 percent ground cover on slopes lying downhill from areas of high surface runoff such as lava caps, rock outcrops, and shallow soils underlain by impervious bedrock |
| 87 - Soil Resource Maintenance and Improvement | Optimize soil productivity through planning, implementation, and upkeep of projects | Initiate soil resource maintenance and improvement measures when less than 85 percent of the activity area exceeds acceptable soil condition standards. |
| Minerals and Geology | | |
| 88 - Minerals Management - Locatables | Meet minerals needs while maintaining visual quality objectives | Limit tree removal to a minimum Mining activities are generally not compatible with Retention |
| | Coordinate access with existing or planned access roads | Design mitigation or restoration measures to meet visual quality objectives and restore timber productivity Remove facilities no longer needed for mining purposes |
| 89 - Minerals Management - Leasables | Meet minerals needs while maintaining visual quality objectives | Limit tree removal to a minimum Mining activities are generally not compatible with Retention |
| | Coordinate access with existing or planned access roads | Design mitigation or restoration measures to meet visual quality objectives and restore timber productivity Remove facilities no longer needed for mining purposes |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 90 - Minerals Management - Mineral Materials | Minimize the visual impact of accessing and removing saleable minerals materials | Design specific and strategically located sites for stockpiling and disposal Obtain additional road material from road widening and realignment projects<br><br>Attempt to obtain mineral materials from designated borrow sites outside of the Foreground Retention |
| 91 - Geologic Inventory and Evaluation | Protect geological hazard areas from unacceptable surface or mass movement | Modify harvest practices and road facility developments to maintain vegetative stabilization of the soil where standard uneven-aged management practices would result in excessive soil loss because of slope (generally over 70 percent) or geologic instability. |
| Lands | | |
| 96 - Special Use Management - Nonrecreation | Issue Special Use Permits that will meet the Visual Quality Objective of Retention | All Special Use Permits should facilitate timber, minerals, and other resource activities to the extent reasonably possible Issue such permits only when absolutely necessary. |
| 98 - Power Related Licenses and Permits | Do not allow major power projects that are incompatible with Foreground Retention Visual Quality Objectives | Minimize impacts on visual quality, water quality, timber, and wildlife habitat objectives<br><br>This is an avoidance area for transportation-utility corridors unless mitigation retains Visual Quality Objectives |
| Facilities | | |
| 106 - Trail Construction and Reconstruction | Provide short-loop trails in this part of the General Forest Zone. Provide the opportunity for the public to view and experience typically uneven-aged forest management. | Make most short-loop trails approximately 2-5 miles, although the loop may tie into existing system trails. Maintain at Level II. |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Allow foot, equestrian, and motorized travel Specifically identify equestrian use Such trails shall be approved and signed for horses |
| 108 - Transportation Management - Trails | Protect existing system trails and maintain them during timber management operations | Maintain trails now on the Forest Development Transportation System on their existing alignment during timber sale and silvicultural operations Return trail tread to its original condition and remove slash for 10 feet each side of the trail |
| | | Close maintenance Level I timber sale roads (which parallel or obliterate system trails) to regular travel after completion of the sale Use them as trails unless it is essential that such roads be kept open |
| | | Allow temporary interruptions to public use of the trails during timber sale and silvicultural operations Post signs to inform the public of the temporary closure Retain the visual quality objective along Sensitivity Level 1 trails. |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use appropriate suppression strategies at a least cost effort to meet resource objectives |
| 112 - Activity Fuels | Use of prescribed fire is acceptable to meet resource objectives | Consider all fuel treatment methods in conjunction with the use of fire mechanical, chemical, and manual Select on the basis of costs, outputs, and environmental effects |
| | | Treat activity fuels to a level and frequency that will sustain timber outputs identified in the Forest Plan. Treatment project objectives shall be those specified in stand management prescriptions for the area being treated |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Consider treatment standards for both existing conditions and the predicted effects of future management activities surrounding the project area |
| 114 - Natural Fuels Management | Minimize environmental impacts and resource losses caused by wildfire<br><br>Use of prescribed fire is acceptable to meet resource objectives | Consider all fuel treatments in conjunction with the use of fire· mechanical, chemical, or manual Select on the basis of costs, outputs, and environmental effects<br><br>Treat natural fuels to a level and frequency that will permit attainment of the outputs identified in the Forest Plan. Treatment project objectives shall be those specified in stand management prescriptions for the area being treated Treatment standards for natural fuels will consider both existing conditions and the predicted effect of future management activities in the area surrounding the project area |



## MANAGEMENT AREA NUMBER 21

### VISUAL FOREGROUND PARTIAL RETENTION

**Management Emphasis**

Maintain the natural character of Foreground Partial Retention where high site even-aged timber practices appear as minor disturbances on the landscape

Provide opportunities for compatible wildlife enhancement, grazing, minerals exploration and development, and dispersed recreation activities Where in harmony with the above, manage red fir stands to increase water yields and to prolong snow melt period

**Description**

Management Area Number 21 contains 14,885 acres of high site timber lands that are capable, available, and suitable (CAS) for scheduled harvest These lands have a Visual Quality Objective of Foreground Partial Retention comprised of Sensitivity Level 2, Variety Class A and B viewsheds Even-aged timber harvest are employed in Management Area Number 21 consistent with the Visual Quality Objective Harvest openings will generally be 5 to 10 acres in size

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| **Recreation** | | |
| 4 - Recreation Opportunity Spectrum-Semiprimitve Motorized<br>5 - Recreation Opportunity Spectrum - Roaded Natural | Maintain a range of recreation experiences, since existing classes vary between Management Areas Keep Recreation Opportunity Spectrum levels at the approved class in the Recreation Opportunity Spectrum Inventory | Manage dispersed recreation in these areas to maintain or improve the approved ROS classes consistent with Management Area values and implementation plans |
| 13 - Visual Resource Inventory and Planning | Provide project level data to aid in meeting visual quality objectives | Verify and update visual data during project implementation Determine the significance of visual resources and complete Visual Absorption Capability studies on a project basis to enhance or improve the Visual quality<br><br>Mitigate visual loss resulting from approved major projects such as highway widening or realignment, transmission lines, mining operations, dams, reservoirs, conduits, penstocks, etc Coordinate closely with proponents. Start mitigation during the planning and design stage |
| 16 - Visual Quality Objective - Partial Retention | Design land and vegetation disturbance projects to meet Partial Retention, as a minimum, in the foreground distance zones where this is the Visual Quality Objective | Base size, shape, and dispersion of harvest units, road construction, and other resource disturbances on meeting Foreground Partial Retention |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 19 - Visual Resource Improvement | Restore landscapes to adopted Visual Quality Objectives. | Develop a method of improvement for landscapes that do not meet adopted Visual Quality Objectives. |
| 23 - Installation or Construction of Interpretive Services not on inter- | Provide interpretation of even-aged forest management | Develop wayside exhibits, interpretive trails, and publications that explain timber management practices and benefits. |
| 25 - Dispersed Recreation Management | Provide dispersed recreation activities that are consistent with even-aged timber management objectives and Scenic Foreground Partial Retention | Allow public wood cutting where it will reduce fuel loading or maintain or improve visual conditions |
| Fish and Wildlife | | |
| 40 - Wetlands Habitat Improvement and Maintenance | Improve or maintain habitat for wetland species. | Increase targeted wetland species through habitat management |
| 43 - Habitat Improvement - Vegetation Enhancement | Enhance productivity of forage and cover plants for wildlife | Design projects to increase habitat capabilities for management indicator species. Adhere to guidelines set forth in the booklet Guidelines for Timber and Wildlife Coordination in Regeneration Cutting<br><br>Encourage mast and browse production to the extent that timber productivity is not significantly reduced. |
| 47 - Structural Wildlife Habitat Improvement and Maintenance | Improve the habitat capability of wildlife species through structural improvements | Design improvements to increase habitat capabilities for Management Indicator Species |
| Range | | |
| 51 - Range Planning and Analysis | Analyze forage produced in connection with timber management activities. Allow grazing under existing permits or new allotments | Permit grazing on acres of 60 percent slope or less that produce at least 50 pounds of usable forage per acre, provided that through analysis and allotment management planning, grazing is found to be compatible with any active reforestation projects |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 52 - Range Management | Administer grazing allotments to achieve proper use of forage resources while avoiding unacceptable browsing or trampling damage to plantations Maintain protection of soil and water quality | Accept damage to conifer seedlings to planned limits |
| 53 - Range Improvement - Nonstructural | Seed and fertilize roads, landings, and areas disturbed by logging activities. | Apply to intermittently-used unsurfaced roads, landings, and other areas that are not needed for timber production. |
| 54 - Range Improvement - Structural | Install all types of structural range improvements to meet allotment management objectives | Construct temporary fences (2-3 year duration) around selected plantations to ensure seedling establishment Design and locate fences to blend in with the area |
| 55 - Range Improvement - Maintenance | Maintain improvements to serve both range and timber needs | Maintain improvements established for the management of livestock on the allotment by the permittee Maintain temporary fences around plantations |
| Timber | | |
| 58 - Clearcut Cutting Method | Clearcut poorly stocked and understocked stands | Give priority to stands that have the poorest growth in relation to their potential according to site and age Perform clearcutting when residual understory will not meet Regional stocking standards after removal of overstory and treatment of fuels. |
| | Clearcut existing fully stocked and regenerated stands based on economic scheduling | Schedule additional harvest through regular FORPLAN allocation Follow the Standards and Guidelines outlined under Forest-wide Practice 56 for the size, shape, and dispersion of harvest units |
| 59 - Shelterwood Cutting Method - Seed Step | Apply shelterwood cutting in stands to be regenerated where artificial regeneration would be difficult if the stand had been clearcut, and if natural or artificial regeneration is obtainable with the improved microclimate resulting from the shelterwood trees | Leave approximately 5 to 15 trees per acre Follow the Standards and Guidelines under Forest-wide Practice 56 for the size, shape, and dispersion of harvest units Stands to be harvested under seed step shelterwood must have sufficient basal area in dominant, wind-firm, genetically desirable trees to provide adequate seed production |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 60 - Shelterwood Cutting Method - Removal Step | Apply to stands predicted to meet Regional stocking standards after harvest of overstory and treatment of fuels | Meet Regional stocking standards after overstory removal. Use artificial regeneration to meet standards, if necessary Where regeneration is established by seed step cutting, remove overstory as soo- as Regional stocking standards can be met |
| 61 - Intermediate Cutting Method - Sanitation and Salvage | Harvest current mortality and additional mortality expected before next entry when economically and environmentally practical. | Remove trees with a high probability of dying within 10 years Avoid damage to residual stand and reduction in growing stock<br><br>Accomplish prompt salvage of all economically accessible mortality except where protection of soil, wildlife, and residual timber values will preclude it. |
| 62 - Intermediate Cutting Method - Commercial Thinning | Maximum yields from stands prior to final harvest by periodic removal of excess stocking. | Maintain basal area between desired levels and 90 percent of maximum.<br><br>Schedule entry, during this Plan period, into all immature, merchantable stands that exceed desired stocking levels and that are suitable for tractor logging. |
| 63 - Intermediate Cutting Method - Predominant Removal | Develop even-aged stands where scattered old growth trees presently exist over an immature, well-stocked understory. | Remove scattered overstory trees from well-stocked stands that are mostly over 50 years of age. Apply this cutting method when overstory volumes are light, generally lower than 10,000 broad feet per acre. |
| 66 - Special Cutting - Other | Improve visual diversity | Utilize special cutting to open identified vistas and views. |
| 67 - Snowpack Cutting Methods | Improve water yields by applying occasional snowpack cutting in association with uneven-aged management | Integrate snowpack cutting with overall uneven-aged patterns Within these logical units, create harvest openings of approximately one-half to two acres that are oriented to the road systems |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 75 - Tree Improvement | Establish and maintain progeny test sites to determine productive potential of genetic plant material | Intensively manage competing vegetation within progeny test sites to keep tree vigor high while maintaining sufficient ground cover to prevent soil degradation<br><br>Keep insect, disease, and animal damage within acceptable limits by application of integrated pest management |
| 77 - Release and Weeding | Manage competing vegetation in juvenile stands to maintain growth approximately at site potential | Base the method, timing, and intensity of treatment upon interdisciplinary study of effective alternatives and the selection of treatment that meets resource management objectives in the most cost-effective way<br><br>Apply release treatment to new stands as soon as conifer growth reduction is foreseen, when costs and environmental impacts are least, and effectiveness is greatest<br><br>Apply fertilizers where testing has shown nutrient deficiencies exist and where an environmental assessment has shown economic returns are substantial and environmental impacts are minimal<br><br>Coordinate release treatments with other current or subsequent treatments to reduce costs and improve growth For example, fertilization after release may prevent the need for a subsequent release treatment, and preventing large brush from developing may permit the early use of prescribed fire to manage competition |
| 78 - Precommercial Thinning | Manage stocking in sapling stands to attain conditions suitable for commercial thinning at the earliest age possible | Follow Regional guidelines for stocking after precommercial thinning Perform commercial thinning as soon as sampling stands (1) exceed stocking levels, (2) are expected to experience |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | only minor losses to mortality, and (3) are expressing tree dominance. Precommercially thin before trees are 15 feet tall or 15 years old, whichever comes first, and preferably before they are 10 feet tall or 10 years old. |
| Water and Soils | | |
| 86 - Soil Support Services | Protect soils subject to high surface runoff or having potential for unacceptable surface and mass movement because of steep or unstable slopes. | Maintain at least 70 percent ground cover on slopes lying downhill from areas of high surface runoff such as lava caps, rock outcrops, and shallow soils underlain by impervious bedrock |
| 87 - Soil Resource Maintenance and Improvement | Optimize soil productivity through planning, implementation, and upkeep of projects | Initiate soil resource maintenance and improvement measures when less than 85 percent of the activity area exceeds acceptable soil condition standards |
| Minerals and Geology | | |
| 88 - Minerals Management - Locatables | Meet minerals needs while maintaining visual quality objectives. | Limit tree removal to a minimum |
| | Coordinate access with existing or planned access roads | Design mitigation or restoration measures to restore timber productivity. Remove facilities no longer needed for mining purposes |
| 89 - Minerals Management - Leasables | Meet minerals needs while maintaining visual quality objectives | Limit tree removal to a minimum |
| | Coordinate access with existing or planned access roads. | Design mitigation or restoration measures to restore timber productivity Remove facilities no longer needed for mining purposes |
| 90 - Minerals Management - Mineral Materials | Minimize the visual impact of accessing and removing saleable minerals materials. | Attempt to obtain mineral materials from borrow sites outside of the Foreground Partial Retention Management area |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 91 - Geologic Inventory and Evaluation | Protect geological hazard areas from unacceptable surface or mass movement | Modify harvest practices and road facility developments to maintain vegetative stabilization of the soil where standard uneven-aged management practices would result in excessive soil loss because of slope (generally over 70 percent) or geologic instability. |
| Lands | | |
| 96 - Special Use Management - Nonrecreation | Issue Special Use Permits that will meet Foreground Partial Retention Visual Quality Objectives | Give priority to those types of Special Use Permits that will facilitate timber and minerals management activities |
| 98 - Power Related Licenses and Permits | Blend proposed projects in with the Foreground Partial Retention Visual Quality Objective | Minimize impacts on visual quality, water quality, timber, and wildlife habitat objectives<br><br>This area is a window, with mitigation, for transportation-utility corridors |
| Facilities | | |
| 106 - Trail Construction and Reconstruction | Provide short-loop trails in this part of the General Forest Zone Provide the opportunity for the public to view and experience even-aged forest management | Make most short-loop trails approximately 2-5 miles, although the loop may tie into existing system trails. Maintain at Level II<br><br>Allow foot, equestrian, and motorized travel Specifically identify equestrian use Such trails shall be approved and signed for horses Do not change the Visual Quality Objective of the area where system trails are within timber cut units |
| 108 - Transportation Management - Trails | Protect existing system trails and maintain them during timber management operations | Maintain trails now on the Forest Development Transportation System on their existing alignment during timber sale and silvicultural operations Return trail tread to its original condition and remove slash for 10 feet each side of the trail |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Use Maintenance Level I timber sale roads (which parallel or obliterate system trails) as trails unless it is essential that such roads be kept open<br><br>Allow temporary interruptions to public use of the trails during timbe sale and silvicultural operations Post signs to inform the public of th temporary closure |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use appropriate suppression strategies at a least cost effort to meet resource objectives |
| 112 - Activity Fuels | Use of prescribed fire is acceptable to meet resource objectives | Consider all fuel treatment methods in conjunction with the use of fire mechanical, chemical, and manual Select on the basis of costs, outputs, and environmental effects<br><br>Treat activity fuels to a level and frequency that will sustain timber outputs identified in the Forest Plan Treatment objectives shall be those specified in stand management prescriptions for the area being treated<br><br>Consider treatment standards for bot existing conditions and the predicte effects of future management activ-ities surrounding the project area |
| 114 - Natural Fuels Management | Minimize environmental impacts and resource losses caused by wildfire<br><br>Use of prescribed fire is acceptable to meet resource objectives | Consider all fuel treatments in conjunction with the use of fire mechanical, chemical, or manual Select on the basis of costs, outputs, and environmental effects |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | Reduce long-term protection costs and suppression activities | Treat natural fuels to a level and frequency that will permit attainment of the outputs identified in the Forest Plan Treatment project objectives shall be those specified in stand management prescriptions for the area being treated Treatment standards for natural fuels will consider both existing conditions and the predicted effect of future management activities in the area surrounding the project area |

22

## MANAGEMENT AREA NUMBER 22

### VISUAL MIDDLEGROUND RETENTION

**Management Emphasis**

Maintain the natural character of Middleground Retention where high site even-aged timber harvest practices are applied to the landscape

Provide opportunities for compatible wildlife enhancement, grazing, minerals exploration and development, and dispersed recreation activities

Manate red fir stands to increase water yields and to prolong the snow melt period.

**Description**

Management Area Number 22 contains 22,315 acres of high site timber lands that are capable, available, and suitable (CAS) for scheduled harvest These lands have a Visual Quality Objective of Middleground Retention comprised of Sensitivity Level 1, Variety Class A viewsheds In general, these landscapes are featured by river gorges and Sierra high country with diverse characteristics such as rock outcroppings, lakes, and a mix of open meadows, pockets of conifer timber, and aspen groves Even-aged timber harvests are employed in Management Area Number 22 consistent with the Visual Quality Objective

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| **Recreation** | | |
| 4 - Recreation Opportunity Spectrum-Semiprimitve Motorized<br>5 - Recreation Opportunity Spectrum - Roaded Natural | Maintain a range of recreation experiences, since existing classes vary between Management Areas Keep Recreation Opportunity Spectrum levels at the approved class in the Recreation Opportunity Spectrum Inventory | Manage dispersed recreation in these areas to maintain or improve the approved ROS classes consistent with Management Area values and implementation plans |
| 13 - Visual Resource Inventory and Planning | Provide project level data to aid in meeting Visual Quality Objectives. | Verify and update visual data during project implementation Determine the significance of visual resources and complete Visual Absorption Capability studies on a project basis to enhance or improve the visual quality<br><br>Mitigate visual loss resulting from approved major projects such as highway widening or realignments, transmission lines, mining operations, dams, reservoirs, conduits, penstocks, etc. Coordinate closely with proponents Start mitigation during the planning and design stage |
| 16 - Visual Quality Objective - Retention | Design land and vegetation disturbance projects to meet Retention, as a minimum, in Middleground distance zones where this is the Visual Quality Objective. | Base size, shape, and dispersion of harvest units, road construction, and other resource disturbances on meeting Middleground Retention |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 19 - Visual Resource Improvement | Restore landscapes to adopted Visual Quality Objectives | Develop a method of improvement for lands that do not meet the Visual Quality Objectives |
| 23 - Installation or Construction of Interpretive Services not on Interpretive Services Sites | Provide informational and educational material that explains the blending of even-aged timber practices with visual resource management | Develop wayside exhibits, interpretive trails, and publications that explain timber management practices and benefits |
| 25 - Dispersed Recreation Management | Provide for recreation activities that are consistent with visually constrained even-aged timber management and Middleground Retention | Allow public wood cutting where it will reduce fuel loading or maintain or improve visual conditions |
| Fish and Wildlife | | |
| 40 - Wetlands Habitat Improvement and Maintenance | Improve or maintain habitat for wetland species. | Increase targeted wetland species through habitat management |
| 43 - Habitat Improvement - Vegetation Enhancement | Enhance productivity of forage and cover plants for wildlife | Design vegetative manipulation to increase habitat capabilities for management indicator species Adhere to guidelines set forth in the booklet Guidelines for Timber and Wildlife Coordination in Regeneration Cutting<br><br>Encourage mast and browse production to the extent that timber productivity is not significantly reduced |
| 47 - Structural Wildlife Habitat Improvement and Maintenance | Improve the habitat capability of wildlife species through structural improvement | Design improvements to increase habitat capabilities for Management Indicator Species. |
| Range | | |
| 51 - Range Planning and Analysis | Analyze forage produced in connection with timber management activities Allow grazing under existing permits or new allotments | Permit grazing on areas of 60 percent slope or less that produce at least 50 pounds of usable forage per acre, provided that through analysis and allotment management planning, grazing is found to be compatible with any active reforestation projects |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 52 - Range Management | Administer grazing allotments to achieve proper use of forage resources while avoiding unacceptable browsing or trampling damage to plantations Maintain protection of soil and water quality. | Accept damage to conifer seedlings to planned limits. |
| 53 - Range Improvement - Nonstructural | Seed and fertilize roads, landings, and areas disturbed by logging activities | Apply to intermittently used unsurfaced roads, landings, and other areas that are not needed for timber production |
| 54 - Range Improvement - Structural | Install all types of structural range improvements to meet allotment management objectives | Construct temporary fences (2-3 year duration) around selected plantations to ensure seedling establishment Design and locate fences to blend in with the area |
| 55 - Range Improvement - Maintenance | Maintain improvements to serve both range and timber needs. | Maintain improvements established for the management of livestock on the allotment by the permittee Maintain temporary fences around plantations |
| Timber | | |
| 58 - Clearcut Cutting Method | Clearcut poorly stocked and understocked stands | Give priority to stands that have the poorest growth in relation to their potential according to site and age. Perform clearcutting when residual understory will not meet Regional stocking standards after removal of overstory and treatment of fuels |
| | Clearcut existing fully stocked and regenerated stands based on economic | Schedule additional harvest through regular FORPLAN allocation |
| 59 - Shelterwood Cutting Method - Seed Step | Apply shelterwood cutting in stands to be regenerated where artificial regeneration would be difficult if the stand had been clearcut, and if natural or artificial regeneration is obtainable with the improved microclimate resulting from the shelterwood trees | Leave approximately 10 to 20 trees per acre. Stands to be harvested under seed step shelterwood must have sufficient basal area in dominant, wind-firm, genetically desirable trees to provide adequate seed production |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 60 - Shelterwood Cutting Method - Removal Step | Apply to stands predicted to meet Regional stocking standards after harvest of overstory and treatment of fuels | Meet Regional stocking standards after overstory removal Use artificial regeneration to meet standards, if necessary Where regeneration is established by seed step cutting, remove overstory as soon as Regional stocking standards can be met |
| 61 - Intermediate Cutting Method - Sanitation and Salvage | Harvest current mortality and additional mortality expected before next entry when economically and environmentally practical | Remove trees with a high probability of dying within 10 years Avoid damage to residual stand and reduction in growing stock<br><br>Accomplish prompt salvage of all economically accessible mortality except where protection of soil, wildlife, and residual timber values preclude |
| 62 - Intermediate Cutting Method - Commercial Thinning | Maximize yields from stands prior to final harvest by periodic removal of excess stocking | Maintain basal area between desired levels and 90 percent of maximum<br><br>Schedule entry, during this Plan period, into all immature, merchantable stands that exceed desired stocking levels and that are suitable for tractor logging |
| 63 - Intermediate Cutting Method - Predominant Removal | Develop even-aged stands where scattered old growth trees presently exist over an immature, well-stocked understory | Remove scattered overstory trees from well-stocked stands that are mostly over 50 years of age Apply this cutting method when overstory volumes are light, generally lower than 10,000 board feet per acre |
| 67 - Snowpack Cutting Methods | Improve water yields by applying occasional snowpack cutting in association with high-site even-aged management | Integrate snowpack cutting with overall even-aged patterns served by common skid road and haul road systems Within these logical units, create harvest openings of approximately one-half to two acres that are oriented to the road system |
| 75 - Tree Improvement | Establish and maintain progeny test sites to determine productive potential of genetic plant material | Intensively manage competing vegetation within progeny test sites to keep tree vigor high while maintaining sufficient ground cover to prevent soil degradation |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Keep insect, disease, and animal damage within acceptable limits by appli- cation of integrated pest management. |
| 77 - Release and Weeding | Manage competing vegetation in juvenile stands to maintain growth approximately at site potential. | Base the method, timing, and intensity of treatment upon interdisciplinary study of effective alternatives and the selection of treatment that meets resource management objectives in the most cost-effective way<br><br>Apply release treatment to new stands as soon as conifer growth reduction is foreseen, when costs and environmental impacts are least, and effectiveness is greatest.<br><br>Apply fertilizers where testing has shown nutrient deficiencies exist and where an environmental assessment has shown economic returns are substantial and environmental impacts are minimal.<br><br>Coordinate release treatments with other current or subsequent treatments to reduce costs and improve growth For example, fertilization after release may prevent the need for a subsequent release treatment; also, preventing large brush from developing may permit the early use of prescribed fire to manage competition. |
| 78 - Precommercial Thinning | Manage stocking in sapling stands to attain conditions suitable for commercial thinning at the earliest age possible. | Follow Regional guidelines for stocking after precommercial thinning Perform commercial thinning as soon as sapling stands (1) exceed stocking levels, (2) are expected to experience only minor losses to mortality, and (3) are expressing tree dominance. Precommercially thin before trees are 15 feet tall or 15 years old, whichever comes first, and preferably before they are 10 feet tall or 10 years old. |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Water and Soils | | |
| 86 - Soil Support Services | Protect soils subject to high surface runoff or having potential for unacceptable surface or mass movement because of steep or unstable slopes | Maintain at least 70 percent ground cover on slopes lying downhill from areas of high surface runoff such as lava caps, rock outcrops, and shallow soils underlain by impervious bedrock |
| 87 - Soil Resource Maintenance and Improvement | Optimize soil productivity through the planning, implementation, and upkeep of projects | Initiate soil resource maintenance and improvement measures when less than 85 percent of the activity area exceeds acceptable soil condition standards. |
| Minerals and Geology | | |
| 88 - Minerals Management - Locatables | Meet minerals needs while maintaining Visual Quality Objectives | Limit tree removal to a minimum |
| | Coordinate access with existing or planned access roads | Design mitigation or restoration measures to restore timber productivity Remove facilities no longer needed for mining purposes |
| 89 - Minerals Management - Leasables | Meet minerals needs while maintaining Visual Quality Objectives. | Limit tree removal to a minimum. |
| | Coordinate access with existing or planned access roads | Design mitigation or restoration measures to restore timber productivity Remove facilities no longer needed for mining purposes |
| 90 - Minerals Management - Minerals Materials | Minimize the visual impact of accessing and removing saleable minerals materials | Attempt to obtain mineral materials from borrow sites outside of the Middleground Retention area |
| 91 - Geologic Inventory and Evaluation | Protect geological hazard areas from unacceptable surface or mass movement | Modify harvest practices and road facility developments to maintain vegetative stabilization of the soil where standard even-aged management practices would result in excessive soil loss because of slope (generally over 70 percent) or geologic instability |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Lands | | |
| 96 - Special Use Management - Nonrecreation | Issue Special Use Permits that will meet Middleground Retention Visual Quality Objectives. | Give priority to those types of Special Use Permits that will facilitate timber and minerals management activities. |
| 98 - Power Related Licenses and Permits | Blend proposed projects in with the Middleground Retention Visual Quality Objective. | Minimize impacts on visual quality, water quality, timber, and, wildlife wildlife habitat objectives Mitigate the loss of any of these resources.<br><br>This area is a window, with mitigation, for transportation-utility corridors. |
| Facilities | | |
| 106 - Trail Construction and Reconstruction | Provide short-loop trails in this part of the General Forest Zone. Provide the opportunity for the public to view and experience even-aged forest management | Make most short-loop trails approximately 2-5 miles, although the loop may tie into existing system trails Maintain at Level II.<br><br>Allow foot, equestrian, and motorized travel. Specifically identify equestrian use Such trails shall be approved and signed for horses. |
| 108 - Transportation Management - Trails | Protect existing system trails and maintain them during timber management operations. | Maintain trails now on the Forest Development Transportation System on their existing alignment during timber sale and silvicultural operations Return trail tread to it original condition and remove slash for 10 feet each side of the trail<br><br>Use Maintenance Level I timber sale roads (which parallel or obliterate system trails) as trails unless it is essential that such roads be kept open.<br><br>Allow temporary interruptions to public use of the trails during timber sale and silvicultural operations. Post signs to inform the public of th temporary closure. Retain the desire visual quality objective along Sensitivity Level 1 trails. |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area. | Use appropriate suppression strategies at a least cost effort to meet resource objectives |
| 112 - Activity Fuels | Minimize environmental impacts and resource losses caused by wildfire .<br><br>Use of prescribed fire is acceptable to meet resource objectives | Consider all fuel treatment methods in conjunction with the use of fire mechanical, chemical, and manual Select on the basis of costs, outputs and environmental effects<br><br>Treat activity fuels to a level and frequency that will sustain timber outputs identified in the Forest Plan Treatment objectives shall be those specified in stand management prescriptions for the area being treated<br><br>Consider treatment standards for both existing conditions and the predicted effects of future management activities surrounding the project area |
| 114 - Natural Fuels Management | Minimize environmental impacts and resource losses caused by wildfire<br><br>Use of prescribed fire is acceptable to meet resource objectives | Consider all fuel treatments in conjunction with the use of fire mechanical, chemical, or manual Select on the basis of costs, outputs, and environmental effects<br><br>Treat natural fuels to a level and frequency that will permit attainment of the outputs identified in the Forest Plan Treatment project objectives shall be those specified in stand management prescriptions for the area being treated<br><br>Treatment standards for natural fuels will consider both existing conditions and the predicted effect of future management activities in the area surrounding the project area |

# 23

## MANAGEMENT AREA NUMBER 23

### VISUAL MIDDLEGROUND PARTIAL RETENTION

**Management Emphasis**

Maintain the natural character of Middleground Partial Retention where high site even-aged timber harvest practices are applied to the landscape.

Provide opportunities for compatible wildlife enhancement, grazing, minerals exploration and development, and dispersed recreation.

Manage red fir stands to increase water yield and to prolong the snow melt period

**Description**

Management Area Number 23 contains 29,967 acres of high site timber lands that are capable, available, and suitable (CAS) for scheduled harvest These lands have a Visual Quality Objective of Middleground Partial Retention comprised of Sensitivity Level 1, Variety Class B and Sensitivity Level 2, Variety Class A viewsheds In general, most Middleground views are interrupted by an adjacent ridge within 1-1/2 miles, although some views extend to 3 miles Even-aged timber harvests are employed in Management Area 23 consistent with the Visual Quality Objective

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| **Recreation** | | |
| 4 - Recreation Opportunity Spectrum-Semiprimitve Motorized<br>5 - Recreation Opportunity Spectrum - Roaded Natural | Maintain a range of recreation experiences, since existing classes vary between Management Areas Keep Recreation Opportunity Spectrum levels at the approved class in the Recreation Opportunity Spectrum Inventory. | Manage dispersed recreation in these areas to maintain or improve the approved ROS classes consistent with Management Area values and implementation plans |
| 13 - Visual Resource Inventory and Planning | Provide project level data to aid in meeting Visual Quality Objectives. | Verify and update visual data during project implementation Determine the significance of visual resources and complete Visual Absorption Capability studies on a project basis to enhance or improve the visual quality<br><br>Mitigate visual loss resulting from approved major projects such as highway widening or realignments, transmission lines, mining operations, dams, reservoirs, conduits, penstocks, etc. Coordinate closely with proponents. Start mitigation during the planning and design stage. |
| 16 - Visual Quality Objective-Partial Retention | Design land and vegetation disturbance projects to meet Partial Retention, as a minimum, in Middleground distance zones where this is the Visual Quality Objective | Base size, shape, and dispersion of harvest units, road construction, and other resource disturbances on meeting Middleground Partial Retention. |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 19 - Visual Resource Improvement | Restore landscapes to adopted Visual Quality Objectives | Develop a method of improvement for lands that do not meet the Visual Quality Objectives |
| 23 - Installation or Construction of Interpretive Services not on Interpretive Services Sites | Provide informational and educational material that explains the blending of even-aged timber practices with visual resource management | Develop wayside exhibits, interpretive trails, and publications that explain timber management practices and benefits |
| 25 - Dispersed Recreation Management | Provide for recreation activities that are consistent with visually constrained even-aged timber management and Middleground Retention | Allow public wood cutting where it will reduce fuel loading or maintain or improve visual conditions |
| Fish and Wildlife | | |
| 40 - Wetlands Habitat Improvement and Maintenance | Improve or maintain habitat for wetland species | Increase targeted wetland species through habitat management |
| 43 - Habitat Improvement - Vegetation Enhancement | Enhance productivity of forage and cover plants for wildlife | Design vegetative manipulation to increase habitat capabilities for management indicator species Adhere to guidelines set forth in the booklet Guidelines for Timber and Wildlife Coordination in Regeneration Cutting<br><br>Encourage mast and browse production to the extent that timber productivity is not significantly reduced |
| 47 - Structural Wildlife Habitat Improvement and Maintenance | Improve the habitat capability of wildlife species through structural improvement | Design improvements to increase habitat capabilities for Management Indicator Species |
| Range | | |
| 51 - Range Planning and Analysis | Analyze forage produced in connection with timber management activities Allow grazing under existing permits or new allotments | Permit grazing on areas of 60 percent slope or less that produce at least 50 pounds of usable forage per acre, provided that through analysis and allotment management planning, grazing is found to be compatible with any active reforestation projects. |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 52 - Range Management | Administer grazing allotments to achieve proper use of forage resources while avoiding unacceptable browsing or trampling damage to plantations Maintain protection of soil and water quality | Accept damage to conifer seedlings to planned limits |
| 53 - Range Improvement - Nonstructural | Seed and fertilize roads, landings, and areas disturbed by logging activities | Apply to intermittently used unsurfaced roads, landings, and other areas that are not needed for timber production |
| 54 - Range Improvement - Structural | Install all types of structural range improvements to meet allotment management objectives | Construct temporary fences (2-3 year duration) by the Forest Service around selected plantations to ensure seedling establishment Design and locate fences to blend in with the area |
| 55 - Range Improvement - Maintenance | Maintain improvements to serve both range and timber needs. | Maintain improvements established for the management of livestock on the allotment by the permittee Maintain temporary fences around plantations by the Forest Service |
| Timber | | |
| 58 - Clearcut Cutting Method | Clearcut poorly stocked and understocked stands. | Give priority to stands that have the poorest growth in relation to their potential according to site and age Perform clearcutting when residual understory will not meet Regional stocking standards after removal of overstory and treatment of fuels |
| | Clearcut existing fully stocked and regenerated stands based on economic | Schedule additional harvest through regular FORPLAN allocation. |
| 59 - Shelterwood Cutting Method - Seed Step | Apply shelterwood cutting in stands to be regenerated where artificial regeneration would be difficult if the stand had been clearcut, and if natural or artifical regeneration is obtainable with the improved microclimate resulting from the shelter- | Leave approximately 10 to 20 trees per acre Stands to be harvested under seed step shelterwood must have sufficient basal area in dominant, wind-firm, genetically desirable trees to provide adequate seed production. |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 60 - Shelterwood Cutting Method - Removal Step | Apply to stands predicted to meet Regional stocking standards after harvest of overstory and treatment of fuels. | Meet Regional stocking standards after overstory removal. Use artificial regeneration to meet standards, if necessary Where regeneration is established by seed step cutting, remove overstory as soon as Regional stocking standards can be met |
| 61 - Intermediate Cutting Method - Sanitation and Salvage | Harvest current mortality and additional mortality expected before next entry when economically and environmentally practical | Remove trees with a high probability of dying within 10 years Avoid damage to residual stand and reduction in growing stock<br><br>Accomplish prompt salvage of all economically accessible mortality except where protection of soil, wildlife, and residual timber values preclude it |
| 62 - Intermediate Cutting Method - Commercial Thinning | Maximize yields from stands prior to final harvest by periodic removal of excess stocking | Maintain basal area between desired levels and 90 percent of maximum<br><br>Schedule entry, during this Plan period, into all immature, merchantable stands that exceed desired stocking levels and that are suitable for tractor logging |
| 63 - Intermediate Cutting Method - Predominant Removal | Develop even-aged stands where scattered old growth trees presently exist over an immature, well-stocked understory | Remove scattered overstory trees from well-stocked stands that are mostly over 50 years of age Apply this cutting method when overstory volumes are light, generally lower than 10,000 board feet per acre |
| 67 - Snowpack Cutting Methods | Improve water yields by applying occasional snowpack cutting in association with high-site even-aged management | Integrate snowpack cutting with overall even-aged patterns served by common skid road and haul road systems Within these openings of approximately one-half to two acres that are oriented to the road system |
| 75 - Tree Improvement | Establish and maintain progeny test sites to determine productive potential of genetic plant material | Intensively manage competing vegetation within progeny test sites to keep tree vigor high while maintaining sufficient ground cover to prevent soil degradation |

23

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Keep insect, disease, and animal damage within acceptable limits by appli- cation of integrated pest management |
| 77 - Release and Weeding | Manage competing vegetation in juvenile stands to maintain growth approximately at site potential. | Base the method, timing, and intensity of treatment upon interdisciplinary study of effective alternatives and the selection of treatment that meets resource management objectives in the most cost-effective way<br><br>Apply release treatment to new stands as soon as conifer growth reduction is foreseen, when costs and environmental impacts are least, and effectiveness is greatest<br><br>Apply fertilizers where testing has shown nutrient deficiencies exist and where an environmental assessment has shown economic returns are substantial and environmental impacts are minimal<br><br>Coordinate release treatments with other current or subsequent treatments to reduce costs and improve growth For example, fertilization after release may prevent the need for a subsequent release treatment, also, preventing large brush from developing may permit the early use of prescribed fire to manage competition |
| 78 - Precommercial Thinning | Manage stocking in sapling stands to attain conditions suitable for commercial thinning at the earliest age possible | Follow Regional guidelines for stocking after precommercial thinning Perform commercial thinning as soon as sapling stands (1) exceed stocking levels, (2) are expected to experience only minor losses to mortality, and (3) are expressing tree dominance Precommercially thin before trees are 15 feet tall or 15 years old, whichever comes first, and preferably before they are 10 feet tall or 10 years old |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Water and Soils | | |
| 86 - Soil Support Services | Protect soils subject to high surface runoff or having potential for unacceptable surface or mass movement because of steep or unstable slopes | Maintain at least 70 percent ground cover on slopes lying downhill from areas of high surface runoff such as lava caps, rock outcrops, and shallow soils underlain by impervious bedrock |
| 87 - Soil Resource Maintenance and Improvement | Optimize soil productivity through the planning, implementation, and upkeep of projects | Initiate soil resource maintenance and improvement measures when less than 85 percent of the activity area exceeds acceptable soil condition standards |
| Minerals and Geology | | |
| 88 - Minerals Management - Locatables | Meet minerals needs while maintaining Visual Quality Objectives | Limit tree removal to a minimum |
| | Coordinate access with existing or planned access roads | Design mitigation or restoration measures to restore timber productivity Remove facilities no longer needed for mining purposes |
| 89 - Minerals Management - Leasables | Meet minerals needs while maintaining Visual Quality Objectives | Limit tree removal to a minimum |
| | Coordinate access with existing or planned access roads. | Design mitigation or restoration measures to restore timber productivity Remove facilities no longer needed for mining purposes |
| 90 - Minerals Management - Minerals Materials | Minimize the visual impact of accessing and removing saleable minerals materials | Attempt to obtain mineral materials from borrow sites outside of the Middleground Retention area |
| 91 - Geologic Inventory and Evaluation | Protect geological hazard areas from unacceptable surface or mass movement | Modify harvest practices and road facility developments to maintain vegetative stabilization of the soil where standard even-aged management practices would result in excessive soil loss because of slope (generally over 70 percent) or geologic instability |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Lands | | |
| 96 - Special Use Management - Nonrecreation | Issue Special Use Permits that will meet Middleground Retention Visual Quality Objectives | Give priority to those types of Special Use Permits that will facilitate timber and minerals management activities |
| 98 - Power Related Licenses and Permits | Blend proposed projects in with the Middleground Retention Visual Quality Objective | Minimize impacts in keeping with visual quality, water quality, and wildlife habitat objectives Mitigate the loss of timber production<br><br>This area is a window, with mitigation, for transportation-utility corridors |
| Facilities | | |
| 106 - Trail Construction and Reconstruction | Provide short-loop trails in this part of the General Forest Zone Provide the opportunity for the public to view and experience even-aged forest management. | Make most short-loop trails approximately 2-5 miles, although the loop may tie into existing system trails Maintain at Level II.<br><br>Allow foot, equestrian, and motorized travel. Specifically identify equestrian use Such trails shall be approved and signed for horses |
| 108 - Transportation Management - Trails | Protect existing system trails and maintain them during timber management operations | Maintain trails now on the Forest Development Transportation System on their existing alignment during timber sale and silvicultural operations Return trail tread to its original condition and remove slash for 10 feet each side of the trail<br><br>Close maintenance Level I timber sale roads (which parallel or obliterate system trails) to regular travel after completion of the sale Use them as trails unless it is essential that such roads be kept open |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Allow temporary interruptions to public use of the trails during timber sale and silvicultural operations Post signs to inform the public of the temporary closure Retain the desired visual quality objective along Sensitivity Level 1 trails |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use appropriate suppression strategies at a least cost effort to meet resource objectives |
| 112 - Activity Fuels | Minimize environmental impacts and resources losses caused by wildfire | Consider all fuel treatment methods in conjunction with the use of fire mechanical, chemical, and manual Select on the basis of costs, outputs, and environmental effects<br><br>Treat activity fuels to a level and frequency that will sustain timber outputs identified in the Forest Plan Treatment objectives shall be those specified in stand management prescriptions for the area being treated<br><br>Consider treatment standards for both existing conditions and the predicted effects of future management activities surrounding the project area |
| 114 - Natural Fuels Management | Minimize environmental impacts and resource losses caused by wildfire<br><br>Use of prescribed fire is acceptable to meet resource objective | Consider all fuel treatments in conjunction with the use of fire mechanical, chemical, or manual Select on the basis of costs, outputs, and environmental effects<br><br>Treat natural fuels to a level and frequency that will permit attainment of the outputs identified in the Forest Plan Treatment project objectives shall be those specified in stand management prescriptions for the area being treated. |

## MANAGEMENT AREA NUMBER 24

### HIGH SITE TIMBER

**Management Emphasis**

Apply a variety of silvicultural systems to obtain optimum yield of wood products over the long-term using intensive even-aged management practices Provide associated opportunities for wildlife enhancement, grazing, minerals exploration and development, and disersed recreation

Manage red fir stands to increase water yield and to prolong the snow melt period

**Description**

Management Area Number 24 contains 131,795 acres of high site timber lands that are capable, available, and suitable (CAS) for scheduled harvest Sites are generally better than Forest Survey Class 5 Forest-wide Visual Quality Objectives apply to these lands This Management Area provides the most productive timber land base in the Forest

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| **Recreation** | | |
| 5 - Recreation Opportunity Spectrum - Roaded Natural | Provide for moderate evidence of the sights and sound of man | Manage to an ROS Class of Roaded Natural |
| 16 - Visual Quality Objective - Partial Retention | Attempt to meet the existing Visual Quality Objective of Partial Retention in Background distance zones without constraining timber activities | Base size, shape, and dispersion of harvest units primarily on other than visual considerations, i e , wildlife, watershed, and timber Partial Retention Background will normally be attained as long as other resource constraints are imposed |
| 17 - Visual Quality Objective - Modification | Attempt to meet the existing Visual Quality Objective of Modification in Middleground and Background without constraining timber activities. | Base size, shape, and dispersion of harvest activities primarily on other than visual considerations Modification Middleground and Background will normally be attained as long as other resource constraints are imposed |
| 18 - Visual Quality Objective - Maximum Modification | Meet the Visual Quality Objective of Maximum Modification This rating has no effect on timber activities | Base size, shape, and dispersion on other than visual considerations in all distance zones |
| 23 - Installation or Construction of Interpretive Services not on Interpretive Services Sites | Provide interpretation of intensive even-aged forest management | Develop wayside exhibits, interpretive trails, and publications that explain timber management practices and benefits and are identified in district and Forest-wide interpretive plans |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 25 - Dispersed Recreation Management | Provide dispersed recreation activities that are consistent with even-aged timber management objectives | |
| Fish and Wildlife | | |
| 40 - Wetlands Habitat Improvement and Maintenance | Improve or maintain habitat for wetland species | Increase targeted wetland species through habitat management |
| 43 - Habitat Improvement - Vegetation Enhancement | Enhance productivity of forage and cover plants for wildlife | Design projects to improve habitat capability for Management Indicator Species<br><br>Encourage mast and browse production to the extent that timber productivity is not significantly reduced |
| 47 - Structural Wildlife Habitat Improvement and Maintenance | Improve the habitat capability of wildlife species through structural improvement. | Design improvements to increase habitat capabilities for Management Indicator Species |
| Range | | |
| 51 - Range Planning and Analysis | Analyze forage produced in connection with timber management activities<br>Allow grazing under existing permits or new allotments. | Permit grazing on areas of 60 percent slope or less that produce at least 50 pounds of usable forage per acre, provided that through analysis and allotment management planning, grazing is found to be compatible with any active reforestation projects. |
| 52 - Range Management | Administer grazing allotments to achieve proper use of forage resources while avoiding unacceptable browsing or trampling damage to plantations<br>Maintain protection of soil and water quality | Accept damage to conifer seedlings to planned limits<br><br>Conduct allotment inspections, readiness checks, and utilization checks |
| 53 - Range Improvement - Nonstructural | Seed and fertilize roads, landings, and areas disturbed by logging activities | Apply to intermittently-used unsurfaced roads, landings, and other areas that are not needed for timber production |
| 54 - Range Improvement - Structural | Install all types of structural range improvements to meet allotment management objectives | Construct temporary fences (2-3 year duration) by the Forest Service around selected plantations to ensure seedling establishment |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 55 - Range Improvement - | Maintain improvements to serve both range and timber needs | Maintain improvements established for the management of livestock on the allotment (permittee) Maintain temporary fences around plantations (Forest Service) |
| Timber | | |
| 58 - Clearcut Cutting Method | Clearcut poorly stocked and understocked stands | Give priority to stands that have the poorest growth in relation to their potential according to site and age Perform clearcutting when residual understory will not meet Regional stocking standards after removal of overstory and treatment of fuels |
| | Clearcut existing fully stocked and regenerated stands based on economic scheduling | Schedule additional harvest through regular FORPLAN allocation Follow the Standards and Guidelines outlined under Forest-wide Practice 56 for the size, shape, and dispersion of harvest units |
| 59 - Shelterwood Cutting Method - Seed Step | Apply shelterwood cutting in stands to be regenerated where artificial regeneration would be difficult if the stand had been clearcut, and if natural or artificial regeneration is obtainable with the improved microclimate resulting from the shelterwood trees | Leave approximately 5 to 15 trees per acre Follow the Standards and Guidelines under Forest-wide Practice 56 for the size, shape, and dispersion of harvest units Stands to be harvested under seed step shelterwood must have sufficient basal area in dominant, wind-firm, genetically desirable trees to provid adequate seed production |
| 60 - Shelterwood Cutting Method - Removal Step | Apply to stands predicted to meet Regional stocking standards after harvest of overstory and treatment of fuels | Meet Regional stocking standards after overstory removal Use artificial regeneration to meet standards, if necessary Where regeneration is established by seed step cutting, remove overstory as soo as Regional stocking standards can be met |
| 61 - Intermediate Cutting Method - Sanitation and Salvage | Harvest current mortality and additional mortality expected before next entry when economically and environmentally practical | Remove trees with a high probability of dying within 10 years Avoid damage to residual stand and reduction in growing stock |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Accomplish prompt salvage of all economically accessible mortality except where protection of soil, wildlife, and residual timber values will preclude it. |
| 62 - Intermediate Cutting Method - Commercial Thinning | Maximize yields from stands prior to final harvest by periodic removal of excess stocking | Maintain basal area between desired levels and 90 percent of maximum<br><br>Schedule entry, during this Plan period, into all immature, merchantable stands that exceed desired stocking levels and that are suitable for tractor logging |
| 63 - Intermediate Cutting Method - Predominant Removal | Develop even-aged stands where scattered old growth trees presently exist over an immature, well-stocked understory. | Remove scattered overstory trees from well-stocked stands that are mostly over 50 years of age Apply this cutting method when overstory volumes are light, generally lower than 10,000 board feet per acre |
| 75 - Tree Improvement | Establish and maintain progeny test sites to determine productive potential of genetic plant material | Intensively manage competing vegetation within progeny test sites to keep tree vigor high while maintaining sufficient ground cover to prevent soil degradation<br><br>Keep insect, disease, and animal damage within acceptable limits by application of integrated pest management |
| 77 - Release and Weeding | Manage competing vegetation in juvenile stands to maintain growth approximately at site potential | Base the method, timing, and intensity of treatment upon interdisciplinary study of effective alternatives Select treatment method that meets resource management objectives in the most cost-effective way<br><br>Apply release treatment to new stands as soon as conifer growth reduction is foreseen, when costs and environmental impacts are least, and effectiveness is greatest |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Apply fertilizers where testing has shown nutrient deficiencies exist and where an environmental assessment has shown economic returns are substantial and environmental impacts are minimal<br><br>Coordinate release treatments with other current or subsequent treatments to reduce costs and improve growth For example, fertilization after release may prevent the need for a subsequent release treatment, also, preventing large brush from developing may permit the early use of prescribed fire to manage competition |
| 78 - Precommercial Thinning | Manage stocking in sapling stands to attain conditions suitable for commercial thinning at the earliest age possible. | Follow Regional guidelines for stocking after precommercial thinning Perform precommercial thinning as soon as a sapling stands (1) exceed stocking levels, (2) are expected to experience only minor losses to mortality, and (3) are expressing tree dominance Precommercially thin before trees are 15 feet tall or 15 years old, whichever comes first, and preferably before they are 10 feet tall or 10 years old |
| Water and Soils | | |
| 86 - Soil Support Services | Protect soils subject to high surface runoff or having potential for unacceptable surface or mass movement because of steep or unstable slopes | Maintain at least 70 percent ground cover on slopes lying downhill from areas of high surface runoff such as lava caps, rock outcrops, and shallow soils underlain by impervious bedrock |
| 87 - Soil Resource Maintenance and Improvement | Optimize soil productivity through the planning, implementation, and upkeep of projects | Initiate soil resource maintenance and improvement measures when less than 85 percent of the activity area exceeds acceptable soil condition standards |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Minerals and Geology | | |
| 88 - Minerals Management - Locatables | Meet minerals needs consistent with intensive high-site even-aged timber management | Limit tree removal to the minimum necessary to support claim development |
| | Coordinate access with existing or planned access roads | Design mitigation or restoration measures to restore timber productivity Remove facilities no longer needed for minerals purposes |
| 89 - Minerals Management - Leasables | Meet minerals needs consistent with intensive high-site even-aged timber management | Limit tree removal to the minimum necessary to support lease development |
| | Coordinate access with existing or planned access roads | Design mitigation or restoration measure to restore productivity Remove facilities no longer needed for minerals purposes |
| 90 - Minerals Management - Minerals Materials | Minimize impacts on intensive even-aged timber management | Design specific and strategically located regional sites for stockpiling and disposal sites Obtain additional road material from road widening and realignment projects Attempt to develop timber road surfacing materials on intermingled low timber sites |
| 91 - Geologic Inventory and Evaluation | Protect all slopes from unacceptable surface or mass movement | Modify harvest practices and road facility developments to maintain vegetative stabilization of the soil where standard even-aged management practices would result in excessive soil loss due to slope |
| Lands | | |
| 96 - Special Use Management - Nonrecreation | Issue Special Use Permits that are generally compatible with intensive even-aged timber management | Give priority to those types of Special Use Permits that will facilitate timber and minerals management activities Avoid shrinking the producing timber land base unless no alternative to the Special Use Permit is practical |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 98 - Power Related Licenses and Permits | Coordinate power projects and the moderate visual constraint | Minimize impacts on Forest resources and the transportation system Mitigate for the loss of timber production<br><br>This management area, though mixed with other general forest types, is a window for transportation-utility corridors Where possible, rights-of-way should be shifted to low site timber lands |
| Facilities | | |
| 106 - Trail Construction and Reconstruction | Provide short-loop trails in this part of the General Forest Zone Provide the opportunity for the public to view and experience intensive even-aged forest management. | Make most short-loop trails approximately 2-5 miles, although the loop may tie into existing system trails Maintain at Level II<br><br>Allow foot, equestrian, and motorized travel Specifically identify equestrian use Such trails shall be approved and signed for horses |
| 108 - Transportation Management - Trails | Protect existing system trails and maintain them during timber management operations | Maintain trails now on the Forest Development Transportation System on their existing alignment during timber sale and silvicultural operations Return trail tread to its original condition and remove slash for 10 feet each side of the trail<br><br>Use Maintenance Level I timber sale roads (which parallel or obliterate system trails) as trails unless it is essential that such roads be kept open<br><br>Allow temporary interruptions to public use of the trails during timber sale and silvicultural operations Post signs to inform the public of the temporary closure Retain the desired visual quality objective along Sensitivity Level 1 trails |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use appropriate suppression strategies at a least cost effect to meet resource objectives |
| 112 - Activity Fuels | Minimize environmental impacts and resource losses caused by wildfire<br><br>Use of prescribed fire is acceptable to meet resource objective | Consider all fuel treatment methods in conjunction with the use of fire mechanical, chemical, and manual Select on the basis of costs, outputs, and environmental effects<br><br>Treat activity fuels to a level and frequency that will sustain timber outputs identified in the Forest Plan Treatment objectives shall be those specified in stand management prescriptions for the area being treated<br><br>Consider treatment standards for both existing conditions and the predicted effects of future management activities surrounding the project area |
| 114 - Natural Fuels Management | Use of prescribed fire is acceptable to meet resource objectives | Consider all fuel treatments in conjunction with the use of fire mechanical, chemical, or manual Select on the basis of costs, outputs, and environmental effects<br><br>Treat natural fuels to a level and frequency that will permit attainment of the outputs identified in the Forest Plan Treatment project objectives shall be those specified in stand management prescriptions for the area being treated<br><br>Treatment standards for natural fuels will consider both existing conditions and the predicted effect of future management activities in the area surrounding the project area |

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## MANAGEMENT AREA NUMBER 25

### UNEVEN-AGED TIMBER

**Management Emphasis**

Apply an uneven-aged system of timber management where individual or small groups of trees are removed Emphasize management in red fir stands to increase water yields and to prolong snow melt period Maintain a high level of water and visual quality Provide opportunities for wildlife enhancement, grazing, minerals exploration and development, and dispersed recreation

**Description**

Management Area Number 25 contains 25,401 acres of high and low site timber lands that are capable, available, and suitable (CAS) for scheduled uneven-aged harvest Sites are generally capable of producing greater than 20 cubic feet per acre Uneven-aged timber management is incorporated into the plan to obtain an even flow of timber outputs. This system retains wildlife habitat in a condition that favors some late successional stage species

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| **Recreation** | | |
| 4 - Recreation Opportunity Spectrum-Semiprimitve Motorized | Provide for moderate evidence of sights and sounds of man in areas surrounding trails inside Management Area Number 25 | Manage to an ROS Class of Semi-primitive Motorized in the vicinity of trails |
| 5 - Recreation Opportunity Spectrum - Roaded Natural | Provide for moderate evidence of the sights and sounds of man | Manage to an ROS Class of Roaded Natural This is the desired level |
| 6 - Recreation Opportunity Spectrum - Rural | | Manage to an ROS Class of Rural This is a minimum acceptable level |
| 13 - Visual Resource Inventory and Planning | Provide project level data to aid in meeting VQO's | Mitigate visual loss resulting from approved major projects such as highway widening or realignment, transmission lines, mining operations, dams, reservoirs, conduits, penstocks, etc. Coordinate closely with proponents Start mitigation during the planning and design stage |
| 15 - Visual Quality Objective - Retention | Maintain the visual character of Retention for the pleasure of the viewing public | Manage to a VQO of Retention This is the desired level<br><br>Practices or projects that will result in Partial Retention are not acceptable |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 16 - Visual Quality Objective - Partial Retention | Temporarily maintain the visual character of Partial Retention | Manage to a VQO of Partial Retention on those portions of this Management Area that do not currently meet Retention. This is an acceptable level until opportunity exists to upgrade to Retention |
| 19 - Visual Resource Improvement | Mitigate or restore visual quality reductions | Allow a short-term reduction to Partial Petention, when absolutely necessary, on approved major nontimber projects that conflict with the Retention objective Required detailed grading and revegetation plans from project proponents that return the impacted areas to Retention within a reasonable time |
| 23 - Installation or Construction of Interpretive Services not on Interpretive Service Sites | Provide information and interpretive material to interpret resources and activities | Prepare wayside exhibits, interpretive trails, and publications for visitor use that interpret uneven-aged management and its benefits |
| 25 - Dispersed Recreation Management | Provide for dispersed recreation activities that are consistent with a VQO of Retention | Designate sites or areas where public wood cutting will reduce fuel buildup, minimize visual impacts, and lower the cost of disposal |
| Fish and Wildlife | | |
| 40 - Wetlands Habitat Improvement and Maintenance | Improve or maintain habitat for wetland species | Increase targeted wetland species through habitat management |
| 43 - Habitat Improvement - Vegetation Enhancement | Enhance productivity of forage and cover plants for wildlife. | Design projects to enhance habitat capability for Management Indicator Species<br><br>Encourage mast and browse production to the extent that timber productivity is not significantly reduced |
| 47 - Structural Wildlife Habitat Improvement and Maintenance | Improve the habitat capability of wildlife species through structural improvements | Design improvements to increase habitat capabilities for Management Indicator Species |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Range | | |
| 51 - Range Planning and Analysis | Make analyses to determine if increases in forage production are warranted Generally forage increases resulting from selection cutting are minor | Analyze these areas as part of grazing allotments under Allotment Management Plans |
| 52 - Range Management | Generally make no specific change in the management intensity of grazing Achieve proper use of grazing resources consistent with VQO's | Conduct allotment inspections, utilization checks and surveys |
| 53 - Range Improvement - Nonstructural | Make reseeding and fertilizing of specified roads and landings the primary activity to provide forage and watershed protection consistent with VQO's | Treat roads and landings that will be closed to vehicle use to rest them for the next timber entry |
| 54 - Range Improvement - Structural | Construct all forms of range improvements needed for the management of livestock on the allotment | Construct new improvements based on objectives in approved Allotment Management Plans. |
| 55 - Range Improvement - Maintenance | Maintain improvements to meet range management objectives and VQO's | Make maintenance the responsibility of the permittee. |
| Timber | | |
| 64 - Selection Cutting Method | Manage stands under an uneven-aged individual tree selection or small group opening pattern to produce scheduled yields of forest products. | Harvest trees individually or in small groups generally less then two acres Create a visual diversity distribution of tree sizes which results in regular, sustained yields of timber<br><br>Maintain a species composition that is most productive for the site, and that enhances and maintains vegetative diversity Leave some old, large-character trees for variability and interest<br><br>Thin merchantable and submerchantable trees to maintain growth and reduce mortality.<br><br>Remove dead, dying, and diseased tree in addition to removing trees to meet size and spacing objectives |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 66 - Special Cutting - Other | Meet VQO's over time by managing forest vegetation in a manner that provides as much wood fiber production as possible | Harvest trees singly or in groups to create or maintain desired visual-silvicultural stand structure and vigor Cutting will generally result in the creation of uneven-aged or irregular stands<br><br>Some of the types of harvest activities that occur are salvage, sanitation, thinning, small group selections, high risk cutting, favoring of certain species or sizes of trees, and overwood removal<br><br>Utilize special cutting to open identified vistas and views |
| 67 - Snowpack Cutting Methods | Improve water yields by applying occasional snowpack cutting in association with uneven-aged management | Integrate snowpack cutting with overall uneven-aged patterns Within these logical units, create harvest openings of approximately one-half to two acres that are oriented to the road systems |
| 77 - Release and Weeding | Eliminate competing vegetation and improve conifer stocking consistent with uneven-aged selection and visual quality<br><br>Perform timber stand improvement to maintain or improve stand vigor | Manage conifer stocking, and control competing vegetation Maintain conifer height and diameter growth commensurate with site, as per apropriate yield tables Use all available release and weeding methods<br><br>Leave damaged but sound trees as visual character trees in the Foreground view area |
| 78 - Precommercial Thinning | Eliminate competing vegetation and improve conifer stocking consistent with uneven-aged selection and visual quality | Remove competing vegetation by hand, mechanical, and chemical methods Thin submerchantable trees that have poor genetic characteristics, are damaged and diseased, or are surplus to desired stocking by tree class |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Water and Soils | | |
| 86 - Soil Support Services | Protect soils subject to high surface runoff or having potential for unacceptable surface or mass movement because of steep or unstable slopes | Maintain at least 70 percent ground cover on slopes lying downhill from areas of high surface runoff such as lava caps, rock outcrops, and shallow soils underlain by impervious bedrock |
| 87 - Soil Resource Maintenance and Improvement | Return degraded soil areas to approximately their original productivity level. | Initiate rehabilitation efforts when ground skidding equipment has adversely impacted more than 15 percent of area of harvest or when impacts of skid roads, landings, etc., are excessive |
| Minerals and Geology | | |
| 88 - Minerals Management - Locatables | Meet minerals needs while maintaining VQO's | Limit tree removal to a minimum Lease activities are generally not compatible with Retention |
| | Coordinate access with existing or planned access roads | Design mitigation or restoration measures to meet VQO's and restore timber productivity Remove facilities no longer needed for mining purposes |
| 89 - Minerals Management - Leasables | Meet minerals needs consistent with uneven-aged timber management | Limit tree removal to a minimum |
| | Coordinate access with existing or planned access roads | Design mitigation or restoration measures to meet VQO's and restore timber productivity Remove facilities no longer needed for minerals purposes |
| 90 - Minerals Management - Mineral Materials | Minimize the visual impact of accessing and removing saleable minerals materials | Design specific and strategically located sites for stockpiling and disposal. Obtain additional material from road widening and realignment projects<br><br>Attempt to obtain mineral materials from designated borrow sites outside of Management Area Number 25 |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 91 - Geologic Inventory and Evaluation | Protect slopes from unacceptable mass movement | Modify harvest practices and road facility developments to maintain vegetative stabilization of the soil where standard uneven-aged management practices would result in excessive soil loss due to slope stability |
| Lands | | |
| 96 - Special Use Management - Nonrecreation | Issue Special Use Permits that will meet VQO's | All Special Use Permits should facilitate timber, minerals, and other resource activities to the extent reasonably possible Issue such permits only when absolutely necessary |
| 98 - Power Related Licenses and Permits | Do not allow major power projects that are incompatible with VQO's | Minimize impacts in keeping with visual quality, water quality, and wildlife habitat objectives Mitigate the loss of timber production<br><br>This is an avoidance area for transportation-utility corridors unless mitigation retains VQO's |
| Facilities | | |
| 106 - Trail Construction and Reconstruction | Provide short-loop trails in this part of the General Forest Zone Provide the opportunity for the public to view and experience typically uneven-aged forest management | Make most short-loop trails approximately 2-5 miles, although the loop may tie into existing system trails Maintain at Level II<br><br>Allow foot, equestrian, and motorized travel Specifically identify equestrian use Such trails shall be approved and signed for horses |
| 108 - Transportation Management - Trails | Protect existing system trails and maintain them during timber management operations | Maintain trails now on the Forest Development Transportation System on their existing alignment during timber sale and silvicultural operations Return trail tread to its original condition and remove slash for 10 feet each side of the trail |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Use Maintenance Level I timber sale roads (which parallel or obliterate system trails) as trails unless it is essential that such roads be kept open<br><br>Allow temporary interruptions to public use of the trails during timber sale and silvicultural operations Post signs to inform the public of the temporary closure Retain the desired VQO along Sensitivity Level 1 trails |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this Management Area. | Use appropriate suppression strategies at a least cost effort to meet resource objectives |
| 112 - Activity Fuels | Minimize environmental impacts and resource losses caused by wildfire | Consider all fuel treatment methods in conjunction with the use of fire mechanical, chemical, and manual Select on the basis of costs, outputs, and environmental effects<br><br>Treat activity fuels to a level and frequency that will sustain timber outputs identified in the Forest Plan Treatment objectives shall be those specified in stand management prescriptions for the area being treated<br><br>Consider treatment standards for both existing conditions and the predicted effects of future management activities surrounding the project area |
| 114 - Natural Fuels Management | Minimize environmental impacts and resource losses caused by wildfire<br><br>Use of prescribed fire is acceptable to meet resource objectives. | Consider all fuel treatments in conjunction with the use of fire mechanical, chemical, or manual Select on the basis of costs, outputs, and environmental effects |

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## MANAGEMENT AREA NUMBER 26

### LOW SITE TIMBER

**Management Emphasis**

Apply management practices that maintain timber productivity typically without using more intensive forestry practices such as clearcutting and shelterwood cutting. All silvicultural systems are applicable, including even-aged and uneven-aged management Maintain a high level of visual and water quality Provide opportunities for moderate amounts of wildlife enhancement, grazing, minerals exploration and development, and dispersed recreation

**Description**

Management Area Number 26 contains 23,844 acres of low site timber lands that are capable, available, and suitable (CAS) for scheduled harvest Sites are generally poorer than Forest Survey Class 5 Low site timber lands have a potential yield of 20 to 50 cubic feet per acre per year Cutting is employed to perpetuate existing stands in an even-aged or uneven-aged condition. Where soils are sensitive and even-aged stand reestablishment is uneconomical, uneven-aged silviculture will be practiced

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| **Recreation** | | |
| 5 - Recreation Opportunity Spectrum-Roaded Natural | Provide for moderate evidence of the sights and sounds of man | Manage to an ROS Class of Roaded Natural |
| 15 - Visual Quality Objective - Retention | Make Visual Quality Objectives subordinate to timber management, however, the nature of low site harvesting permits the attainment of a high level of visual quality | Manage to a Visual Quality Objective of Retention where timber practices will result in that condition in most foreground areas and in all middleground areas (except where existing conditions are lower) This is the desired level |
| 16 - Visual Quality Objective - Partial Retention | Make Visual Quality Objectives subordinate to timber management, however, the nature of low site harvesting permits the attainment of Partial Retention or a higher condition | Manage to a Visual Quality Objective of Partial Retention when timber management practices will result in that condition This is an acceptable level |
| 25 - Dispersed Recreation Management | Manage for recreation activities that are consistent with low site timber management objectives | |
| **Fish and Wildlife** | | |
| 40 - Wetlands Habitat Improvement and Maintenance | Improve or maintain habitat for wetland species. | Increase targeted wetland species through habitat management |
| 43 - Habitat Improvement - Vegetation Enhancement | Enhance productivity of forage and cover plants for wildlife | Design projects to improve habitat capability for Management Indicator Species |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Encourage mast and browse production |
| 47 - Structural Wildlife Habitat Improvement and Maintenance | Improve the habitat capability of wildlife species through structural improvements | Follow Standards and Guidelines for structural wildlife improvements Design improvements to increase habitat capabilities for Management Indicator Species |
| Range | | |
| 51 - Range Planning and Analysis | Maintain moderate grazing within the capacity of the site | Analyze forage on 60 percent or less slopes and on sites that produce at least 50 pounds of usable forage per acre |
| 52 - Range Management | Administer grazing allotments to achieve proper use of forage and to provide for protection of other resources | Generally place salt within this zone on slopes less than 35 percent to encourage livestock to graze outside of stream, meadow, or riparian areas |
| 53 - Range Improvement - Nonstructural | Limit this practice to seeding and fertilizing on open areas not occupied by trees | Treat to 0-35 percent slopes on soils capable of producing grass |
| 54 - Range Improvement - Structural | Construct all forms of range improvements needed for the management of livestock on the allotment | Construct new improvements based on objectives in approved Allotment Management Plans |
| 55 - Range Improvement - Maintenance | Maintain improvements to meet range management objectives | Make maintenance the responsibility of the permittee |
| Timber | | |
| 58 - Clearcut Cutting Method | Clearcut poorly stocked and understocked stands when artificial regeneration success is assured | Give priority to stands that have the poorest growth in relation to their potential according to site and age, and stands in which successful artificial regeneration is obtainable Perform clearcutting when residual understory will not meet Regional stocking stand- ards after removal of overstory and treatment of fuels and when successful artificial regeneration is obtainable |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 59 - Shelterwood Cutting Method - Seed Step | Apply shelterwood cutting in stands to be regenerated where artificial regeneration would be difficult if the stand had been clearcut, and if natural or artificial regeneration is obtainable with the improved microclimate resulting from the shelterwood trees | Leave approximately 5 to 15 trees per acre Follow the Standards and Guidlines under Forest-wide Practice 56 for the size, shape, and dispersion of harvest units Stands to be harvested under seed step shelterwood must have sufficient basal area in dominant, wind-firm, genetically desirable trees to provide adequate seed production |
| 60 - Shelterwood Cutting Method - Removal Step | Apply to stands predicted to meet Regional stocking standards after harvest of overstory and treatment of fuels. | Meet Regional stocking standards after overstory removal Use artificial regeneration to meet standards, if necessary Where regeneration is established by seed step cutting, remove overstory as soon as Regional stocking standards can be met |
| 61 - Intermediate Cutting Method - Sanitation and Salvage | Harvest current mortality and additional mortality expected before next entry when economically and environmentally practical. | Remove trees with a high probability of dying within 10 years. Avoid damage to residual stand and reduction in growing stock<br><br>Accomplish prompt salvage of all economically accessible mortality except where protection of soil, wildlife, and residual timber values will preclude it. |
| 63 - Intermediate Cutting Method - Predominant Removal | Develop even-aged stands where scattered old growth trees presently exist over an immature, well-stocked understory | Remove scattered overstory trees from well-stocked stands that are mostly over 50 years of age Apply this cutting method when overstory volumes are light, generally lower than 10,000 board feet per acre |
| 68 - Low Site Stand Maintenance | Harvest timber in a way that will perpetuate stands without intensive forestry practices on sites with sensitive soils or where more intensive even-aged and uneven-aged systems are uneconomical. This is the most appropriate practice for low site timber stands. | Designate trees for cutting for the following purposes:<br><br>Remove dead, dying, and high risk trees.<br><br>Reduce stocking within small groups to maintain or improve growth.<br><br>Remove mature and over-mature trees to release younger replacement trees |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Uneven-aged stand characteristics generally will develop from this cutting Make decisions on trees to be cut recognizing that intervals between entries may be 20 years or longer in many stands<br><br>Leave a sufficient number of trees to provide a source of seed from desired species |
| 74 - Natural Stand Reestablishment | Manage stands to a low investment level in reforestation | Design harvest to encourage natural regeneration and perpetuate uneven-aged stands Use hand, mechanical, and chemical site preparation methods<br><br>On better sites interspersed with low sites, plant seedlings if the area is large enough to be managed efficiently |
| 77 - Release and Weeding | Manage stands to a low investment level in timber stand improvement | Do not practice timber stand improvement on low sites Where better sites are interspersed with low sites, apply limited treatment if the area is large enough to be managed efficiently Use hand, mechanical, and chemical methods |
| 78 - Precommercial Thinning | Manage stands to a low investment level in precommercial thinning | Thin when economically justifiable such as in stagnated stands where productivity would otherwise remain low to none Use hand, mechanical, and chemical methods for follow-up control of competing vegetation |
| Water and Soils | | |
| 86 - Soil Support Services | Protect soils subject to high surface runoff or having potential for unacceptable surface or mass movement because of steep or unstable slopes | Maintain at least 70 percent ground cover on slopes lying downhill from areas of high surface runoff such as lava caps, rock outcrops, and shallow soils underlain by imperrious bedrock |

# 26

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 87 - Soil Resource Maintenance and Improvement | Optimize soil productivity through the planning, implementation, and upkeep of projects | Initiate soil resource maintenance and improvement measures when less than 85 percent of the activity area exceeds acceptable soil condition standards |
| Minerals and Geology | | |
| 90 - Mineral Management - Minerals Materials | Give high priority to getting materials to surface roads from designated borrow sites in Management Area Number 26. | Strategically locate regional borrow and disposal sites in Management Area Number 26, if possible Obtain additional materials from road widening and realignment projects as an alternative |
| 91 - Geologic Inventory and Evaluation | Protect geological hazard areas from unacceptable surface or mass movement. | Modify harvest practices to maintain vegetative stabilization of the soil where low site timber practices would result in excessive soil loss because of slope (generally over 70 percent) or geologic instability. |
| Lands | | |
| 98 - Power Related Licenses and Permits | This area should be checked closely for erosion hazard due to the fragile quality of some low site soils | Evaluate project proposals to minimize the impacts on forest resources, especially those that are sensitive because of soil conditions Do not mitigate loss of timber production.<br><br>This area is a window for transportation-utility corridors. |
| Facilities | | |
| 106 - Trail Construction and Reconstruction | Provide short-loop trails in this part of the General Forest Zone Provide the opportunity for the public to view and experience typically uneven-aged forest management. | Make most short-loop trails approximately 2-5 miles, although the loop may tie into existing system trails Maintain at Level II<br><br>Allow foot, equestrian, and motorized travel. Specifically identify equestrian use. Such trails shall be approved and signed for horses. |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 108 - Transportation Management - Trails | Protect system trails and maintain them during timber management operations | Maintain trails now on the Forest Development Transportation System on their existing alignment during timber sale and silvicultural operations Return trail tread to its original condition and remove slash for 10 feet each side of the trail<br><br>Use Maintenance Level I timber sale roads (which parallel or obliterate system trails) as trails unless it is essential that such roads be kept open<br><br>Allow temporary interruptions to public use of the trails during timber sale and silvicultural operations Post signs to inform the public of the temporary closure Do not change the Visual Quality Objective of the area where system trails are within timber cut units. |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use appropriate suppression strategies at a least cost effort to meet resource objectives |
| 112 - Activity Fuels | Minimize environmental impacts and resource losses caused by wildfire<br><br>Use of prescribed fire is acceptable to meet resource objective | Consider all fuel treatment methods in conjunction with the use of fire mechanical, chemical, and manual Select on the basis of costs, outputs and environmental effects.<br><br>Treat natural fuels to a level and frequency that will permit attainment of the outputs identified in the Forest Plan Treatment project objectives shall be those specified in stand management prescriptions for the area being treated<br><br>Consider treatment standards for both existing conditions and the predicted effect of future management activities in the area surrounding the project area |

# 26

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 114 - Natural Fuels Management | Minimize environmental impacts and resource losses caused by wildfire<br><br>Use of prescribed fire is acceptable to meet resource objectives | Consider all fuel treatments in conjunction with the use of fire. mechanical, chemical, or manual Select on the basis of costs, outputs, and environmental effects<br><br>Treat natural fuels to a level and frequency that will permit attainment of the outputs identified in the Forest Plan Treatment project objectives shall be those specified in *stand management prescriptions for* the area being treated<br><br>Consider treatment standards for both existing conditions and the predicted effect of future management activities in the area surrounding the project area |

## MANAGEMENT AREA NUMBER 28

### MEADOW MANAGEMENT

**Management Emphasis**

Maintain and improve grass and herbaceous cover in meadows to protect and enhance wildlife habitat, protect water quality, and maintain grazing capacity

**Description**

Management Area Number 28 contains 2,937 acres of land, which supports a permanent cover of grass or forbs and is interspersed with timberlands and other vegetative types

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Recreation | | |
| 3 - Recreation Opportunity Spectrum - Semi-primitive Nonmotorized<br>4 - Recreation Opportunity Spectrum - Semi-primitive Motorized<br>5 - Recreation Opportunity Spectrum - Roaded Natural | Make the Recreation Opportunity Spectrum consistent with the surrounding Management Areas<br><br>Locate developed recreation facilities outside this Management Area | Maintain or improve the existing Recreation Opportunity Spectrum |
| 9 - Cultural Resources Inventory and Evaluation | Identify all significant cultural properties that may be affected by meadow management Conduct inventories to expand the data base on non-forested environments | Apply Forest-wide Standards and Guidelines |
| 15 - Visual Quality Objective - Retention<br>16 - Visual Quality Objective - Partial Retention<br>17 - Visual Quality Objective - Modification<br>18 - Visual Quality Objective - Maximum Modification | Accept a range of visual conditions Provide a natural appearing landscape consistent with meadow management projects | On a project basis or through visual resource management, improve meadows and their adjacent landscapes to create and enhance views and vistas of meadows near areas of concentrated public use |
| 19 - Visual Resource Improvements | Increase the viewing pleasure of the public | Provide special mitigation in foreground distance zones such as flush cut stumps, complete slash disposal, grading, seeding, etc , to meet the approved Visual Quality Objective |

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| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 23 - Installation or Construction of Interpretive Services not on Interpretive Services Sites | Provide information and education materials that interpret meadow management activities | Develop wayside exhibits, interpretive trails, publications, and signs that interpret the meadow management practices and benefits |
| 25 - Dispersed Recreation Management | Manage for low concentrations of public use | Favor recreation activities that require no facilities and emphasize short duration stays<br><br>Coordinate hunter access needs with meadow management projects |
| 28 - Closed Off-Road Vehicle Management | Prohibit motor vehicle use on meadows | Temporarily open portions of meadows to facilitate installation of improvements or fuelwood removal when ground is firm. |
| Fish and Wildlife | | |
| 40 - Wetlands Habitat Improvement and Maintenance | Improve or maintain habitat for wetland species. | Follow standards and guidelines for wetland improvements addressed in Forest Service Handbook 2609 11, Chapter 30 |
| 42 - Habitat Improvement - Old Growth | Provide habitat for wildlife species associated with late successional and old growth forests. These habitats may be associated with stands at the edge of meadows | Maintain old growth management areas in medium to high quality condition according to the Habitat Quality Criteria for old growth forests |
| 44 - Snag and Down Log Management | Provide intensive snag management in key areas for Management Indicator Species that are highly dependent upon snags around meadows | Provide, as a minimum, an average of four snags per acre greater than 24 inches diameter breast height within 500 yards from the meadow edge If existing snag density is marginal, recruit suitable snags and consider construction of artificial nests<br><br>Maintain as a minimum, a density of three downed logs per acre, 20 inches in diameter by 10 feet in length, in forest types at the edge of the meadow |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 46 - Meadow Vegetation Management | Provide cover and forage for wildlife species dependent on meadows and the adjacent forest edge Maintain the integrity of the meadow ecosystem. | Maintain a meadow edge of the following dimensions·<br><br>At least 100 feet from the perimeter of all meadows 1 0 acre or larger<br><br>25 to 75 feet from the perimeter of meadows 0 1 to 0 9 acres in size<br><br>Within this meadow edge, provide the following vegetative structure<br><br>Maintain at least 60 percent of capable, available, and suitable (CAS) land in timber 100 years old or older (minimum level)<br><br>Maintain uneven-aged timber up to 250 years old over 80 percent of the CAS land (maximum level)<br><br>Maintain a canopy closure of 60 to 80 percent Keep meadow vegetation in medium to high quality condition according to the Habitat Quality Criteria (less than 15 percent bare ground or pavement in the meadows)<br><br>Avoid constructing new roads within the meadow perimeter and consider closing or eliminating existing roads |
| 47 - Structural Wildlife Habitat - Improvement and Maintenance | Improve the habitat capability for wildlife species through structural improvement | Use standards and guidelines for structural improvements for wildlife found in Forest Service Handbook 2609 11 Design improvements to increase habitat capabilities that support fish and wildlife |

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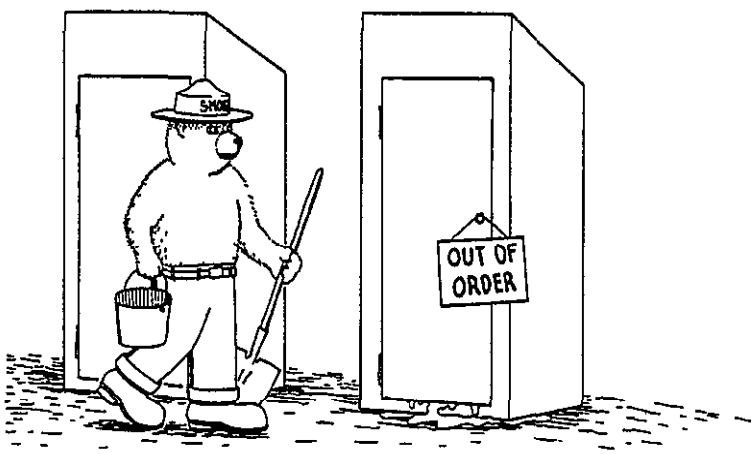
| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Range | | |
| 51 - Range Planning and Analysis | Provide analysis and planning to maintain forage availability | Prepare project-specific environmental analyses using interdisciplinary team involvement and cooperation with the grazing permittee to develop objectives for the Allotment Management Plan Include a benefit-cost analysis<br><br>Use the stocking rate of one AUM per acre, or the actual if less, to provide extra protection of watershed and wildlife values. |
| 52 - Range Management | Develop and implement grazing systems and management techniques to achieve best use of the meadow grazing resource consistent with soil protection, water quality, and wildlife and fisheries habitat needs | Make these meadows key areas for range analysis, annual readiness inspections, periodic utilization measurements, and condition and trend studies. Prohibit salting in meadows. |
| 53 - Range Improvement - Nonstructural | Use all treatment methods to obtain forage production | Conduct site-specific analyses on meadows for nonstructural improvement opportunities (meadows are generally 0-15 slope) |
| 54 - Range Improvement - Structural | Use fencing as the primary range structure to manage the season of use, numbers of livestock, and percent of forage utilized by grazing livestock Locate other range structures or facilities outside the meadow area | Make a benefit-cost analysis for proposed structures. Perform construction by the grazing permittee and Forest Service under cooperative agreement |
| 55 - Range Improvement - Maintenance | Maintain improvements so that facilities continue to serve their purpose and meet range management objectives | Maintain improvements by the permittee |
| Timber | | |
| 66 - Special Cutting - Other | Remove timber that is encroaching on meadows | To the extent possible, harvest merchantable timber to Regional utilization standards |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 69 - Ground Based Harvest System | Employ special techniques to prevent damage to meadow soils and vegetation | Use seasonal restrictions, end-lining, and limitations on size and type of log skidders |
| Water and Soils | | |
| 81 - Water Yield Improvement | Practice water yield improvement where opportunities exist | Replace deep rooted species such as trees and brush with shallow rooted species such as grass and forbs<br><br>Maintain active control over timing and intensity of grazing. |
| 82 - Runoff Regulation | Practice runoff regulation where opportunities exist | Optimize water yield improvement by utilizing vegetative and structural measures that retard runoff and encourage infiltration into the aquifer. |
| 83 - Watershed Maintenance and Rehabilitation | Stabilize, revegetate, and protect streambanks and channels in meadow areas as the key objective of intensive meadow management | Consider a disturbed area recovered when the ground cover density exceeds 70 percent, no active rill or gully erosion is present, and streambanks are stable |
| Lands | | |
| 96 - Special Use Management - Nonrecreation | Keep meadows free of Special Use Permit encumbrances | Give priority to those types of Special Use Permits that will facilitate the management of meadows Issue non-related Special Use Permits only when absolutely necessary |
| 98 - Power Related Licenses and Permits | Give priority to retention of these meadows in a natural condition | Require power developers to avoid meadows by routing around them when the direct affects would disturb the natural environment<br><br>Meadows are avoidance areas for physical placement of facilities related to transportation-utility corridors |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Facilities | | |
| 104 - Transportation Management - Roads Closed | Close roads to and across meadows | Temporarily open roads for administrative purposes, under Special Use Permit, or to construct and maintain improvements when conditions permit. |
| Protection | | |
| 111- Fire Management | Determine allowable fire size objectives for this management area. | Use appropriate suppression strategies at a least cost effort to meet resource objectives |
| 112- Activity Fuels Management | Minimize environmental impacts and resource losses caused by wildfire.<br><br>Use of prescribed fire is acceptable to meet resource objectives | Consider all fuel treatment methods in conjunction with the use of fire mechanical, chemical, and manual<br><br>Treat activity fuels to a level and frequency that will sustain resource outputs identified in the this Plan |
| 114 - Natural Fuels Management | Minimize environmental impacts and resource losses caused by wildfire<br><br>Use of prescribed fire is acceptable to meet resource objectives | Consider all fuel treatment methods in conjunction with the use of fire mechanical, chemical, and manual<br><br>Treat natural fuels to a level and frequency that will permit attainment of the outputs identified in this Plan<br><br>Let soil type and condition govern actual fuel treatment methods. |



## MANAGEMENT AREA NUMBER 29

### MAINTENANCE

**Management Emphasis**

Limit management activities Keep lands in their existing condition except for protection and minor, non-intensive maintenance activities Retain healthy conditions in forested areas by salvaging dead and dying trees Provide for wildlife habitat needs, dispersed recreation, and livestock grazing, and minerals exploration and development

**Description**

Management Area Number 29 contains 27,817 acres This is comprised of forested lands whose growth is less than 20 cubic feet per acre per year Mortality losses are minimized by intermediate salvage cutting of dead and dying trees unless needed to protect soil, wildlife, or residual timber values Other acres in Management Area Number 29 include bodies of water, barren lands, and brush and grass lands not assigned to Meadow Management or Type Conversion Management Area Prescriptions.

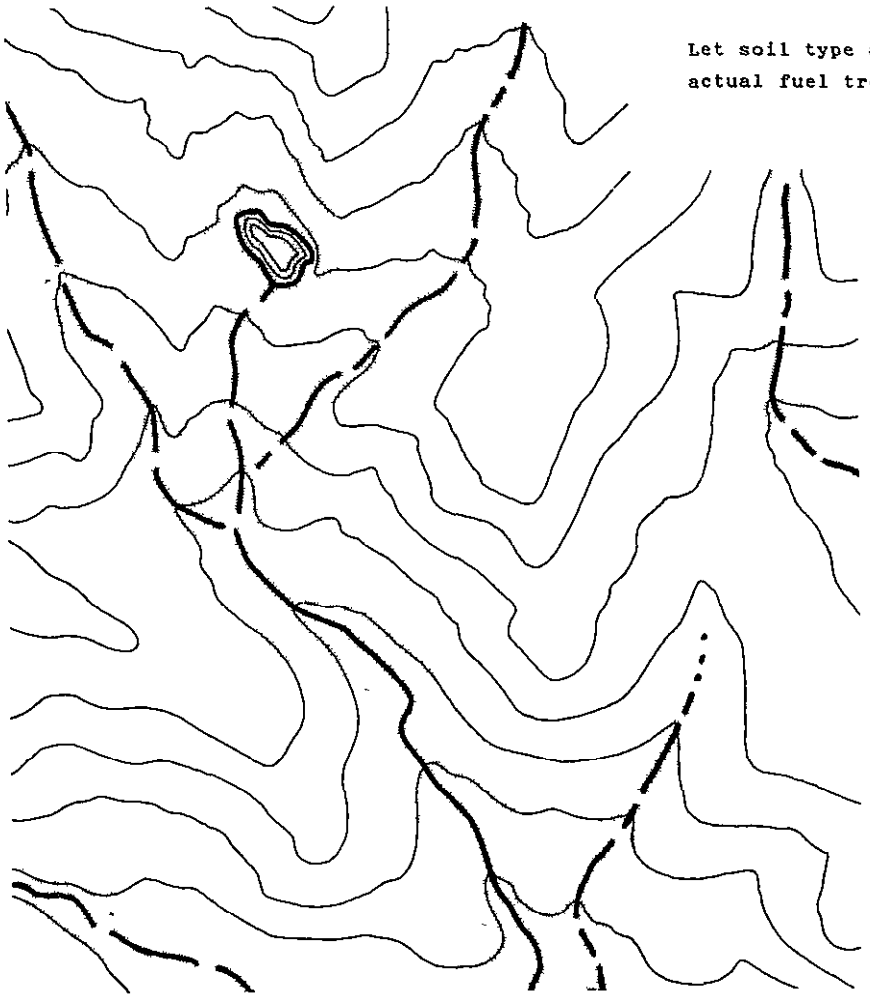
| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| **Recreation** | | |
| 5 - Recreation Opportunity Spectrum - Roaded Natural | Provide for moderate evidence of the sights and sounds of man | Manage to an ROS Class of Roaded Natural |
| 15 - Visual Quality Objective - Retention<br>16 - Visual Quality Objective - Partial Retention<br>17 - Visual Quality Objective - Modification<br>18 - Visual Quality Objective - Maximum Modification | Accept a range of visual conditions from Retention to Maximum Modification Conform to Forest-wide Standards and Guidelines Maintain a natural appearing landscape | Meet the Visual Quality Objective shown in the planning data base In the event of extensive salvage harvesting due to insect or disease epidemic, develop specific mitigation measures to retain or restore Retention and Partial Retention areas Include flush cut stumps, harvest equipment limitations, special felling patterns, selected location and dispersion of burn piles, etc Modification and Maximum Modification are consistent with Maintenance |
| 25 - Dispersed Recreation Management | Manage for a low concentration of recreation use | Favor activities that require no facilities and are of short length of stay |
| **Fish and Wildlife** | | |
| 47 - Wildlife Habitat Improvement and Maintenance | Improve the habitat capability of wildlife species through structural improvements | Design improvements to increase habitat capabilities for Management Indicator Species |

# 29

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Range | | |
| 51 - Range Planning and Analysis | Provide low investment maintenance of existing livestock grazing allotments. | Permit issuance and fee collection only |
| 51 - Range Management | Emphasize stewardship or extensive systems of grazing | Conduct minimal spot checks for forage readiness or utilization. |
| 54 - Range Improvement - Maintenance | Maintain existing improvements only | Make maintenance the responsibility of the permittee. |
| Timber | | |
| 61 - Intermediate Cutting Method - Sanitation and Salvage | Minimize losses due to mortality | Harvest dead and dying trees and trees with a high probability of dying within 10 years except where needed to protect soil, wildlife, or residual timber values |
| 69 - Ground Based Harvest System<br>70 - Cable Harvest System<br>71 - Skyline Harvest System<br>72 - Special Harvest System | Apply the most efficient harvest system, considering yarding costs, environmental effects, and minimal road construction. | Use systems that normally can operate from existing roads |
| Water and Soils | | |
| 86 - Soil Support Services | Protect soils with a thin mantle and subject to high surface runoff. | Maintain at least 70 percent effective ground cover on slopes lyin downhill from areas of high surface runoff such as lava caps, rock outcrops, and shallow soils underlain by impervious bedrock<br><br>Require one-end suspension of logs during yarding. |
| Minerals and Geology | | |
| 90 - Minerals Management - Minerals Materials | Give high priority to getting materials to surface roads from designated borrow sites in Management Area Number 29 | Strategically locate regional borrow and disposal sites on slopes of 15 or less, where adequately screened from view and away from stream cours and critical wildlife habitat. |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Lands | | |
| 98 - Power Related Licenses and Permits | Coordinate power projects and related facilities with other maintenance activities taking place in this Management Area Number 29. | Minimize impacts on resources.<br><br>This area is a window for transportation-utility corridors |
| Facilities | | |
| 106 - Trail Construction and Reconstruction | Provide short-loop trails in this part of the General Forest Zone Provide the opportunity for the public to view and experience essentially unmanaged forest conditions. | Make most short-loop trails approximately 2-5 miles, although the loop may tie into existing system trails Maintain at Level II<br><br>Allow foot, equestrian, and motorized travel Specifically identify equestrian use Such trails shall be approved and signed for horses |
| 108 - Transportation Management - Trails | Protect and maintain system trails during maintenance activities | Maintain trail grades and alignment to standards during sanitation-salvage timber sale operations. Return trail tread to its original condition and remove slash for 10 feet each side of trail<br><br>Allow temporary interruptions to public use of the trails during maintenance harvesting Post appropriate signs to inform the public of the temporary closure |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use appropriate suppression strategies at a least cost effort to meet resource objectives.<br><br>Keep area burned below 200 acres per decade at fire intensity levels 5 and 6 |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 112 - Activity Fuels Management | Minimize environmental impacts and resource losses caused by wildfire. | Consider all fuel treatment methods. mechanical, chemical, and manual<br><br>Treat activity fuels to a level and frequency that will sustain timber outputs identified in the Forest Plan<br><br>Let soil type and condition govern actual fuel treatment methods. |
| 114 - Natural Fuels Management | Minimum environmental impacts and resource losses caused by wildfire.<br><br>Use of prescribed fire is acceptable to meet resource objectives | Consider all fuel treatment methods mechanical, chemical, or manual<br><br>Treat natural fuels to a level and frequency that will permit attainment of the outputs identified in the Forest Plan<br><br>Let soil type and condition govern actual fuel treatment methods |



MANAGEMENT AREA NUMBER 30

STREAMSIDE MANAGEMENT ZONE

Emphasis

Maintain high water quality in lakes and streams by establishing a natural filter zone between the water and soil disturbing activities Preserve aquatic values Provide for wildlife, grazing, minerals exploration and development, timber, and recreation use that is compatible with high water quality Give special attention to the management of lands adjacent to surface waters on the Forest, including development and maintenance of fisherman access trails

Description

Management Area Number 30 contains 27,200 acres of high site timber land that are capable, available, and suitable (CAS) for scheduled harvest The Streamside Management Zone (SMZ) helps protect water quality and the riparian and aquatic habitats SMZ's are discrete areas adjacent to streams or lakes that are managed primarily to meet water quality objectives and incidentally meet other specific objectives SMZ's vary in width relative to the class of the stream and its stability

The Streamside Management Zone concept is one of the Best Management Practices (BMP) prescribed to meet water quality objectives established by Public Law 92-500, Section 208, California State Water Resources Control Board (SWRCB) Under a broad interpretation, flood plains that fall within the intent of Executive Order 11988 are covered by the Streamside Management Zone

The Standards and Guidelines for the size and extent of the Streamside Management Zone are defined in Practice 83 of Management Area Number 30 Riparian areas are always included within the Streamside Management Zone As a minimum, riparian areas are defined to be (1) areas 100-feet horizontal distance from the edge of standing bodies of water, (2) areas a horizontal distance of 100 feet on both sides of perennial stream channels, and (3) all wetlands

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Recreation | | |
| 2 - Recreation Opportunity Spectrum - Primitive<br>3 - Recreation Opportunity Spectrum - Semiprimitive Nonmotorized<br>4 - Recreation Opportunity Spectrum - Semiprimitive Motorized<br>5 - Recreation Opportunity Spectrum - Roaded Natural<br>6 - Recreation Opportunity Spectrum - Rural | Incorporate a full range of Recreation Opportunity Spectrum classes | Retain the existing ROS Class that the Streamside Management Zone passes through |

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| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 15 - Visual Quality Objective - Retention | Provide a natural appearing stream-side setting. | Make Retention the desired Visual Quality Objective along Sensitivity Level 1 (Retention) streams |
| 16 - Visual Quality Objective - Partial Retention | Provide a natural appearing stream-side zone | Make Partial Retention the minimum Visual Quality Objective along Sensitivity Level 2 (Partial Retention) streams Partial Retention shall also be acceptable where minor administrative or recreation improvements are found along an otherwise Sensitivity Level 1 stream |
| 17 - Visual Quality Objective - Modification | Provide a natural appearing stream-side zone | Modification is an acceptable Visual Quality Objective |
| 19 - Visual Resource Improvement | Provide a natural appearing stream-side zone in Sensitivity Level 1 and 2 areas | Mitigate impacts thath lower the inventoried Visual Quality Objective. |
| 20 - Developed Recreation and Visitor Information Services Site Construction and Rehabilitation | Develop sites only where water quality is not impaired and riparian dependent resources are not irreversibly impacted Apply to Forest Service operated facilities and those under Special Use Permit or Concession. | With the exception of bridges, docks, boat ramps, and temporary structures such as picnic tables and fire rings, place all structures (particularly rest rooms) at least 100 feet from lakes and streams or above the 100 year flood plain, whichever is greater |
| 24 - Developed Recreation | Operate sites in a manner that is compatible with water quality objectives | Give preference to public service facilities over individual or preferential type private sector uses |
| 25 - Dispersed Recreation Management | Permit dispersed recreation to the extent that activities are compatible with maintaining water quality | Manage and meet Standards and Guidelines as shown under Practice Number 83, Watershed Maintenance and Rehabilitation |
| 27 - Restricted Off-Road Vehicle Management | Confine ORV use to designated roads, trails, and crossings. | Confine use to the dry seasons on stabilized roads and trails Allow over-the-snow travel<br><br>Limit stream crossings to stable rock or gravel areas where stream bank damage will be minimal |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Locate stream crossings at right angles to the stream to prevent stream diversions |
| Fish And Wildlife | | |
| 36 - Stream Fisheries Habitat Improvement and Maintenance - Structural Improvements | Direct improvement and maintenance activities to enhance cold water (trout) stream fisheries | Use stream structural improvements to increase fisheries values where costs are commensurate with benefits Structures shall not decrease the existing stability of the stream channel |
| 37 - Stream Fisheries Habitat Improvement and Maintenance - Nonstructural Improvements | Direct improvement and maintenance activities to enhance cold water (trout) stream fisheries | Follow Standards and Guidelines for stream improvements in Chapter 10, Forest Service Handbook 2609 11 |
| 38 - Lake Fisheries Habitat Improvement and Maintenance - Structural | Direct improvement and maintenance activities to enhance warm water and cold water lake fisheries | Design structures to increase natural reproduction of targeted |
| 39 - Lake Fisheries Habitat Improvement and Maintenance - Nonstructural | Direct improvement and maintenance activities to enhance warm water and cold water lake fisheries | Coordinate with the California State Department of Fish and Game |
| 40 - Wetlands Habitat Improvement and Maintenance | Improve or maintain habitat for wetland species | Increase targeted wetland species through habitat management |
| 42 - Habitat Improvement - Old Growth | Provide habitat for late successional wildlife species associated with old growth forests | Maintain selected old growth stands in high quality condition The size of stands (total area inside and outside SMZ) will be greater than 100 acres where possible |
| 43 - Habitat Improvement - Vegetation Enhancement | Provide medium to high quality cover and forage for fish and wildlife species associated with riparian habitats | Maintain an average riparian corridor width of 100 feet on both sides of perennial streams<br><br>Retain the following vegetative structure within the riparian strip unless project interdisciplinary teams determine otherwise: |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | Uneven-aged timber predominantly 100 to 250 years old, with maximum opening two acres in size or 3 chains along the streambank<br><br>Canopy closure of 40 to 70 percent<br><br>One or more species of riparian hardwoods, in young and mature age classes, over 20 percent of the area by crown cover<br><br>At least 25 percent of the total ground cover in shrubs, forbs, grasses, and small trees |
| 44 - Snag and Down Log Management | Improve habitat for featured species by providing an intensive level of snag and down log management. | Leave four or more snags per acre greater than 24-inch diameter breast height when available stems ar present in the stands<br><br>As a minimum, maintain an average density of three downed logs per acre 20 inches in diameter by 10 feet in length, in all forest types<br><br>This is equivalent to one log per acre, 32 feet in length, or 2 logs pe acre, 16 feet in length, or any combination thereof. |
| 47 - Structural Wildlife Habitat and Maintenance | Improve the habitat capability. | Design improvements to increase habitat capabilities for Management Indicator Species |
| Range | | |
| 51 - Range Planning and Analysis | Continue grazing but establish specific direction to meet water quality standards and fish and wildlife needs These areas are key but sensitive forage producing areas within grazing allotments | Coordinate grazing use on sensitive sites to meet water quality and fish and wildlife objectives |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 52 - Range Management | Manage these key forage areas to achieve proper range use and provide for water quality and fish and wildlife needs Protect riparian dependent resources from grazing damage | Define proper use as 50 percent of annual forage production Do not permit salting in these zones Readiness and utilization studies are essential. Incorporate condition and trend surveys into proper management. |
| 53 - Range Improvement - Nonstructural | Include small scale removal of competing meadow vegetation such as lodgepole pine, poisonous plants, and brushy hardwoods Seed, with native species where possible, mulch and apply light fertilization | Treat areas of less than 1 acre (large scale intensive management activities are covered under Management Area 28, Meadow Management) Perform activities by hand |
| 54 - Range Improvement - Structural | Use fencing as specified in Allotment Management Plans for the management, control or exclusion of livestock Locate other structural improvements outside of this zone | Construct fences by cooperative agreement with the grazing permittee |
| 55 - Range Improvement - Maintenance | Maintain existing fences | Make maintenance the responsibility of the permittee as part of the Allotment Management Plan unless needed to specifically exclude livestock Otherwise make maintenance the responsibility of the Forest Service to protect other resource investments |
| Timber | | |
| 65 - Special Cutting - Streamside Management Zone | Harvest merchantable timber with the objective of maintaining the stream-protective characteristics of the vegetation while utilizing the timber productivity of the site Manage to meet some of the mature timber habitat needs of wildlife Protect riparian vegetation for dependent wildlife species | Remove trees singly or in groups to improve stand vigor Provide shade for the stream bed and retain ground cover in order to minimize deposition of sediment into the stream Do not harvest trees if it will damage riparian vegetation within the Streamside Management Zone, or trees that contribute to stream bank or Streamside Management Zone stability. Occasionally regeneration harvesting may be appropriate in poorly stocked stands Consult an interdisciplinary team or appropriate specialists when these areas exceed 2 acres in size or extend more than 3 chains along the streambank |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 69 - Ground Based Harvest System<br>70 - Cable Harvest System<br>71 - Skyline Harvest System<br>72 - Special Harvest System | Utilize harvest systems that protect residual trees, retain sufficient ground cover and protect streamside values | Unless planned for by an interdisciplinary team during the environmental analysis process, exclude ground based skidding equipment from the Streamside Management Zone However, if it can be demonstrated that the residual vegetation and ground cover will not be adversely affected, occasional access may be permitted on a site specific basis If the ground cover or integrity of the Streamside Management Zone is impaired by such entry, mitigation will be required |
| 73 - Artificial Stand Reestablishment | Maintain stocking of coniferous species on all suitable timber land. | Encourage natural regeneration, but where needed to maintain productivity, practice artificial regeneration and control of competing vegetation Limited plant and site specific hand applications of pesticides may be proposed within the SMZ, however, the State Water Quality Control Board must be consulted regarding all pesticide projects within 100 feet of flowing streams If mutually deemed appropriate, a monitoring program will be initiated |
| 74 - Natural Stand Reestablishment | Maintain stocking of coniferous species on all suitable timber land. | Attempt to get adequate stocking through natural seedfall Perform supplemental planting if seedfall is not sufficient. Limited plant and site specific hand applications of pesticides may be proposed within the SMZ; however, the State Water Quality Control Board must be consulted regarding all pesticide projects within 100 feet of flowing streams. If mutually deemed appropriate, a monitoring program will be initiated |
| 77 - Release and Weeding | Perform timber stand improvement to maintain stand vigor | Manage conifer stocking and control competing vegetation. Maintain conifer height and diameter growth commensurate with site, as per appropriate yield tables Limited |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| | | plant and site specific hand applications of pesticides may be proposed within the SMZ, however, the State Water Quality Control Board must be consulted regarding all pesticide projects within 100 feet of flowing water If mutually deemed appropriate, a monitoring program will be initiated. |
| 78 - Precommercial Thinning | Perform thinnings to achieve adequate spacing of precommercial size stands | Remove excess stocking by hand or mechanical methods within the SMZ Limit site specific chemical thinning within the SMZ, but the State Water Quality Control Board must be consulted regarding all chemical use within 100 feet of flowing streams |
| Water and Soils | | |
| 81 - Water Yield Improvement | Assure that activities for water yield improvement such as timber harvesting and type conversions are compatible with water quality and fish and wildlife objectives | Meet Standards and Guidelines as shown in Practices 42, 43, 44, and 83 of Management Area Number 30 |
| 82 - Runoff Regulation | Assure that activities for runoff regulation are compatible with water quality objectives | Meet Standards and Guidelines as shown under Practice 83 |
| 83 - Watershed Maintenance and Rehabilitation | Maintain or restore stable watershed conditions by limiting the area and degree of soil disturbance and vegetation removal | Manage Streamside Management Zones to protect water sources from the impacts of upstream and upslope soil vegetation disturbances<br><br>Establish and maintain Streamside Management Zones for all Class I, II, and III stream channels and lake shores The SMZ width varies with stream class and watershed stability, as follows |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|

Guidelines for Establishing SMZ's 1/

| Stream Class | Stability 2/ Soil/Slope | Recommended Width From Streambank Perennial | Intermittent |
|---|---|---|---|
| I | Stable | 200-300 | 150-250 |
| | Unstable | 300-600+ | 250-500+ |
| II | Stable | 100-200 | 100-150+ |
| | Unstable | 200-400+ | 150-300+ |
| III | Stable | 100-150 | 100-100+ |
| | Unstable | 100-250+ | 100-200+ |

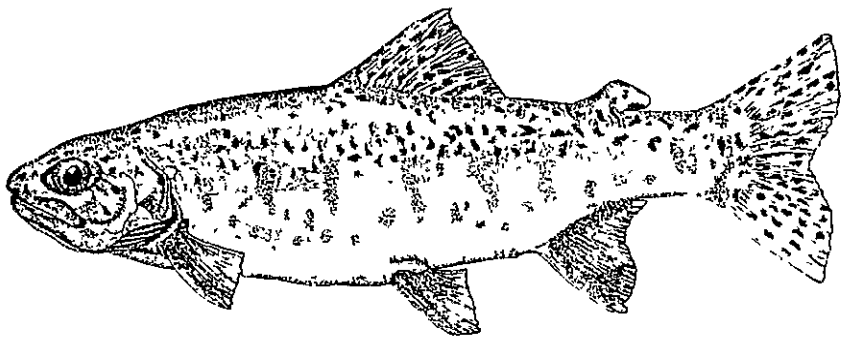
1/ SMZ Width should be established on the ground using the table above as a guide and should be fitted to the topography of the area In the application of these guidelines it is expected that actual widths will approximate those in the table The horizontal distances shown are for one side of the stream only. See Class IV guidelines under Forest-wide Standards and Guidelines

2/ Within the SMZ ground cover density shall not be reduced below 60 percent for stable watershed conditions and 70 percent for all other conditions

| | | |
|---|---|---|
| | | Limit the season or entirely prohibit gold dredging where this use degrade water quality and is damaging to the fishery |
| 85 - Water Rights Use/ Management | Secure water rights for the permament water holes or direct draft water sources Plan water hole development on a wateshed basis. | Maintain complete records and update every year |
| Minerals and Geology | | |
| 91 - Geologic Inventory and Evaluation | Protect geological hazard areas from unacceptable surface or mass movement | Modify harvest and road facility development to maintain stabilization of the soil where standard practices would result in excessive soil loss because of geologic instability (generally slopes over 70 percent). |

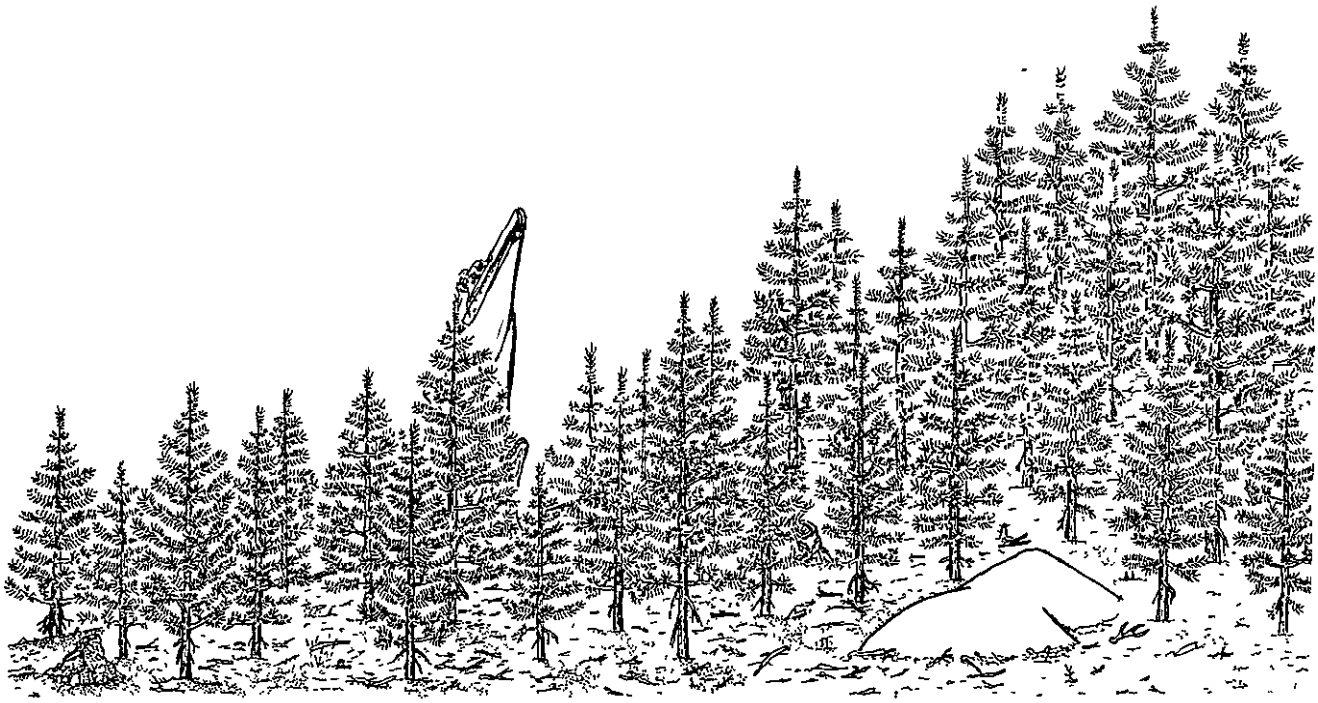
| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| Lands | | |
| 98 - Power Related Licenses and Permits | Accommodate power project proposals The Streamside Management Zone, by definition, is the Forest area most heavily impacted by power projects | Assess all project proposals to reduce or minimize both direct and indirect impacts.<br><br>Class I streams will have the highest potential for development Class II and III are next Class IV streams have only limited potential<br><br>Coordinate with the California State Department of Fish and Game and Water Quality Control Board regarding instream flows related to fisheries, disturbance of riparian vegetation, water quality maintenance, and recreation needs. This area is a window, with mitigation, for transportation-utility corridors |
| Facilities | | |
| 100 - Timber Access Road Development - Construction and Reconstruction<br>101 - General Resource Access Road Development - Construction and Reconstruction | Design road construction and reconstruction to be compatible with water quality objectives | Where practicable, locate roads at right angles to the Streamside Management Zone Provide full stabilization Design to pass the 50-year flood without significant damage If significant damage to the ripariain and aquatic habitat would occur from failure of the road crossing, design a route of failure that will do the least damage (stabilized overflow dip, ripraped fill slope, etc.). |
| 106 - Trail Construction and Reconstruction | Design trail construction and reconstruction to be compatible with water quality objectives while providing fisherman access to streams | Locate destination trails at right angles to the SMZ. Consider building parallel trails for fisherman access to remedy bank erosion problems in areas of concentrated public use |
| Protection | | |
| 111 - Fire Management | Determine allowable fire size objectives for this management area | Use appropriate suppression strategies at a least cost effort to meet resource objective |

| MANAGEMENT PRACTICE | GENERAL DIRECTION | STANDARDS/GUIDELINES |
|---|---|---|
| 112 - Activity Fuels Management | Minimize environmental impacts and resource losses caused by wildfire | Perform low intensity broadcast burning as the preferred fuel treatment method. If broadcast burning is not feasible, use jackpot piling and burning, chipping, crushing, or removal as long as 60-70 percent ground cover is present prior to the normal runoff period.<br><br>If ground cover is reduced below 50 percent, use seeding, mulching, and slashing to bring the ground cover up to the 60-70 percent level required to meet water quality objectives |
| 114 Natural Fuels Management | Minimize environmental impacts and resource losses caused by wildfire<br><br>Use of prescribed fire is acceptable to meet resource objectives. | Allow low intensity broadcast burning for fuel treatment if 60-70 percent ground cover is maintained<br><br>If natural fuel treatment reduces ground cover below 50 percent, use seeding, mulching, and slashing to bring ground cover up to 60-70 percent |



Chapter V

# Monitoring and Evaluation Requirements



# V. Monitoring and Evaluation Requirements

## A. Purpose

The purpose and need for monitoring and evaluating implementation of the Forest Plan is to provide a basis for periodic determination and assessment of the effects of management activities on the forest.

The Forest's objectives of monitoring the plan are to determine that:

* Planned output levels are being achieved.

* Environmental quality standards are being achieved.

* Programmed practices and activities are being implemented.

* Management direction is being followed.

* Management direction standards and guidelines are achieving the desired management results.

* Resource information used in projecting outputs and impacts of management is accurate.

* Budget levels are consistent with the management intensity projected.

* Estimated costs used in the Forest Plan preparation are accurate.

* New information is needed for Plan revision.

## B. Monitoring System

The results of monitoring and evaluation are reported on a fiscal year basis within 60 days after the close of each fiscal year of the plan. The report will summarize accomplishments for the previous fiscal year.

The main data sources for monitoring the Plan are as follows:

1. Management Reviews

    a. General Management Review

    b. Program Review

    c. Activity Review

2. Other Ongoing Inventories and Monitoring Programs

These programs will include, but are not limited to, soil productivity monitoring, surface erosion monitoring, water quality monitoring, forest inventory plots for timber, range trend inventories, and wildlife species monitoring.

3. Environmental Analysis

During the data acquisition phase of an environmental report, assessment of project area data validity will be completed. As necessary, data elements will be updated to reflect current resource conditions.

4. Management Attainment Reports

These reports are filed quarterly by the Districts and various branches of the Supervisor's Office. Targets are established at the beginning of the year, and accomplishments are recorded in percent per quarter. These reports are then forwarded to the Regional Office.

## C. Evaluation

Resource management practices, activities, and effects to be monitored are summarized and displayed in Table V-1. The reliability of the data, and frequency of monitoring are established for each monitoring activity, practice, or effect.

When monitoring results are reported, their significance will be evaluated by the Forest interdisciplinary team. Based on the evaluation, any need for further action is recommended to the Forest Supervisor. The recommendations can include:

* No action needed. Monitoring indicates goals, objectives, and standards are achieved.

* Refer recommended action to the appropriate line officer for deletion, modification, or revision of Management Area Prescriptions.

* Modify the management prescription as a Plan amendment.

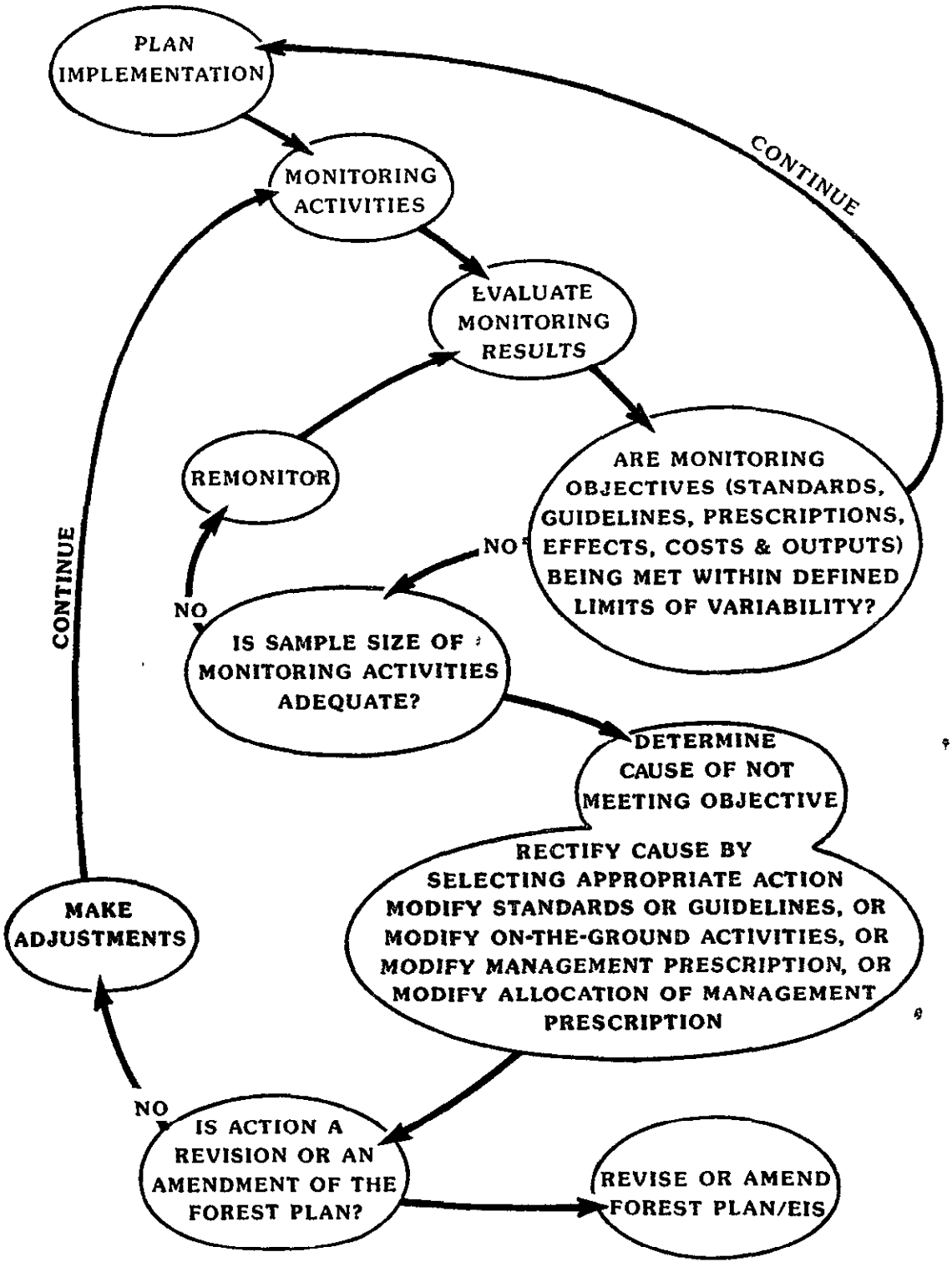
* Modify the allocation of a prescription as a Plan amendment.

* Revise the projected schedule of outputs.

* Initiate revision of the Plan.

Figure V-1, titled "Monitoring Process Flow Chart" graphically displays the monitoring process from evaluation of a specific activity, practice or effect through the review action, to determine whether a revision or amendment is necessary.

FIGURE V-1


PLAN IMPLEMENTATION
MONITORING ACTIVITIES
EVALUATE MONITORING RESULTS
ARE MONITORING OBJECTIVES (STANDARDS, GUIDELINES, PRESCRIPTIONS, EFFECTS, COSTS & OUTPUTS) BEING MET WITHIN DEFINED LIMITS OF VARIABILITY?
CONTINUE
NO
REMONITOR
NO
IS SAMPLE SIZE OF MONITORING ACTIVITIES ADEQUATE?
CONTINUE
DETERMINE CAUSE OF NOT MEETING OBJECTIVE
RECTIFY CAUSE BY SELECTING APPROPRIATE ACTION MODIFY STANDARDS OR GUIDELINES, OR MODIFY ON-THE-GROUND ACTIVITIES, OR MODIFY MANAGEMENT PRESCRIPTION, OR MODIFY ALLOCATION OF MANAGEMENT PRESCRIPTION
MAKE ADJUSTMENTS
NO
IS ACTION A REVISION OR AN AMENDMENT OF THE FOREST PLAN?
REVISE OR AMEND FOREST PLAN/EIS

## D. Monitoring Element Display

Monitoring and evaluation requirements are displayed in Table V-1. The table is comprised of a number of components (columns), which are described below:

| Col. No. | Component Name | Description |
|---|---|---|
| 1 | Category Number | The item to be monitored is identified by using Forest Service Management Information Handbook (MIH) codes (Forest Service Handbook 1309.11). |
| 2 | Activity, Practice or Effect to be Measured | The specific items that respond to either the National Forest Management Act, Forest Service Manual 1920, plan direction, local or subsequent project needs. This is, as the name states, an activity, practice, or effect - a specific statement of what will be monitored. |
| 3 | Monitoring Objective | A specific statement of what is intended to be accomplished. |
| 4 | Monitoring Techniques | The description of the specific sampling or inventory techniques and the sources of information to be used. |
| 5 | Expected Precision and Validity | This is exactness or accuracy (repeatability) of the measurement technique and the expected probability that the information acquired through monitoring reflects the actual conditions. Both precision and reliability are qualitatively rated as either high, moderate or low. Some components such as key targets (e.g., MBF) will have a high level of accuracy and high probability of reflecting actual conditions. Other components, such as range condition and trend, will have a reduced level of precision and reliability based on the monitoring techniques available. The accuracy limits for precision and reliability are: |

| | | Level of Precision and Reliability | Accuracy Limits |
|---|---|---|---|
| | | High | Allows 10 percent variation of the standard |
| | | Moderate | Allows 33 percent variation of the standard |
| | | Low | Allows 50 percent variation of the standard |
| | | N/A | Not applicable or measurable by standard statistical methods |
| 6 | Minimum Monitoring Frequency | The schedule on which activity, practice, or effect is sampled. | |
| 7 | Reporting Period | The frequency at which monitoring results are summarized for a specific activity, practice or effect. | |
| 8 | Standard of Comparison (Yardstick) | These are the standards by which the activity, practice or effect will be evaluated. | |
| 9 | Responsible Staff | For each activity, practice, or effect to be monitored, the responsible individual (Resource Staff Officer, Forest Range Conservationist, etc.) is identified. | |
| 10 | Variability from Standard Indicating Further Action | This is the criteria describing the tolerance limits or standards from which the activity, practice or effect can vary from predicted performance. When these limits are exceeded, further action is taken as shown in Figure V-1. | |
| 11 | Average Annual Cost | This is the Forest's best estimate of the average annual monitoring costs that are over and above current standard operating costs. This includes additional manpower, travel, equipment or contract costs. | |

TABLE V-1

MONITORING REQUIREMENTS

| Category Number | Activity, Practice or Effect to be Measured | Monitoring Objective | Monitoring Techniques | Expected Precision & Validity | Minimum Monitoring Frequency |
|---|---|---|---|---|---|
| | | A - RECREATION | | | |
| A01 | Recreation Opportunity Spectrum | Identify changes of Recreation Opportunities | Field observations, road counts, ROS Users Guide, RIM reports | Moderate | 3 years |
| A07 | Condition and Trend of Developed Sites | Identify need for maintenance and rehabilitation | Field observations of hazard trees and vegetative deterioration | Moderate | Annual (20% sample) |
| A01 | Actual Use of Developed Recreation Sites | Provide data for Recreation Planning, update and revision | Occupancy rate samples, RIM reports and handbook, Forest Plan projections | Moderate | Annual (all sites) |
| A08 P09 | Condition of Dispersed Camping Areas | Identify need to close sites, regulate use or convert to developed site | Occupancy rate sampling, Code-a-site, research publications | Moderate | 3 years |
| A01 | Wild, Scenic and Recreation River Management | Retention of river designation | Field observations and assessment of planned program activities | Moderate | 3 years |
| A01 | Visual Condition of Forest | Determine, on project basis, if planned Visual Quality Objectives are being met. Validate the VQO inventory | Field observations, project environmental analysis, Special Use Permits, FERC Licenses, contracts, computer simulations, sketches | Moderate | Annual (25% sample) |
| A01 | Trend of Visual Character in Visual Corridor | Monitor maintenance of Visual Character of the specified Scenic Corridors | Field reviews, with Landscape Control Point Photo method | Moderate | 5 years |
| A01 | Visual Resource Improvement | Determine if visual resource improvement program is being carried out | Field review and photo point method | Moderate | Annual |

| porting riod | Standard of Comparison (Yardstick) | Responsible Staff | Variability From Standard Indicating Further Action | Average Annual Cost | Category Number |
|---|---|---|---|---|---|
| years | ROS Guidelines | Recreation Staff Officer | ±20% difference between actual and projected use | $200 | A01 |
| nual | FSM 2336 & 2340 | Recreation Staff Officer | Deterioration of site beyond that anticipated under normal use | $1,000 | A07 |
| nual | FSH 2309 12 | Recreation Staff Officer | When site use reaches 40% of theoretical capacities, plan for new facilities | $500 | A01 |
| ears | FSH 2309.11 | Recreation Staff Officer | Deterioration of site beyond that anticipated under normal use | $500 | A08 F09 |
| ears | FSM 2372 & Federal Wild River Plan | Recreation Staff Officer | Reduction in scenic values and resource degradation | $500 | A01 |
| ual | Forest Plan & FSH 2309 16 | Forest Landscape Architect | Failure to achieve the planned Visual Quality Objective within 5% of total project acreage by each VQO | $2,500-5,000 | A01 |
| ears | Forest Plan & FSH 2309.16 | Forest Landscape Architect | Trend is away from stated goal | $2,000 | A01 |
| ual | Forest Plan & FSH 2309 16 | Forest Landscape Architect | Less than 50% accomplishment of visual improvement projects identified in Forest goals and objectives, in any year | $500 | A01 |

TABLE V-1 (continued)
MONITORING REQUIREMENTS

| Category Number | Activity, Practice or Effect to be Measured | Monitoring Objective | Monitoring Techniques | Expected Precision & Validity | Minimum Monitoring Frequency |
|---|---|---|---|---|---|
| | | A - RECREATION (continued) | | | |
| A01 | Condition of Identified Cultural Properties | Determine the effects of management activities, vandalism and recreational use on approximately 10% of identified cultural resources Identify need for protection measures, verify adequacy of protection and mitigation measures and effectiveness of interpretation and law enforcement programs. | Field examination and evaluation, ARR, SHPO reports, LMP overview, FSM 2360, FPT patrol and law enforcement surveillance | Moderate | As identified in the EA and in response to reports of resource damage |
| A08 F09 | Effects of Off-Road Vehicles on Open and Restricted Areas. | Determining whether Standards and Guidelines for ORV use have been met and evaluate their effectiveness | Field reviews and transects | Low | Every 3 years |
| A08 | Behavioral Objectives Established for Self-Guided Interpretive Activities (signs, brochures, etc.) | Identify need for modification of messages or communication methods | Questionaires, Suggestion Box, Observation | Moderate | Within 2 years of installation |
| A08 | Behavioral Objectives Established for Guided or Personal Service Activities (office, campfire programs, etc.) | Identify need for modification of messages or communication methods | Questionaires, Suggestion Box, Observation, Interaction Analysis | Moderate | Annual (each activity) |
| A08 | Environmental Education Activities, not part of Interpretive Program | Identify need for modification of messages or communication methods | Observation, Tests | High | Completion of each activity |
| | | B - WILDERNESS | | | |
| B03 | Amount and Distribution of Wilderness Visitor Use | Obtain wilderness use by area | Field counts, electronic eye counts, wilderness permits | Moderate | Annual |
| B03 | Condition of Wilderness Campsites | Identify need for maintenance and rehabilitation | Apply Frissel Method for classifying campsite conditions. | High | Annual |

| Reporting Period | Standard of Comparison (Yardstick) | Responsible Staff | Variability From Standard Indicating Further Action | Average Annual Cost | Category Number |
|---|---|---|---|---|---|
| Annual | Pre-project or pre-affected condition (if known), site record - FSM 2360 | Forest Archaeologist | Identification of adverse effect | $7,000-15,000 | A01 |
| Annual | FSM 2355 | Resource Officer | Unacceptable soil or other resource damage | $500 | A08<br>F09 |
| Annual | FSH 1660 2 | Interpretive Services Staff Specialist | 30% deviation from behavioral objectives | $1,000 | A08 |
| Annual | FSH 1660 2 | Interpretive Services Staff Specialists | 30% deviation from behavioral objectives | $1,000-3,000 | A08 |
| Annual | FSM 1623 8 | Environmental Education Facilitator | 30% deviation from behavioral objectives | $500 1,000 | A08 |
| Annual | FSM 2323 & Wilderness Plans | Recreation Staff Officer | Desolation quota exceeded, Mokelumne capacity exceeded, resource deterioration | $500 | B03 |
| Annual | FSM 2326 & Wilderness Plans | District Ranger | 10% of sites in Condition Class 3 would be unacceptable Any sites in Class 4 or 5 would also be unacceptable | $300 | B03 |

TABLE V-1 (continued)
MONITORING REQUIREMENTS

| Category Number | Activity, Practice or Effect to be Measured | Monitoring Objective | Monitoring Techniques | Expected Precision & Validity | Minimum Monitoring Frequency |
|---|---|---|---|---|---|
| | | C - FISH AND WILDLIFE | | | |
| C01 | Population and Habitat Trends for Management Indicator Species | Establish population trends and changes in habitat quality for DEER | Map habitat (vegetation) changes to detect changes in habitat capability<br><br>DFG deer herd plans, Spot Kill maps, fetal number surveys, herd composition counts | High | Annual |
| C01 | Population and Habitat Trends for Management Indicator Species | Establish population trends and changes in habitat quality for Black Bear | Map habitat (vegetation) changes to detect changes in habitat capability<br><br>State spot kill maps, sighting records | Low | Annual |
| C01 | Population and Habitat Trends of Sensitive Species | Determine use of available habitat by and establish population trends for SPOTTED OWL Ensure Plan direction has been followed and verify predicted results. Verify accuracy of capability models of and assumptions. | Follow protocols in the Spotted Owl inventory and monitoring handbook<br><br>Map habitat changes (vegetation) to establish changes in habitat capability | Moderate | Annual (33% of territories per year) |
| C01 | Population and Habitat Trends of Sensitive Species | Determine use of available habitat by and establish population trends for GOSHAWK. Ensure Plan direction has been followed and verify predicted results. Verify accuracy of models and assumptions | First year-survey to locate goshawks and habitat used, then direct counts in designated territories and determination of nesting success and track changes in nest stand vegetation to determine change in habitat capability | Moderate | Annual |

| Reporting Period | Standard of Comparison (Yardstick) | Responsible Staff | Variability From Standard Indicating Further Action | Average Annual Cost | Category Number |
|---|---|---|---|---|---|
| 5 years | Blue Canyon, Pacific, Grizzly Flat and Salt Springs Interagency Deer Herd Plans and Habitat Capability Models | Forest Wildlife Biologist | ±10% change in deer populations over a 5 year period<br><br>Net change to a lower capability level | $1,000 | C01 |
| 5 years | Black Bear in California, California Dept of Fish and Game, May 1982 (Project W-51-R-26) and habitat capability models | Forest Wildlife Biologist | ±25% change in bear populations over a 5 year period<br><br>Net change to a lower capability level | $500 | C01 |
| 3 years (33% of territories per year) | R-5 LMP Direction revised 12/84 | Forest Wildlife Biologist | Reduction in habitat capacility for spotted owls within base habitat of SOHA's<br><br>Any deviation from Standards and Guidelines established for spotted owl Management Areas | $20,000 | C01 |
| 2 years | R-5 LMP Direction, Revised 12/84<br><br>Habitat capability Model | Forest Wildlife Biologist | Any deviation from Standards and Guidelines established for goshawk Management Areas<br><br>Reduction in habitat capability for goshawks within designated habitat areas | $10,000 first year<br><br>$500 thereafter | C01 |

TABLE V-1 (continued)

MONITORING REQUIREMENTS

| Category Number | Activity, Practice or Effect to be Measured | Monitoring Objective | Monitoring Techniques | Expected Precision & Validity | Minimum Monitoring Frequency |
|---|---|---|---|---|---|
| | | C - FISH AND WILDLIFE (continued) | | | |
| C01 | Population and Habitat Trends of Sensitive Species | Determine condition and use of available habitat and establish population trends for WILLOW FLY-CATCHER Ensure Plan direction has been followed and verify predicted results | Visually check meadow areas for sign of over-utilization by cattle which may effect riparian vegetation Review utilization analysis for grazing allotments, direct counts of breeding pairs | Moderate | 2 years |
| C01 | Population Trends of Threatened or Endangered Species | Determine use of available habitat for BALD EAGLE Ensure Plan direction has been followed and verify predicted results. | Direct counts, surveys, cooperative State winter survey reports<br><br>Determine suitability of habitat | Moderate | Annual (100% of reservoirs per year) |
| C01 | Population Trends of Threatened or Endangered Species | Determine success of reintroduction of PERGRINE FALCON | Field surveys of release sites each year after first release | Low | Annual |
| C01 | Snags as a special habitat component and habitat capability for cavity nesting birds | Determine distribution number and availability of snags and habitat trends for cavity nesting species. Ensure Plan direction has been followed | Calculation of snag densities and distribution in a sample of units in each timber compartment where harvest activities are being planned | Moderate | Annual |
| C01 | Vegetation Diversity and Distribution | Determine changes in vegetation diversity and distribution which may affect habitat of Management Indicator Species Ensure Land Management Plan direction has been followed | Map changes in distribution and diversity of vegetation Wildlife Habitat Relationships, stand record cards, periodic aerial photography flights | Moderate | Annual (20% of activitie occurring yearly) |

| Reporting Period | Standard of Comparison (Yardstick) | Responsible Staff | Variability From Standard Indicating Further Action | Average Annual Cost | Category Number |
|---|---|---|---|---|---|
| 2 years | Habitat capability model to be developed | Forest Wildlife Biologist/Calif Dept of Fish and Game | Reduction of habitat capability to the next lowest level as designated by Habitat Capability Standards | $2,000 | C01 |
| Annual | Bald Eagle Recovery Plan & R-5 LMP Direction, Revised 12/84 and Habitat capability Model | Forest Wildlife Biologist/US Fish and Wildlife Service | Reduction in habitat capability, loss of snags in areas indicated as primary bald eagle habitat around reservoirs | $500 | C01 |
| Annual | Peregrine Falcon Recovery Plan & R-5 LMP Direction, Revised 12/84 | Forest Wildlife Biologist | Indication that the territory is not being actively used | $500 | C01 |
| Annual | R-5 LMP direction revised 1/15/84 and Guidelines for Timber and Wildlife Mgmt Coordination in Regeneration Cutting | District Silviculturist | Any change from the 1985 National and Regional RPA Habitat Capability Objectives for cavity nesting birds and/or any deviation from Standards and Guidelines in the Forest Plan | $2,000 | C01 |
| 5 years | R-5 LMP Direction, Revised 12/84 | Forest Wildlife Biologist | When specified seral stage combinations are reduced to less than 5% of the land base within a given compartment | $3,000 | C01 |

TABLE V-1 (continued)
MONITORING REQUIREMENTS

| Category Number | Activity, Practice or Effect to be Measured | Monitoring Objective | Monitoring Techniques | Expected Precision & Validity | Minimum Monitoring Frequency |
|---|---|---|---|---|---|
| | | C - FISH AND WILDLIFE (Continued) | | | |
| C01 | Population Trends of Resident Trout | Establish fish population trends | Sample streams to determine fish biomass | Moderate | Annual (20% of stations per year) |
| C01 | Stream Fishery Habitat | Determine observable changes in fish habitat over time | Complete stream stability survey for a representative number of stream reaches; establish photo points to accompany survey | Moderate | Annual |
| | | C - SENSITIVE PLANTS | | | |
| C01 | Monitoring of Undisturbed Selected Populations of Navarretia prolifera spp. lutia, according to the Species Management Guide | Detect significant changes in populations | Field survey | High | Annual (25% of the selected populations per year) |
| C01 | Monitoring of Selected Navarretia prolifera ssp lutia Populations affected by Forest Management Activities, according to the Species Management Guide | Detect significant changes in populations | Field survey | High | Annual (Starting the year before, and continuing until 2 years after the activity is completed, then returning to the 4 year cycle) |

| Reporting Period | Standard of Comparison (Yardstick) | Responsible Staff | Variability From Standard Indicating Further Action | Average Annual Cost | Category Number |
|---|---|---|---|---|---|
| 5 years | | Forest Fisheries Biologist | Assuming 5 near normal water years, an overall 25% reduction in population | $800 | C01 |
| 5 years | FSM 2621, R-5 Supplement #3, 5/80 | Forest Fisheries Biologist | Changes in habitat which are attributable to management activities | $800 | C01 |
| Annual | | Forest Sensitive Plant Coordinator | 50% or more reduction or increase of individuals in a population or 25% or more reduction in numbers of populations over a 5 year period | $370 | C01 |
| Annual | | Forest Sensitive Plant Coordinator | 50% or more reduction in numbers of individuals from the undisturbed base over a 1 year period | $220 | C01 |

TABLE V-1 (continued)
MONITORING REQUIREMENTS

| Category Number | Activity, Practice or Effect to be Measured | Monitoring Objective | Monitoring Techniques | Expected Precision & Validity | Minimum Monitoring Frequency |
|---|---|---|---|---|---|
| | | C - SENSITIVE PLANTS (continued) | | | |
| C01 | Monitoring of Unselected Navarretia prolifera spp lutia Populations | Detect significant changes in populations | Field survey | High | Annual (12.5% of the unselected populations per year) |
| C01 | Monitoring of Silene invisa populations | Detect significant changes in populations | Field survey | High | Annual |
| C01 | Interim Monitoring for Sensitive Plant Species Without Species Management Guides | Detect negative population changes for annual species | Field surveys | High | Annual (50% of populations per year) |
| | | Detect negative population changes for perennial species | Field surveys | High | Annual (50% populations per year) |
| C01 | Designated Botanical Areas | Assure the continuation of vegetative characteristics for which the area was designated | Field surveys | High | Annual |
| | | D - RANGE | | | |
| D01 | Livestock Forage Availability as a Result of Management Practices | Collect site data to quantify available forage, consistent with multiple use objectives | Toe-point transects, photo plots | Moderate | Annual |
| D02 | Utilization Inspection of New Forage Producing Areas | Analyze use in key areas such as plantations and riparian areas to insure proper use and validate stocking levels | Field Inspections | Moderate | Annually for 2 years following implementation |

| Reporting Period | Standard of Comparison (Yardstick) | Responsible Staff | Variability From Standard Indicating Further Action | Average Annual Cost | Category Number |
|---|---|---|---|---|---|
| Annual | | Forest Sensitive Plant Coordinator | 50% or more reduction or increase of individuals in a population or 25% or more reduction in numbers of populations over a 8 year period | $370 | C01 |
| Annual | | Forest Sensitive Plant Coordinator | See Interim Species Management Guide | $1,500 annually 1st five years $500 annually thereafter | C01 |
| Annual | | Forest Sensitive Plant Coordinator | 50% or more reduction of individuals in a population over a 3 year period or 25% or more reduction of numbers of populations over a 3 year period | $1,500 | C01 |
| Annual | | Forest Sensitive Plant Coordinator | $\geq$ 5% reduction in numbers of populations or $\geq$ 10% reduction in individuals within a population | $1,100 | C01 |
| Annual | Forest Plan | Forest Sensitive Plant Coordinator | Any change in botanical characteristics | $680 | C01 |
| Annual | FSM 2209 21 | Range Specialist | Sites not producing at least 50 pounds per acre of forage will not be considered in calculating available forage | $1,600 | D01 |
| Annual | FSM 2209 21 | Range Specialist | 150% of proper use in two consecutive years, downward trend in condition of sensitive acres or unacceptable damage to seedlings | $2,000 | D02 |

TABLE V-1 (continued)
MONITORING REQUIREMENTS

| Category Number | Activity, Practice or Effect to be Measured | Monitoring Objective | Monitoring Techniques | Expected Precision & Validity | Minimum Monitoring Frequency |
|---|---|---|---|---|---|
| | | E - TIMBER | | | |
| E06 | Timber Offered for Sale | Meet Plan targets for volume and acreage to be placed under contract, by cutting method, Management Area and logging system | Review summary of Programmed Harvest Statements and Five-Year Timber Sale Action Program | High (Harvest Statements)<br><br>Moderate for 5-year program) | Annual |
| E03 | Compartment Resource Examination | Verify suitable lands | Review compartment map productivity overlays and sites in the field | Moderate | Annual |
| | | Accumulate data for compartment management | Examination of filing system, map overlays, and stand record cards | Moderate | Annual |
| E06 | Regeneration Cutting - Size and Dispersion | Meet Standards and Guidelines for size and dispersion of regeneration units | Field inspections, review of timber harvest plans | High (for size) Moderate (for dispersion) | (As sale layout is complete) |
| E04 | Reforestation | Establish certifiable stands shortly after deforestation | Review acreages in "Current Needs Reforestation" by tenure in 1-3 years, 3-5 years, over 5 years | High | Annual |
| | | | Review first and third year stocking surveys | High | Annual |

| Reporting Period | Standard of Comparison (Yardstick) | Responsible Staff | Variability From Standard Indicating Further Action | Average Annual Cost | Category Number |
|---|---|---|---|---|---|
| Annual | Forest Plan - Allowable Sale Quantity and Acreage of Regeneration Cutting | Timber Staff Officer | Cumulative regulated volume sold is not within +5% of Forest target<br><br>Cumulative acreage of regeneration cutting is not within ±20% of Forest target | -0- | E06 |
| Annual | Forest Plan | Timber Staff Officer | Failure to develop data required by Forest Standards and Guidelines for at least 10% of compartments per year | $1,500 | E03 |
| Annual | Forest Plan | Timber Staff Officer | Failure to develop or file data required by Forest Standards and Guidelines for at least 10% of compartments per year | | |
| Incorporated in each timber sale report | Forest Plan & R5 LMP direction revised, 10/15/83 | Timber Staff Officer | Does not meet Forest Standards and Guidelines | -0- | E06 |
| Annual | FSM 2470 & 2490 | Timber Staff Officer | More than nominal acreage in *"over 5 years" category* | $500 | E04 |
| Annual | | Timber Staff Officer | Less than 85% of plantations certified after 5 years | $500 | |

TABLE V-1 (continued)
MONITORING REQUIREMENTS

| Category Number | Activity, Practice or Effect to be Measured | Monitoring Objective | Monitoring Techniques | Expected Precision & Validity | Minimum Monitoring Frequency |
|---|---|---|---|---|---|
| | | E - TIMBER (Continued) | | | |
| E05<br>F09 | Condition of Regenerated Stands | Verify FORPLAN yield table projections of age at first commercial thinning | Predict age when average height of intermediates and codominants will reach 50 feet | Moderate | Annual (Examine 15% of plantations greater than 10 years old) |
| | | Evaluate Timber Stand Improvement Needs and Results | Using appropriate yield tables, compare growth before and after treatment | Moderate | After completion of each Timber Stand Improvement Project |
| | | Review Regional Stocking Guidelines | Predict basal area which will exist at time of first commercial entry in plantations | Moderate | Annual (minimum of 4 plantations per District by 12/85) |
| | | F- WATER | | | |
| F09 | Water Yield Improvement | Determine if Practice 81 and 82 as applied to snowpack management generates the anticipated water yield increases and delays in yield | Collect existing information from State, USGS and user groups within Forest boundaries, use State Hydrologic Evaluation/Analysis Program to analyze ungauged watersheds; establish Stream gauges at key sites | High (for stations) Moderate (for interpolated sites) | Continuous |

| Reporting Period | Standard of Comparison (Yardstick) | Responsible Staff | Variability From Standard Indicating Further Action | Average Annual Cost | Category Number |
|---|---|---|---|---|---|
| 5 years (first report by 12/85) | FORPLAN Yield Tables | Timber Staff Officer | The average age of 50-foot trees is less than 40 years or greater than 50 years | $1,000 | E05 F09 |
| Annual | Olivers & Powers, Dunning & Reinke, Schumacher Yield Tables | Timber Staff Officer | Growth less than 85% of yield table prediction | $500 | |
| 5 years (first report by 12/85) | FSM 2470 (Regional Standards) | Timber Staff Officer | Indicated optimum stockings is not within ±15% of Regional Standards | $600 | E05 |
| 5 years | *Forest Plan Predicted Water Yields* | *Forest Hydrologist* | *When Practice 81 and 82 predicted water yield increases and delivery time are in error by more than 15% of actual increase and delivery time* | *$50,000 first year $10,000 thereafter* | *F09* |

TABLE V-1 (continued)

MONITORING REQUIREMENTS

| Category Number | Activity, Practice or Effect to be Measured | Monitoring Objective | Monitoring Techniques | Expected Precision & Validity | Minimum Monitoring Frequency |
|---|---|---|---|---|---|
| | | F - WATER (Continued) | | | |
| F09 | Sediment Yield and Transport | Determine if Watershed Maintenance and Rehabilitation Practice 83 and Water Resource Management Practice 84 are effective in preventing unacceptable sediment delivery to stream channel systems | Estimate the bed load and suspended load in key stream channel reaches | Moderate | Annual (selected storm events) |
| F09 | Physical, Chemical & Bacteriological Water Quality | Determine if Practice 83 and 84 are effective and cost efficient in meeting State water quality standards | Collect water samples in selected streams and lakes and analyze at State approved water quality laboratories | Moderate to High | Annual (selected times to sample a variety of flow conditions) |
| F09 | Cumulative Watershed Effects (CWE) | Evaluate watershed and stream channel stability to determine if CWE's are occurring as a result of plan implementation and to refine Forest CWE methodologoy | Measure amounts of soil disturbance and vegetative removal, by second and third order watersheds. Also measure the lag time for selected watersheds to detect changes in runoff rate and flood peaks associated with our management activities | Moderate | Annual (selected watersheds and storm events) |
| F09 | Water Quality Management | To assess compliance with BMP direction and to continue to evaluate the effectiveness of BMP. | Review of prepared EA's, review of contract provisions, field activity reviews, water quality analysis, field observations | High | On going as part of EA and contract review process and trips to the field are taken Annual activity review, analysis as specified in project plans |

| Reporting Period | Standard of Comparison (Yardstick) | Responsible Staff | Variability From Standard Indicating Further Action | Average Annual Cost | Category Number |
|---|---|---|---|---|---|
| Annual | Federal and State Water Quality Standards and/or Objectives | Forest Hydrologist | When the beneficial uses of water are impaired and/or Federal or State Water Quality Objectives are violated | $5,000 | F09 |
| Annual | Federal and State Water Quality Standards and/or Objectives | Forest Hydrologist | When 15% of samples exceed State water quality standards | $3,000 | F09 |
| Annual (selected watersheds) | Existing and predicted condition of Forest watersheds | Forest Hydrologist | Downward trend or existing unstable watershed or stream channel conditions | $8,000 | F09 |
| nnual | BMP's identified as project mitigation requirements, Forest wide Standards and Guidelines, water quality objectives for beneficial uses | Resources Staff Officer | Implementing documents for three projects are found to be missing needed water quality mitigation measures Water quality objectives violated Two field reviews identify mitigation measures are not being implemented | $ 0 | F09 |

TABLE V-1 (continued)
MONITORING REQUIREMENTS

| Category Number | Activity, Practice or Effect to be Measured | Monitoring Objective | Monitoring Techniques | Expected Precision & Validity | Minimum Monitoring Frequency |
|---|---|---|---|---|---|
| | | F - SOILS AND GEOLOGY | | | |
| F09 | Soil Productivity Reduction on Soils with Finer Textured Subsoils | Determine if soil support service practice 86 is effective in limiting the amount of soil compaction and puddling associated with early and late season harvest and stand reestablishment activities | Field measurements and transects using the methods that give a direct or indirect measurement of soil compaction | Moderate | Annual If practice is occurring during high moisture periods |
| F09 E05 | Soil Productivity Reduction on Moderately Deep and/or Coarse Textured Soils | Determine if soil support service practice 86 is effective in preventing the removal or displacement of the upper surface horizons during timber harvest, stand reestablishment, and release and weeding. | Field measurements and transects using methods that measure erosion or soil displacement | Moderate | Annual |
| F09 E05 | Stand Reestablishment Practices and Growth Rates | Determine if soil resource and improvement practice 87 is effective in achieving desired stocking and growth rates. | Results of Stocking Surveys and condition information on regenerated stands followed up with soil analysis of problems areas | Moderate | Annual |
| G02 F09 | Harvest System and Facility Development Practices on the Stability of Geologic Hazard Areas | To evaluate increases in mass wasting in relationship to Geologic Hazard Areas and Forest Practices | Field Reviews, Observations and comparisons | Moderate | Annual |
| | | G - MINERALS | | | |
| G01 G03 G04 G05 G06 | Mineral Operations | Assure compliance with approved Operating Plans to adequately protect surface resources | Field observations, review of microfiche records, active claim files and operating plans | Moderate | Annual |
| G01 G03 G04 G05 G06 | Mining Activities | Assure mineral exploration and development is not unreasonably impaired by Management Prescriptions | Field observations, review of microfiche records, active claim files and operating plans | Moderate | Annual |

| Reporting Period | Standard of Comparison (Yardstick) | Responsible Staff | Variability From Standard Indicating Further Action | Average Annual Cost | Category Number |
|---|---|---|---|---|---|
| Annual | Timber Yield Tables/Forest Plan Guidelines | Forest Soil Scientist | 80% of an activity area shall be left in a condition of acceptable productivity potential for trees and other managed vegetation following land management activities | $2,500 | F09<br>E05 |
| Annual | Timber Yield Tables/Forest Plan Guidelines (to be developed) and Soil Management Guidelines | Forest Soil Scientist | Growth on impacted areas is less than 85% of yield table predictions | $2,500 | F09<br>E05 |
| Annual | FSM 2470 & 2490 Timber Yield Tables/Fertilization Guidelines (Power & Miles) | Forest Soil Scientist | Less than 85% of plantation certified after 5 years, growth yields less than 85% of of predicted | $2,000 | F09<br>E05 |
| Annual | Order III GRI | Forest Soil Scientist | 5% increase in landslide Activity over background | $2,000 | G02<br>F09 |
| Annual | FSM 2817 2 | Lands Officer | Failure to meet conditions of Plans of Operations | $4,000 | G01<br>G03<br>G04<br>G05<br>G06 |
| Annual | FSM 2810, 2820 | Lands Officer | Unjustified impairment of exploration and development operations | $500 | G01<br>G03<br>G04<br>G05<br>G06 |

TABLE V-1 (continued)
MONITORING REQUIREMENTS

| Category Number | Activity, Practice or Effect to be Measured | Monitoring Objective | Monitoring Techniques | Expected Precision & Validity | Minimum Monitoring Frequency |
|---|---|---|---|---|---|
| | | G - MINERALS (Continued) | | | |
| G01 | Mineral Withdrawals, Modifications and Revocations | Review the necessity for all existing or proposed withdrawals | Follow Federal Land Policy and Management Act provisions | Moderate | Annual to 10 years |
| | | J - LANDS | | | |
| J01 | Special Uses - Nonrecreational | Evaluate Administration of Special Use Permits, Licenses and Easements | Field inspections, fee reviews, Federal Land Policy and Management Act | High | Annual to 3 years |
| J03 | FERC Licenses and Utility Corridors | Monitor License and Special Use Permit provisions | Project Liaison Officer inspects sites for compliance | High | Annual |
| J12 | Landownership Acquisition, Exchange and Purchase | Evaluate effectiveness of Land Adjustment Program | Review each case Environmental Analysis for conformance with direction | High | Annual |
| | | L - FACILITIES | | | |
| L01 | Traffic Surveillance | To evaluate road and trail use and capacities to determine if the facility is the proper standard and performing as planned | Traffic counting and classification | High | Annual |
| L01 | Highway Safety | To reduce traffic accidents and deaths, injuries and property damage occurring on Forest Service roads | Forest Service, State and local accident reports to identify and record all known accident locations | High | Annual |
| L01 | Road Operations | Ensure road facilities support Forest objectives and protect users as well as resources | Determine Road Management Objectives and establish operation standards | Moderate to High | Annual |

| Reporting Period | Standard of Comparison (Yardstick) | Responsible Staff | Variability From Standard Indicating Further Action | Average Annual Cost | Category Number |
|---|---|---|---|---|---|
| 10 years | FSM 2760, 2810, 2820, & FLPMA | Lands Officer | When withdrawal is no longer needed or justified | $1,500 | G01 |
| Continuing | FSM 2710, 2720, 2790 | Lands Officer | Nonpayment of fees or noncompliance with conditions of Special Use Permits, Licenses and Easements | $20,000 | J01 |
| Continuing | FSM 2770 | Environmental Impact Specialist | Noncompliance with License and Special Use Permit provisions | $2,000 | J03 |
| Annual | FSM 5403, 5403 3 & Land ownership Adj Plan | Lands Officer | Presence of sensitive plants, threatened or endangered species, archaeological sites or local government agency objections | -0- | J12 |
| Annual | FSM 7731 11 FSM 7731 32 | Forest Engineer | Changes in road or trail use and traffic mix may indicate a change in operations or standards | $4,000 | L01 |
| Annual | FSM 7733 FSH 7109 31 | Forest Engineer | Identify high hazard locations in need of traffic engineering, no deviation tolerances established | $15,000 | L01 |
| Annual | FSH 7709 15 | Forest Engineer | No deviation tolerances established | $2,000 | L01 |

TABLE V-1 (continued)
MONITORING REQUIREMENTS

| Category Number | Activity, Practice or Effect to be Measured | Monitoring Objective | Monitoring Techniques | Expected Precision & Validity | Minimum Monitoring Frequency |
|---|---|---|---|---|---|
| | | L - FACILITIES (Continued) | | | |
| L25 | Facilities Management | Evaluate facility maintenance and replacement needs | Field and office review and inspection | Moderate to High | Annual (50% each year) |
| | | P - PROTECTION | | | |
| P04<br>P05<br>P06<br>P07 | Fire Suppression | Review efficiency of suppression organization to meet Eldorado protection needs | Review and analysis of Individual Fire Reports | Moderate | Annual |
| P11<br>P12<br>P13<br>P14 | Fuel Treatments - Natural Fuels Nonfire | Determine if target accomplishments are meeting resource objectives | Site inspections by Interdisciplinary Team | Moderate | Annual (by project) |
| P12<br>P14 | Prescribed Fire - Natural Fuels | Determine if target accomplishments are meeting resource objectives | Photo point, fuel inventory, site inspection by Interdisciplinary Team | High | Annual (by project) |
| P11 | Activity Fuel Treatment | Determine if target accomplishments are meeting resource objectives | On-site inspection | High | Annual (by project) |
| P01 | Fire Management Areas | Manage unplanned ignitions in established Fire Management Areas | On-site inspections, weather monitoring | High | Annual (by fire season) |
| P17 | Air Quality of Class I Areas | Determine air quality in Desolation and Mokelumne Wilderness areas | Measure specific air pollution and meterorological parameters | Moderate | Summer period |
| P17 | Smoke Management | Determine effect of prescribed fire and wildfire on air quality | Measure smoke dispersal in accordance with approved smoke management plan | Moderate | Selected projects |

| Reporting Period | Standard of Comparison (Yardstick) | Responsible Staff | Variability From Standard Indicating Further Action | Average Annual Cost | Category Number |
|---|---|---|---|---|---|
| 5 years | Ability of facilities to provide support necessary to manage resource programs | Forest Engineer | Replacement and maintenance program adequate to provide necessary facilities for resource programs | $2,000 | L25 |
| Annual | FSM 5120, 5130 | Fire Management Officer | Burned acreage is ±25% of expected loss | $3,000 | P04<br>P05<br>P06<br>P07 |
| Annual | FSM 5150 | Fire Management Officer | Accomplishment is greater than 120% or less than 90% of targets | $1,500 | P11<br>P12<br>P13<br>P14 |
| Annual | FSM 5150 | Fire Management Officer | Accomplishment is greater than 120% or less than 90% of targets | $1,500 | P12<br>P14 |
| Annual | FSM 5150 & BD Activity Review | Fire Management Officer | Less than 90% of sale treatment accomplishment | $1,500 | P11 |
| Annual | FSM 5100 | Fire Management Staff | Change in fuel types and increased public safety problems | $5,000 | P01<br>B01 |
| 5 years | Forest Plan and Federal Air Quality Standards | Resource Staff Officer | Downward trend or in violation of State standards more than 20% of the time | $10,000<br>$50,000 first year set up | P17 |
| Annual | Forest Plan and Federal air Quality Standards | Fire Management Officer | To be determined in cooperation with local Air Pollution Control Districts | $5,000 | P17 |

TABLE V-1 (continued)
MONITORING REQUIREMENTS

| Category Number | Activity, Practice or Effect to be Measured | Monitoring Objective | Monitoring Techniques | Expected Precision & Validity | Minimum Monitoring Frequency |
|---|---|---|---|---|---|
| | | P - PROTECTION (Continued) | | | |
| P34<br>P35 | Forest Pest Damage | Early detection, evaluation, and treatment of pest related problems and damage | Aerial and ground surveys, stand and resource examinations | Moderate | Annual |
| | | MULTI-RESOURCES | | | |
| A-P as appropriate | Effects of Plan Implementation in Resolving Public Issues | Determine to what extent plan direction is resolving public issues | Communication networks, public meetings, workshops, etc | Moderate | Continuous |
| J22 | Effects of N F Management on Adjacent Lands, Communities and other Government Entities | Determine effect Forest Plan is having on these entities | Review of social and economic effects projected in the FEIS and compare with current situation | Moderate | 2 years |
| A-P as Appropriate | Accomplishment of Objectives in Plan | Insure attainment | Attainment Reports | High | Continuous |
| A-P as Appropriate | Actual Cost of Implementing Plan Compared to Project Costs | Verify projected unit versus actual costs | Project Analysis using PAMARS and Attainment Reports | High | Quarterly |

| Reporting Period | Standard of Comparison (Yardstick) | Responsible Staff | Variability From Standard Indicating Further Action | Average Annual Cost | Category Number |
|---|---|---|---|---|---|
| Annual | Forest Plan | Timber Staff Officer<br>Forest Pest Management | When mortality or damage levels appear to interfere with or threaten the attainment of resource management objectives | -0- | P34<br>P35 |
| Annual | Public Issues should not become disruptive | Public Information Officer | Unacceptable results of general management reviews, functional reviews, etc | Included in appropriate functional costs | A-P as appropriate |
| 5 years | Outputs & Effects Estimated in the PEIS | Forest Supervisor | When divergence between actual situation and projected situation is considered unacceptable | Included in appropriate functional costs | J22 |
| Quarterly | Forest Plan | Forest Supervisor | Unacceptable results of Management Team review | Included in appropriate functional costs | A-P as appropriate |
| Yearly | Forest Plan Total and Unit Costs | Forest Administrative Officer | ±10% variation from projected costs | Included in appropriate functional costs | A-P as appropriate |

Appendix A

# Needed Resource Implementation Plans

# A. Needed Resource Implementation Plans

The plans listed in Appendix A are needed to fully implement the Forest Plan. These items are not routine, recurrent, or periodic activities. They are one-time jobs to be accomplished within 10 years from the approval date of the EIS and Forest Plan. Actual performance of the jobs is contingent upon receipt of enabling funds.

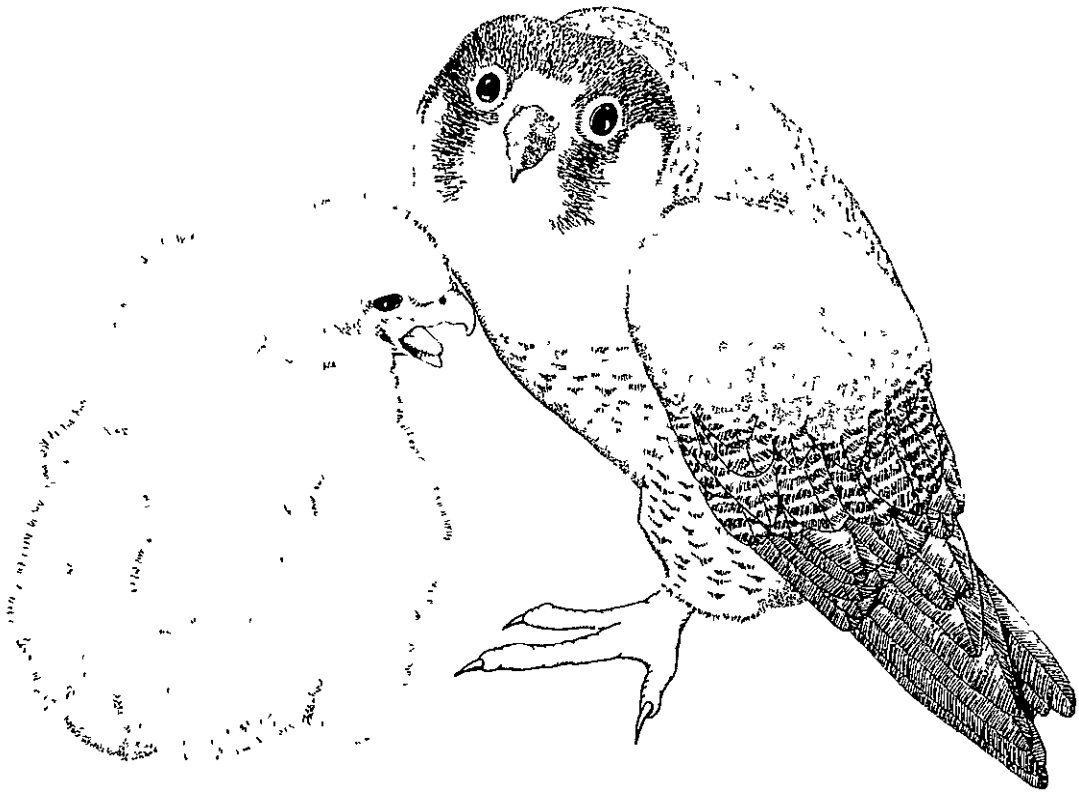
## Plans

| Item No. | Description | Completion |
|---|---|---|
| 1 | Complete the Management Plan for the Pacific Crest Trail.<br><br>Responsibility: Recreation Planner<br><br>Coordination: Lake Tahoe Basin Management Unit and the Stanislaus and Toiyabe National Forests | 1989 |
| 2 | Prepare a Management Plan for the Rubicon Springs 4-WD National Recreation Trail.<br><br>Responsibility: Recreation Planner and Georgetown District Ranger<br><br>Coordination: Lake Tahoe Basin Management Unit and the California Association of 4-Wheel Drives, Incorporated | 1991 |
| 3 | Replace the Interim Guidelines for the Mokelumne Wilderness with a new Mokelumne Wilderness Management Plan that incorporates land additions from the California Wilderness Act of 1984.<br><br>Responsibility: Recreation Planner and Amador District Ranger<br><br>Coordination: Stanislaus and Toiyabe National Forests | 1990 |
| 4 | Complete a Management Plan for the dually designated Emigrant Summit National Recreation/Historical Trail. | 1990 |

| Item No. | Description | Completion |
|---|---|---|
| | Responsibility: Forest Archaeologist, Recreation Planner and Amador District Ranger<br><br>Coordination: State Historical Preservation Officer (SHPO) | |
| 5 | Revise the Forest Development Transportation System Plan to conform to the road and trail program outlined in the approved Eldorado EIS and Forest Plan.<br><br>Responsibility: Transportation Planner | 1989 |
| 6 | Prepare a Management Plan for the candidate Mokelumne National Register Archaeological District.<br><br>Responsibility: Forest Archaeologist and Amador District Ranger<br><br>Coordination: State Historical Preservation Officer (SHPO), Pacific Gas and Electric | 1991 |
| 7 | Prepare Visual Corridor Plans for the following travel routes and concentrated use areas:<br><br>Highway 88<br>Highway 50<br>Crystal Basin<br>American River (Blair Bridge to west Forest boundary)<br>Mormom Emigrant Trail<br>Silver Fork of American River<br>Wrights Lake Road<br>Forebay Road<br>Salt Springs Reservoir<br>Trail Views<br>Community Views<br>Plummer Ridge<br>Wilderness<br><br>Responsibility: Landscape Architect and District Rangers<br>Coordination: Caltrans and County Road Departments | 1997 |

| Item No. | Description | Completion |
|---|---|---|
| 8 | If designated, prepare a Management Plan for the Mokelumne Wild River (dual designation with Mokelumne Wilderness).<br><br>Responsibility: Recreation Planner, Amador District Ranger<br><br>Coordination: Stanislaus National Forest | 2 years after designation |
| 9 | Prepare a Forest Interpretive Services Plan to provide direction, coordination and priorities for the interpretive services program.<br><br>Responsibility: Public Affairs Officer and District Rangers | 1987 |
| 10 | Prepare Species Management Guides for sensitive plant species<br><br>Responsibility: Sensitive Plant Coordinator | 2000 |
| 11 | Develop a Cultural Resources Management Plan for developed and proposed recreation sites.<br><br>Responsibility: Recreation Planner, Forest Archaeological and District Rangers<br><br>Coordination: State Historic Preservation Officer (SHPO), Local Tribal Councils | 1990 |
| 12 | Prepare Management Plans for Spotted Owl Habitat Areas<br><br>Responsibility: Forest Wildlife Biologist and Silviculturist | 1992 |
| 13 | Prepare a management plan for the Caples Wilderness after designation.<br><br>Responsibility: District Rangers, Placerville and Amador Districts | 2 years after designation |
| 14 | Complete a Forest OHV Trail Plan.<br><br>Responsibility: Forest Resource Staff Officer | 1990 |

| Item No. | Description | Completion |
|---|---|---|
| 15 | After designation, prepare a Management Plan for the Rubicon Wild and Scenic River. | 2 years after designation |
| | Responsibility: Forest Resource Staff Officer | |
| 16 | Prepare a Fire Management Plan | 1990 |
| | Responsibility: Fire Management Officer | |
| 17 | Prepare a Forest Land Adjustment Plan | 1991 |
| | Responsibility: Forest Resource Staff Officer | |
| 18 | Prepare a Programatic Environmental Assessment covering vegetation management for reforestation. | 1989 |
| | Responsibility: Timber Management Officer | |
| 19 | Prepare Habitat Management Plans for nesting bald eagles and nesting peregrine falcons. | 1992 |
| | Responsibility: Forest Wildlife Biologist | |



Appendix B

# Research and Technical Planning Needs

# B. Research and Technical Planning Needs

The research and technical planning needs listed below supplement the Forest Plan. They will provide data to assist Forest managers in implementing the Plan. These are one-time needs to be provided within 10 years from the approval date of the EIS and Forest Plan. Actual performance of the tasks is dependent upon receipt of enabling funds.

## Research Needs

| Item No. | Description | Completion |
|---|---|---|
| 1 | Further quantify visual resources in terms of dollar value per land unit, similar to RVD's. Visual Units seen. Dollars per acre seen. | 1990 |
| 2 | Develop refined planting methods to revegetate south-facing cut slopes in the 3,000 to 5,000 foot elevation range in the Central Sierra. | 1992 |
| 3 | Study hardwood stands (primarily black oak) to determine whether there is sufficient mast producing trees and young growth to take the place of older growth on a managed basis. The purpose of this need is to "ground truth" the Eldorado Land-Satellite Timber Inventory and substantiate Standards and Guidelines for hardwoods in the next planning period. Evaluate the existing hardwood stands and determine suitability as wildlife habitat and determine total acreage to subtract from the suitable timber land base for the next 10 years. | 1991 |
| 4 | Determine the capacity of habitat to produce identified numbers of deer in winter range using the Habitat Evaluation Process (HEP). This would provide the ability to track changes in numbers of animals that occur with changes in vegetation types manipulated by management. | 1991 |
| 5 | Develop a process to determine carrying capacities for dispersed recreation uses such as cross-country skiing, motorcycle riding, and snowmobiling. | 1993 |

| Item No. | Description | Completion |
|---|---|---|
| 6 | Develop a workable, cost-effective method to accurately monitor diversity as described in the Standards and Guidelines of the Forest Plan. | 1993 |
| 7 | Develop silvicultural prescriptions that will produce suitable habitat for old-growth dependent species as defined by Regional Planning Direction. Research would include methods for rotating habitats such as for spotted owl. This direction has not been fully tested on the ground. | 1991 |
| 8 | Develop or refine existing research data related to the production of mast to meet wildlife needs (refer to the Stanislaus National Forest Study by Potter and Johnson). | 1991 |
| 9 | Develop or adapt statistically valid methods of monitoring annual and perennial sensitive plant populations and species. Methods should be usable in the field, and easy to do and understand. | 1997 |
| 10 | Make ecological studies to determine range limits, habitat requirements, limiting factors, and viable populations of all sensitive plant species. | 1997 |
| 11 | Determine the effects of management activities on plants and populations, and how these activities affect survival of sensitive plant species. | 1997 |
| 12 | Make taxonomic studies of Calochortus clavatus var. avius, Lewisia pygmaea ssp. longipetala, and Lewisia serrata. | 1997 |
| 13 | Make ecological studies of the Rock Creek, Leonardi Springs, Traverse Creek, Round Top, Big Crater, Little Crater, and Wrights Lake Bog Botanical/Geological Special Interest Areas. | 1997 |
| 14 | Make ecological studies of the Snow Canyon Research Natural Area and the black oak woodland segment of the candidate Peavine Research Natural Area | 1990 |

| Item No. | Description | Completion |
|---|---|---|
| 15 | Make a more detailed research analysis of the effects of leaving oaks for wildlife in conifer plantations (supplement Silviculturist Dave Thomas' previous work on the Eldorado National Forest). | 1991 |
| 16 | Develop growth tables based on existing plantations, for a with/without herbicide treatment comparison. | 1993 |
| 17 | Make ecological studies to develop a habitat capability model for the willow flycatcher. | 1995 |
| 18 | Perform Cultural Resource Studies as follows: | 1993 |

Prehistoric

Develop a contextual overview of address the following prehistoric research topies.

General Topics:

a. Subsistence/Settlement patterns in the high Sierra and Sierran foothills.

b. Culture chronologies for the North-central Sierra. Ethnographic tribal boundaries; changes through time.

c. Trade; obsidian exchange and sourcing; inter-group/inter-region contact.

Specific Areas:

a. High elevation prehistoric sites on the Emigrant Summit Trail (ethnographic trade route).

b. Petroglyph/habitation sites in the Mokelumne Canyon (North Fork Mokelumne River)--cultural affiliation, chronology, function.

c. High-density site area on North Fork Cosumnes River (Capp's Crossing to Meiss)--cultural affiliations (area is in disputed "Nisenan-Miwok" boundary area), chronology, function.

| Item No. | Description | Completion |
|---|---|---|
| | Historic | |
| | General Topics: | |
| | a. Historic Railroad Logging in the Sierra. | |
| | b. Historic ditch/flume systems in the Sierra. | |
| | c. Historic mining activity in the Mother Lode. | |
| | d. Emigrant travel; homesteading. | |
| | Specific Areas: | |
| | a. The Emigrant Summit Trail (Alpine, Amador, El Dorado Counties). | |
| | b. The Volcanoville Mining Region (north of Georgetown, southwest of Michigan Bluff). | |
| | c. The California Door Company Railroad Logging system (Diamond Springs to Telephone Ridge). | |
| | d. The Michigan-California Lumber Company Railroad Logging system. | |
| | e. The Georgetown Divide Ditch/flume system. | |

## Technical Planning Needs

| Item No. | Description | Completion |
|---|---|---|
| 1 | Survey existing and potential goshawk territories to determine which ones are to be managed to maintain a viable population of the species. | 1989 |
| 2 | Inventory streamflow maintenance dams needing heavy repairs. Coordinate proposed rehabilitation work with the California Department of Fish and Game. | 1992 |
| 3 | Make an Order III Geologic Resource Inventory (GRI) to determine which forest lands are not suitable for intensive even-aged management because of slope hazard. | 1989 |

| Item No. | Description | Completion |
|---|---|---|
| 4 | Make a production and utilization study to redetermine the carrying capacity of the Rockbound, Bear River, Long Canyon, and Nevada Point range allotments. | 1997 |
| 5 | Make Future Use Continuation Studies (FUD's) of all recreation residence Special Use Permits on the Eldorado National Forest. | 1997 |
| 6 | Make an historic-archival study of the Emigrant Summit National Trail to evaluate the significance of individual sites and to determine mitigation to protect the sites against adverse affects. | 1989 |
| 7 | Computerize all existing Water Resource Inventories (WRI). | 1989 |
| 8 | Prepare the following watershed inventory and evaluation: | |
| | a. Develop a Sensitivity Index (a rating of a watershed's ability to withstand disturbance) utilizing soil, geologic, and watershed resource data. | 1990 |
| | b. Summarize past land disturbing practices (timber harvest, site preparation, road construction), as well as wildfire, by watershed, using a computer storage system. | 1990 |
| | c. Predict impacts of future land disturbing practices for highly sensitive watersheds. | 1991 |
| | d. Evaluate the existing Camp Creek cumulative watershed impact assessment using regionally approved methods for cumulative watershed effects to test the applicability of this method to the Eldorado. | 1991 |
| 9 | Prepare the following cultural resources inventory and evaluation for the designated areas and High Country Management Areas: | |
| | a. Develop a predictive model for cultural resources sensitivity and test for validity. | 1990 |

| Item No. | Description | Completion |
|---|---|---|
| | b. Inventory for cultural sites in stages by priority, from highest to lowest sensitivity. | 1993 |
| 10 | Prepare a Forest Fire Management Action Plan, which will include direction for Wilderness. | 1993 |
| 11 | Prepare establishment reports for a portion of the Pony Express route and the Rubicon Springs (ORV) route for designation as National Recreation Trails. | 1991 |
| 12 | Prepare an update to the 1982 WIN Inventory. | 1992 |

Appendix C

# Tentative 10-Year Timber Sale Action Plan and Timber Management Tables

# C. Tentative 10-Year Timber Sale Action Plan and Timber Management Tables

The following Tables C-1 through C-11 summarize the tentative 10-year timber sale program for the Eldorado National Forest. This plan was developed utilizing the existing 5-year timber sale action plan, as documented in the Timber Sale Program Announcement, dated March 9, 1988. The sales identified in the Timber Sale Program Announcement have been developed according to the guidelines established in the approved 1978 Timber Management Plan and Environmental Impact Statement. Most sales identified to be sold in fiscal years 1989, 1990, and 1991 are essentially complete and will be offered in their current condition. These sales deviate somewhat from the new practices and prescriptions as developed in this Forest Plan and Environmental Impact Statement. Sales to be offered after fiscal year 1991 will be modified to incorporate the new management direction.

As previously stated in Chapter III of the Draft Environmental Impact Statement, the President signed the Federal Timber Contract Modification Act, Public Law 98-478, on October 16, 1984. This law recognized that many timber purchasers bought timber from the Federal Government at high stumpage prices when the lumber market was also high. As a result of a major decline in the housing industry, the demand for lumber dropped, necessitating timber purchasers to delay the harvest of timber on sales under contract. As a result, the Eldorado had approximately 600 mmbf of uncut timber under contract, which represented about 50 percent of the capable, available, and suitable acres on the Eldorado. As a result of the Federal Timber Contract Modification Act, purchasers of federal timber returned certain timber sales that meet eligibility requirements to the government and were required to pay penalties. The qualifying sales are to be reoffered to industry within 5 years. Only minor modifications in sale design are anticipated for these sales. The regulations on Forest Service implementation procedures were published in the Federal Register on June 27, 1985. The Eldorado had approximately 230 mmbf of timber returned, therefore reducing the volume of uncut timber under contract to 302 mmbf, which represents about 20 percent of the capable, available, and suitable acres. This volume has been incorporated into the Tentative 10-Year Timber Sale Action Plan. A majority of the volume returned to the government has been resold.

Compartments identified for fiscal years 1993 through 1997 are predicted to be available timber compartments for those years. These compartments currently have existing sales under contract, and therefore that portion of the 10-Year Timber Sale Action Plan is subject to revision. **The entire 10-year Timber Sale Action Plan is subject to revision as it is dependent on funding levels for each fiscal year.**

Table C-12 summarizes the first decade regeneration harvest by strata. Tables C-13 through C-21 summarize various aspects of the timber management program.

TABLE C-13

ELDORADO NATIONAL FOREST LAND CLASSIFICATION

| | Classification | Acres |
|---|---|---|
| 1. | Non-Forest land (includes water) | 138,743 |
| 2. | Forest land | 457,981 |
| 3. | Forest land withdrawn from timber production | 36,225 |
| 4. | Forest land not capable of producing crops of industrial wood | 60,218 |
| 5. | Forest land physically unsuitable: | |
| | -- irreversible damage likely to occur | 0 |
| | -- not restockable within 5 years | 3,000 |
| 6. | Forest land--inadequate information 1/ | 0 |
| 7. | Tentatively suitable forest land (item 2 minus items 3, 4, 5, and 6) | 358,538 |
| 8. | Forest land not appropriate for timber production | 50,923 |
| 9. | Unsuitable forest land (items 3, 4, 5, 6, and 8) | 150,366 |
| 10. | Total suitable forest land (item 2 minus item 9) | 307,615 |
| 11. | Total national forest land (items 1 and 2) | 596,724 |

1/ Lands for which current information is inadequate to project responses to timber management.

TABLE C-14

VEGETATION MANAGEMENT PRACTICES
(ANNUAL AVERAGE IN FIRST DECADE FOR SUITABLE LANDS)

| Practice | Acres |
|---|---|
| Regeneration harvest: | |
| Clearcut | 2,084 |
| Shelterwood and seed tree | |
| - Preparatory cut | 0 |
| - Seed cut | 1,836 |
| - Removal cut | 0 |
| Selection: Individual Tree | 568 2/ |
| Selection: Small Group | 380 |
| Intermediate harvest: | |
| Commercial thinning | 0 |
| Salvage/sanitation | 200 2/ |
| Timber stand improvement | 2,500 |
| Reforestation 1/ | 4,300 |

1/ Includes natural and artificial reforestation
2/ Not a FORPLAN Solution - Forest Estimate

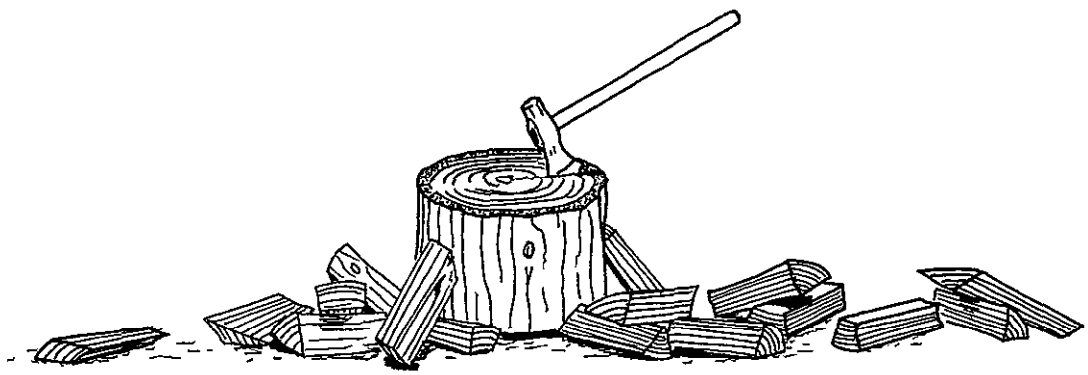


TABLE C-15

TIMBER PRODUCTIVITY CLASSIFICATION

| Potential Growth (Cubic Feet/Acre/Year) | Suitable Lands (Acres) | Percent | Unsuitable Lands (Acres) | Percent | Total (Acres) | Percent |
|---|---|---|---|---|---|---|
| Less than 20 (Non-Forested Lands) | 0 | (0) | 138,743 | (48) | 138,743 | (23%) |
| 20 - 49 | 23,553 | (8) | 48,369 | (16) | 71,922 | (12) |
| 50 - 84 | 35,329 | (11) | 30,231 | (11) | 65,560 | (11) |
| 85 - 119 | 58,883 | (19) | 30,231 | (11) | 89,114 | (15) |
| 120 - 164 | 151,575 | (49) | 38,193 | (13) | 189,768 | (32) |
| 165 - 224 | 29,442 | (10) | 3,342 | (1) | 32,784 | (5) |
| 225+ | 8,833 | (3) | ------ | (0) | 8,833 | (2) |
| TOTAL | 307,615 | (100) | 289,109 | (100) | 596,724 | (100) |

TOTAL ACREAGE - ELDORADO NATIONAL FOREST = 596,724

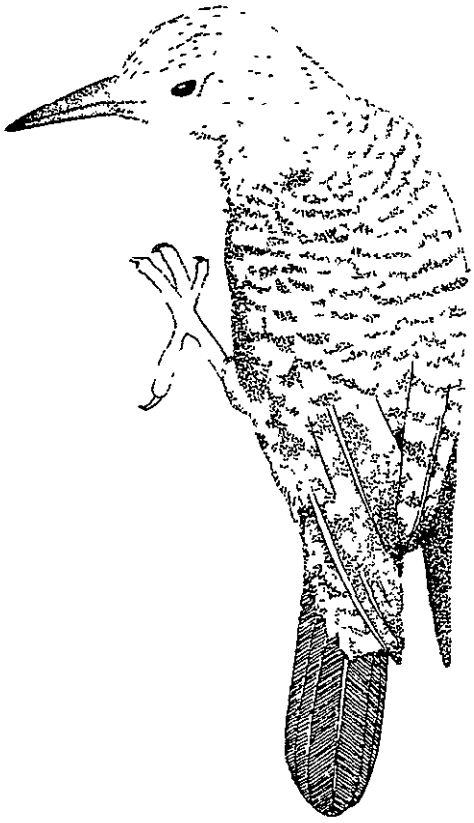


TABLE C-16

ALLOWABLE SALE QUANTITY (A.S.Q.) AND TIMBER SALE PROGRAM QUANTITY
(ANNUAL AVERAGE FOR FIRST DECADE)

| Harvest Method | Allowable Sale Quantity Sawtimber (MMCF) | (MMBF) | Other Products (MMCF) |
|---|---|---|---|
| Regeneration harvest: | | | |
| Clearcut | 9.0 | 58.4 | 0 |
| Shelterwood and seed tree | | | |
| - Preparatory cut | 0 | 0 | 0 |
| - Seed cut | 8.5 | 55.4 | 0 |
| - Removal cut | 0 | 0 | 0 |
| Uneven-Aged Management 3/ | 3.6 | 23.4 | 0 |
| Intermediate harvest: | | | |
| Commercial thinning | 0 | 0 | 0 |
| Salvage/sanitation | 0.1 | 0 | 0 |
| ASQ TOTALS | 21.1 | 137.2 | 0 |
| Long Term Sustained Yield | 23.2 | 150.9 | 0 |

| | Additional Sales Sawtimber (MMCF) | Other Products (MMCF) |
|---|---|---|
| Total for all harvest methods | 2.8 | 1.7 2/ |

Allowable sale quantity 21.1 1/ (MMCF) 137.2 (MMBF) Timber sale program quantity 22.5 (MMCF) 146.5 (MMBF)

1/ Does not include salvage - see Table IV-27, Chapter 4, EIS
2/ Estimated MMCF - fuelwood and biomass
3/ Includes small group selection and selection harvest and small group selection cutting in red fir to increase water yield.

TABLE C-17

PRESENT AND FUTURE FOREST CONDITIONS

| | Unit of Measure | Suitable Land | Unsuitable Land |
|---|---|---|---|
| Present forest: | | | |
| Growing stock | MMCF | 1,375.3 | 337.1 |
| | MMBF | 8,959.6 | 2,198.4 |
| Live cull | MMCF | 10.1 | 2.9 |
| | MMBF | 20.1 | 5.1 |
| Salvable dead | MMCF | 5.4 | 1.4 |
| | MMBF | 38.0 | 9.6 |
| Annual net growth | MMCF | 22.9 | 7.0 |
| | MMBF | 160.5 | 39.2 |
| Annual mortality 1/ | MMCF | 5.5 | 1.5 |
| | MMBF | 37.3 | 8.7 |
| Standing snag volume | MMCF | 61.2 | 25.1 |
| | MMBF | 433.6 | 109.2 |
| Future forest (Fifth Decade): | | | |
| Growing stock | MMCF | 1,335.2 | |
| Annual net growth | MMCF | 21.9 | |
| Rotation age | Years | 50 to 230 | |
| Forest average rotation age | Years | 70 | |

| | Age Class (Years) | Present Forest (Acres) | Future Forest - Fifth Decade (Acres) |
|---|---|---|---|
| Age class distribution acres (suitable lands) | 10 | 22,346 | 23,375 |
| | 20 | 20,324 | 21,926 |
| | 30 | 0 | 31,931 |
| | 40 | 0 | 30,743 |
| | 50 | 0 | 11,104 |
| | 60 | 0 | 19,109 |
| | 70 | 0 | 0 |
| | 80 | 0 | 0 |
| | 90 | 0 | 0 |
| | 100 | 58,529 | 0 |
| | 110 | 88,684 | 0 |
| | 120 | 8,843 | 0 |
| | 130 | 28,988 | 0 |
| | 140 | 69,926 | 25,050 |
| | 150 | 9,975 | 75,639 |
| | 160 | 0 | 4,693 |
| | 170 | 0 | 15,232 |
| | 180 | 0 | 43,597 |
| | 190 | 0 | 5,216 |
| | 200 | 0 | 0 |
| | TOTAL | 307,615 | 307,615 |

1/ Annual mortality was developed based on the assumption that the mortality measured in the Forest Inventory is a decade average, and the annual mortality is ten percent of the measured standing mortality.

TABLE C-18

# Comparison of Growth, Harvest, Inventory and Long-term Sustained Yield

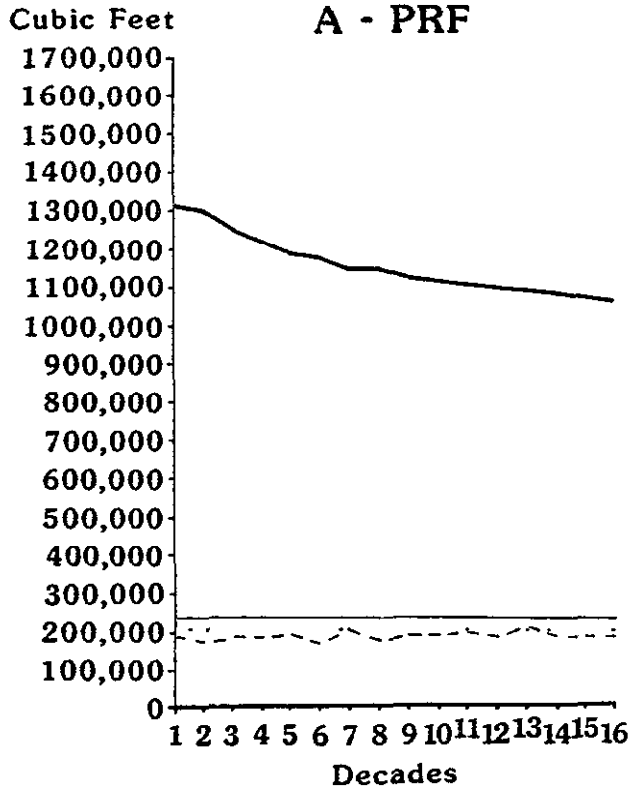
LEGEND

- - - - Growth

..... Harvest

——— Inventory

——— Long-term Sustained Yield



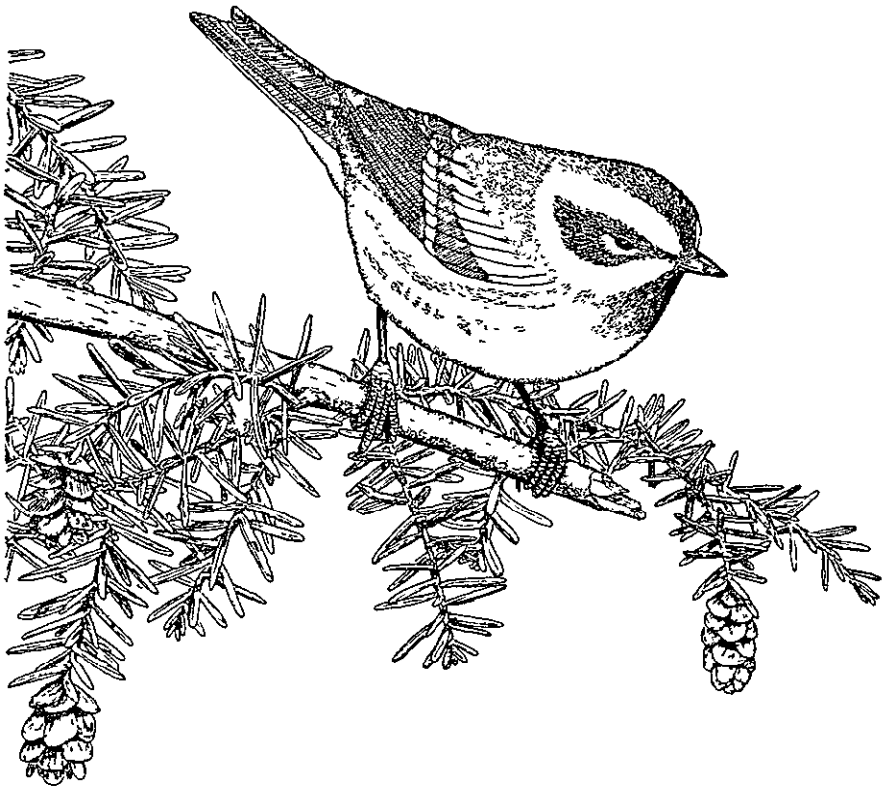



TABLE C-19

COMPARISON OF THE FEIS PREFERRED ALTERNATIVE
TO THE 1978 TIMBER MANAGEMENT PLAN

| TM PLAN | | PREFERRED ALTERNATIVE | |
|---|---|---|---|
| | ACRES | | ACRES |
| Non-Forest | 102,400 (18%) | Non-Forest | 138,743 (23%) |
| Productive Reserved | 7,800 | Withdrawn | 36,225 (6%) |
| Unproductive Forest | 161,600 (28%) | Forested Land Not Capable of Producing Industrial Wood | 60,218 (10%) |
| Unregulated | 18,900 (3%) | Unsuited Lands | |
| | | Irreversible Damage to Soil/Watersheds | 0 |
| | | Non-regenerable within 5 years | 3,000 |
| | | Not Suitable for Timber Production | 50,923 |
| | | Total | 53,923 (9%) |
| Suitable Timber Lands | | Suitable Timber Lands | |
| Standard | 183,100 | Regulation Class I | 144,995 |
| Special | 31,500 | Regulation Class II | 92,568 |
| Marginal | 78,300 | Regulation Class III | 70,052 |
| Total | 292,900 (50%) | Total | 307,615 (52%) |
| Total NFS Land | 583,600 | Total NFS Land | 596,724 (100%) |
| Potential yield of 138 3 MMBF based on 311,800 acres of Standard, Special, and Marginal lands. | | ASQ of 135.7 MMBF based on acres of suitable land | |

TABLE C-20

BREAKDOWN OF TENTATIVELY SUITABLE LANDS
FOR THE PREFERRED ALTERNATIVE

Tentatively Suitable Lands: 358,538 Acres

Lands Producing >20 cu. ft./ac/yr - 358,538

Lands Producing <20 cu. ft./ac/yr - 0

Land Not Appropriate to Timber Production: 50,923 Acres

Lands Suitable to Timber Production: 307,615 Acres

Lands Producing >20 cu. ft./ac/yr - 307,615
Lands Producing <20 cu. ft./ac/yr - 0

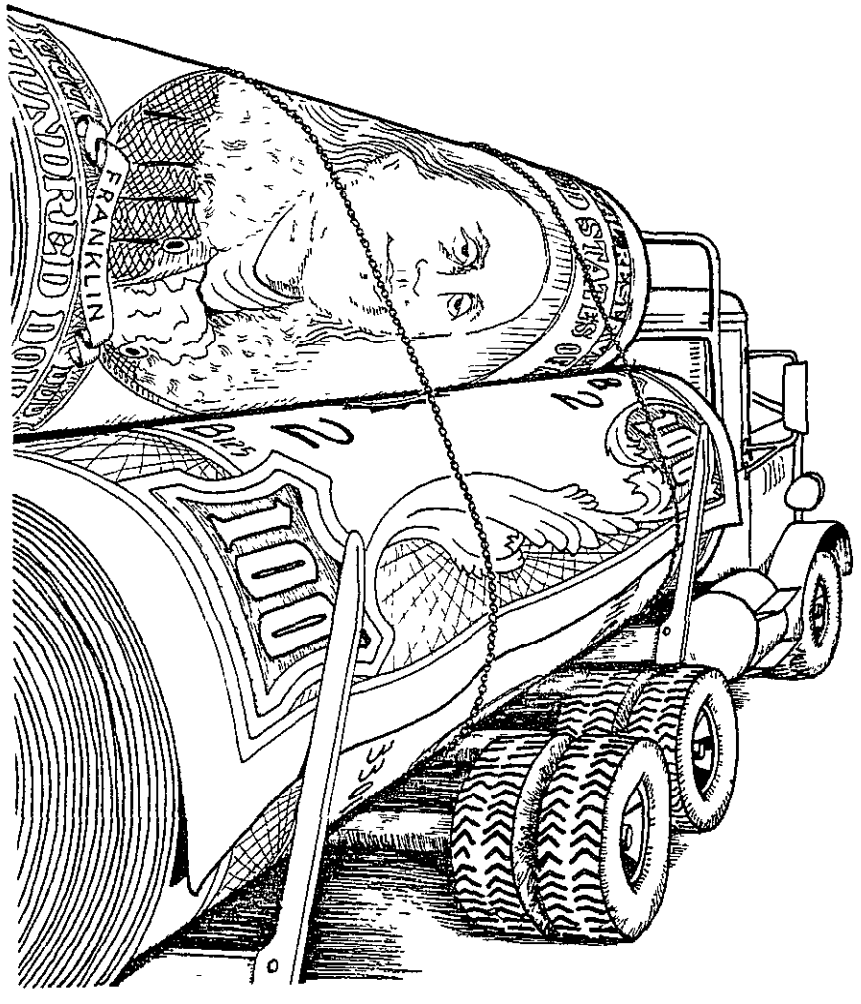


TABLE C-21

ELDORADO NATIONAL FOREST
C.A.S. ACREAGE DIFFERENCE FROM DRAFT LMP TO FINAL LMP

| MANAGEMENT AREA | | (ACRES) DRAFT LMP | (ACRES) FINAL LMP | DIFFERENCE |
|---|---|---|---|---|
| 1 | | 102,059 | 115,753 | +13,694 |
| 2 | | 21,721 | 14,361 | -7,360 |
| 3 | | 2,162 | 2,562 | +400 |
| 4 | | 19,472 | 20,623 | +1,151 |
| 5 | | 281 | 281 | 0 |
| 6 | | 24,820 | 16,833 | -7,987 |
| 7 | | 27,569 | 27,569 | 0 |
| 8 | | 15,206 | 13,855 | -1,351 |
| 9 | | 884 | 844 | -40 |
| 10 | | 2,535 | 2,535 | 0 |
| 11 | | 5,255 | 5,255 | 0 |
| 12 | | 2,266 | 4,017 | +1,751 |
| 13 | | 2,279 | 2,279 | 0 |
| 14 | | 250 | 250 | 0 |
| 15 | | 218 | 218 | 0 |
| 16 | | 234 | 234 | 0 |
| 17 | | 0 | 0 | 0 |
| 18 | | 46,000 1/ | 60,800 2/ | -60,800 |
| 19 | | 4,473 | 4,473 | 0 |
| | (REG. CLASS) | | | |
| 20 | (2) | 20,426 | 19,306 | -1,120 |
| 21 | (2) | 14,885 | 14,885 | 0 |
| 22 | (2) | 28,943 | 22,315 | -6,628 |
| 23 | (2) | 38,867 | 29,967 | -8,900 |
| 24 | (1) | 160,878 | 131,795 | -29,083 |
| 25 | (2) | 0 | 25,401 | +25,401 |
| 26 | (3) | 24,909 | 23,844 | -1,065 |
| 27 | (0) | 551 | 0 | -551 |
| 28 | (0) | 2,937 | 2,937 | 0 |
| 29 | (0) | 63,052 | 27,817 | -35,235 |
| 30 | (3) | 25,963 | 27,200 | +1,237 |

1/ 46,000 acres are duplicated from Management Areas 20 through 30 in the Draft LMP. These acres are within the CAS landbase. In the Final LMP, 39,600 acres are dedicated, and are not available to the CAS landbase.

2/ 21,200 acres are within the suitable landbase. The remaining acres have been withdrawn from the suitable landbase (39,600 acres).

Major additions or subtractions from the CAS landbase include: 1) an additional 12,200 acres of Mokelumne; 2) a reduction of 47,600 acres for spotted owls with no scheduled timber harvest; 3) an additional 7,360 from Wild and Scenic Rivers; 4) an additional 5,000 of red fir strata from unsuitable; 5) an additional 1500 to CAS from Caples Creek; 6) a reduction of 4,400 from Maintenance to High Country.

# D. Lands Adjustment Summary

The parcels listed below have been taken from the current Eldorado National Forest Landownership Adjustment Plan. The locations and acres represent lands that are available for disposal by exchange during the period of the Plan. Acres are estimated for unsurveyed parcels.

National Forest Lands Available for Disposal by Exchange

| Location | Acres |
|---|---|
| T8N R13E | |
| Sec. 17 - S-1/2 SE-1/4 | 80 |
| Sec. 20 - N-1/2 NE-1/4 | 80 |
| Sec. 26 - NW-1/4 SE-1/4 | 40 |
| Sec. 28 - SW-1/4 NE-1/4, SE-1/4 NW-1/4 | 80 |
| Sec. 35 - SW-1/4 SE-1/4, Por. SE-1/4 | 47 |
| T9N R13E | |
| Sec. 16 - SE-1/4 SE-1/4 | 40 |
| T10N R12E | |
| Sec. 2 - Por. of NE-1/4 SW-1/4 and S-1/2 SW-1/4 | 100 |
| Sec. 10 - SW-1/4 NE-1/4, S-1/2 SW-1/4, SE-1/4 NE-1/4 SW-1/4, S-1/2 N-1/2 SE-1/4, S-1/2 SE-1/4 | 250 |
| Sec. 11 - E-1/2 SW-1/4 NE-1/4, SE-1/4 NE-1/4, N-1/2 NW-1/4, W-1/2 SE-1/4 NW-1/4, NE-1/4 SW-1/4 | 200 |
| Sec. 12 - NW-1/4 NW-1/4 | 40 |
| Sec. 14 - NW-1/4 NW-1/4 | 40 |
| T10N R13E - Exchange to a Public Agency Only | |
| Sec. 8 - NE-1/4 SE-1/4 | 40 |
| Sec. 10 - NW-1/4 NE-1/4 | 40 |
| T11N R11E | |
| Sec. 6 - Lot 1, Por. Lots 2,5,6, N-1/2 N-1/2 Lot 7, S-1/2 S-1/2 Lot 7, Por. Lot 11, Por. S-1/2 NE-1/4, Por. SE-1/4 SW-1/4, Por. N-1/2 SE-1/4, SE-1/4 SE-1/4, Unpat. MS 6247 | 464 |
| Sec. 14 - NW-1/4 NE-1/4, NE-1/4 NW-1/4 | 80 |
| Sec. 18 - Lot 4, E-1/2 E-1/2 | 207 |
| Sec. 19 - Por. Lot 1&2, Por. E-1/2 NW-1/4, Unpat. MS 6425 & 6449 | 176 |

| Location | | Acres |
|---|---|---|
| T11N R12E | | |
| Sec. 34 | - E-1/2 NE-1/4, NE-1/4 SE-1/4 | 120 |
| T11N R13E | | |
| Sec. 32 | - NE-1/4 SW-1/4, N-1/2 SE-1/4 | 120 |
| Sec. 33 | - SW-1/4 SW-1/4 | 40 |
| T12N R10E | | |
| Sec. 12 | - NE-1/4 NE-1/4, SW-1/4 NW-1/4, SE-1/4 NW-1/4, E-1/2 SW-1/4, SW-1/4 SW-1/4, SE-1/4 | 440 |
| Sec. 24 | - NE-1/4, W-1/2 NW-1/4, E-1/2 E-1/2 NE-1/4 NW-1/4, W-1/2 W-1/2 NE-1/4 NW-1/4, SE-1/4 NW-1/4, N-1/2 SW-1/4, E-1/2 SW-1/4 SW-1/4, SE-1/4 SW-1/4 | 400 |
| T12N R11E | | |
| Sec. 30 | - Lot 1 | 44 |
| T13N R11E | | |
| Sec. 8 | - S-1/2 S-1/2 SE-1/4 | 40 |
| Sec. 9 | - E-1/2 SW-1/4 SE-1/4, S-1/2 SE-1/4 SE-1/4 | 40 |
| Sec. 14 | - NW-1/4 SW-1/4 | 40 |
| Sec. 15 | - Lot 7, SE Por. Lot 10, NE Por. Lot 15 | 23 |
| Sec. 16 | - SE-1/4 NE-1/4 NE-1/4 | 10 |
| Sec. 17 | - W-1/2 SW-1/4 | 80 |
| Sec. 18 | - Lots 1-4, Lots 20-27, E-1/2 SW 1/4, Por. E-1/2 NW-1/4 | 377 |
| Sec. 21 | - SE-1/4 NW-1/4, NE-1/4 SW-1/4, SE-1/4 NE-1/4 NE-1/4, E-1/2 SE-1/4 NE-1/4 | 110 |
| Sec. 22 | - Lots 1,4,5,13 | 179 |
| Sec. 27 | - Lots 1,2,7,8,9,10,18 | 203 |
| | Total | 4,270 |

# E. Transportation Summary

## 1. All Purpose Roads and Trails

The road and trail miles needed to produce the various goods and services from the Eldorado are projected through the first decade of the Plan in Table E-1.

TABLE E-1
ROAD AND TRAIL MILES

| Activity | Decade 1 |
|---|---|
| Road Construction | 440 |
| Road Reconstruction | 626 |
| Total Road Miles | 1,066 |
| Trail Construction | 330 |
| Trail Reconstruction | 160 |
| Total Trail Miles | 490 |

## 2. Forest Highways

The existing Forest Highways listed in Table E-2 are carried forward to the Forest Plan.

TABLE E-2
FOREST HIGHWAYS

| Forest Highway Number | Name | Approximate Miles | Jurisdiction |
|---|---|---|---|
| 136 | Soda Springs-Riverton | 23.0 | El Dorado Co. |
| 137 | Wentworth Springs | 24.0 | El Dorado Co. |
| 179 | Chili Bar | 16.4 | State (Calif.) |
| 180 | Rock Creek | 23.4 | El Dorado Co. |
| 181 | Grizzly Flat | 23.8 | El Dorado Co. |
| 182 | Sly Park | 4.5 | El Dorado Co. |
| 183 | Omo Ranch | 9.7 | El Dorado Co. |
| 184 | Bear River | 5.8 | Amador Co. |

The ORV acres/miles will remain approximately the same as in current direction (1977 Road Vehicle and Travel Plan), until January 1990, when a new Forest ORV Plan becomes effective. At that time, ORV use will be restricted to a designated road and trail system with the possible exception of some small areas open to unrestricted ORV travel.

In the interim, prior to implementation of the 1990 Forest ORV Plan some additional closures and restrictions will apply. These closures and restrictions are discussed in the direction for each Management Area under Management Practice 27 and 28. Specific closures are shown in Table E-3 and E-4.

TABLE E-3
DELETED 4-WD ROADS

| Road Number | | Road Name | District Miles Amador | Placerville | Pacific | Georgetown |
|---|---|---|---|---|---|---|
| 9N82A | 1/ | Beebe Lake | 3.5 | | | |
| 19E04 | 1/ | Indian Valley | 1.7 | | | |
| 9N83A | 1/ | Stevenot | 2.0 | | | |

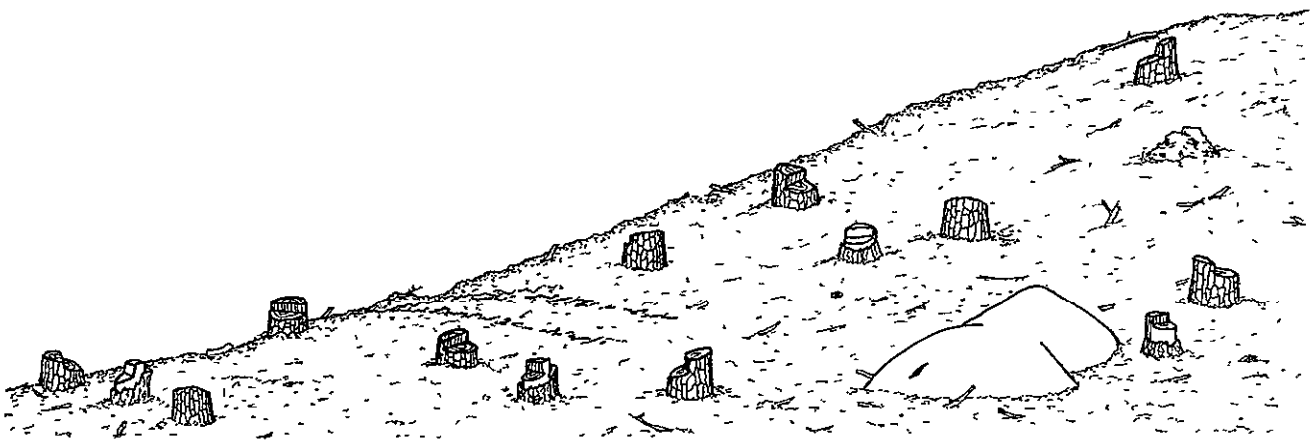
TABLE E-4
DELETED 2-WD CYCLE TRAILS

| Road Number | | Road Name | District Miles Amador | Placerville | Pacific | Georgetown |
|---|---|---|---|---|---|---|
| 17E13 | | Bryan Meadows | | 3.0 | | |
| 17E14 | | Sayles Canyon | | 1.4 | | |
| 16E22 | 1/ | Upper Pardoe | 6.0 | | | |
| 18E21 | 1/ | Evergreen | 1.5 | | | |
| 18E08 | 1/ | Grouse Lake (Granite Lake Segment) | 2.3 | | | |

1/ Deleted by inclusion of this area into wilderness by the 1984 California Wilderness Bill.

Appendix F

# Water Quality



# F. Water Quality

1. Introduction: The Forest Service water quality maintenance and improvement measures called Best Management Practices (BMP) were developed in compliance with Section 208 of the Federal Clean Water Act, PL92-500, as amended. After a lengthy development and public review process from 1977 to 1979, the practices developed by the Forest Service were certified by the State Water Resources Control Board and approved by EPA. The signing of a 1981 Management Agency Agreement (MAA) resulted in the formal designation of the Forest Service at the water quality management agency for the public domain lands it administers. The BMP are the measures both the State and Federal water quality regulatory agencies expect the Forest Service to implement to meet water quality objectives and to maintain and improve water quality. There are currently 98 practices documented, 96 of which are certified and approved as BMP. The two remaining practices are still being improved before referral to the State and EPA for certification and approval. In a like manner, work continues on developing new management practices and evaluating the effectiveness of the existing BMP. Due to the dynamic nature of management practice development and refinement, the original Forest Service publication documenting BMP is continually being updated. The current publication reference is; WATER QUALITY MANAGEMENT FOR NATIONAL FOREST SYSTEM LANDS IN CALIFORNIA, U.S. Forest Service, Pacific Southwest Region publication, 1979. This publication is hereby incorporated by reference into this document. Work is underway to republish the updated version of this text as a Soil and Water Conservation Handbook.

Water quality management is administered on National Forest lands through the continued implementation of BMP and through the guidance of a 1981 Management Agency Agreement with the State of California Water Resources Control Board.

2. Implementation Process: Forest Plans are broad level planning documents that encompass the entire Forest and a multitude of different management activities. Because of the physical-biological diversity of any given National Forest (different soils, vegetation, slopes, presence of surface water, etc.) and the mixture of activities that can occur on various portions of the Forest, site specific methods and techniques for implementing the BMP are not identified at the Forest Planning level. For each individual project that is initiated to implement the Forest Plan a separate site specific environmental assessment is conducted. The appropriate BMP necessary to protect or improve water quality and the methods and techniques of implementing the BMP are identified at the time of this on-site, project specific assessment. In this manner the methods and techniques can be tailored to fit the specific physical-biological environment as well as the proposed project activities. There are commonly many methods available for implementing a BMP, and not all are applicable to every site. An

example is BMP 2.7 Control of Road Drainage. This BMP dictates that roads will be correctly drained to disperse water runoff to minimize the erosive effects of concentrated water. There are many ways to drain a road correctly; e.g., outslope the road surface, install water bars, install French Drains, inslope the road surface,, and install culverts, etc. It is during the on-site environmental assessment of a specific road construction project proposal that the appropriate method or combination of methods to correctly drain the road are identified.

After the methods and techniques of implementing the appropriate BMP are identified, they are discussed by the project interdisciplinary team. As a result of discussions, the appropriate mix of implementation methods and techniques are selected and incorporated into the environmental document as required mitigation measures. These mitigation measures are then carried forward into project plans and implementation documents; e.g., contract language, design specifications, etc. to assure they are part of the project work accomplished. Implementation on the ground is assured by the Forest Service official responsible for on-site administration of the project. Supervisory quality control of BMP implementation is attained through review of environmental assessments and contracts, field reviews of projects, and monitoring the quality of the water in the project area when warranted.

3. The Best Management Practices: There are 98 practices identified in eight different resource categories. They are as follows:

TIMBER

1.1 Timber Sale Planning Process
1.2 Timber Harvest Unit Design
1.3 Use of Erosion Hazard Rating for Timber Harvest Unit Design
1.4 Use of Sale Area Maps for Designating Water Quality Protection Needs
1.5 Limiting Operating Period of Timber Sale Activities
1.6 Protection of Unstable Areas
1.7 Prescribing the Size and Shape of Clearcuts
1.8 Streamside Management Zone Designation
1.9 Determining Tractor Loggable Ground
1.10 Tractor Skidding Design
1.11 Suspended Log Yarding in Timber Harvesting
1.12 Log Landing Location
1.13 Erosion Prevention and Control Measures During Timber Sale Operations
1.14 Special Erosion Prevention Measures on Disturbed Land
1.15 Revegetation of Areas Disturbed by Harvest Activities
1.16 Log Landing Erosion Prevention and Control
1.17 Erosion Control on Skid Trails
1.18 Meadow Protection During Timber Harvesting
1.19 Streamcourse Protection
1.20 Erosion Control Structure Maintenance

1.21 Acceptance of Timber Sale Erosion Control Measures Before Sale Closure
1.22 Slash Treatment in Sensitive Areas
1.23 Five-Year Reforestation Requirement
1.24 Non-recurring "C" Provision That Can Be Used For Water Quality Protection
1.25 Modification of the Timber Sale Contract

ROAD AND BUILDING SITE CONSTRUCTION

2.1 General Guidelines for the Location and Design of Roads
2.2 Erosion Control Plan
2.3 Timing of Construction Activities
2.4 Road Slope Stabilization (Preventative Practice)
2.5 Road Slope Stabilization (Administrative Practice)
2.6 Dispersion of Subsurface Drainage from Cut and Fill Slopes
2.7 Control of Road Drainage
2.8 Constraints Related to Pioneer Road Construction
2.9 Timely Erosion Control Measures on Incomplete Road and Streamcrossing Projects
2.10 Construction of Stable Embankments
2.11 Minimization of Sidecast Material
2.12 Servicing and Refueling Equipment
2.13 Control of Construction in Streamside Management Zones
2.14 Controlling In-channel Excavation
2.15 Diversion of Flows Around Construction Sites
2.16 Streamcrossings on Temporary Roads
2.17 Bridge and Culvert Installation
2.18 Regulation of Streamside Gravel Borrow Areas
2.19 Disposal of Right-of-Way and Roadside Debris
2.20 Specifying Riprap Composition
2.21 Water Source Development Consistent with Water Quality Protection
2.22 Maintenance of Roads
2.23 Road Surface Treatment to Prevent Loss of Materials
2.24 Traffic Control During Wet Periods
2.25 Snow Removal Controls to Avoid Resource Damage
2.26 Closure or Obliteration of Temporary Roads
2.27 Restoration of Borrow Pits and Quarries
2.28 Surface Erosion Control at Facility Sites

MINING

3.1 Administering Terms of the U.S. Mining Laws (Act of May 10, 1872) for Mineral Exploration and Extraction on National Forest System Lands 1/
3.2 Administering Terms of BLM Issued Permits or Leases for Mineral Exploration and Extraction on National Forest System Lands
3.3 Administering Common Variety Mineral Removal Permits

1/ This practice has not been recommended for certification and approval as BMP at this time. (1/86)

RECREATION

4.1 Sampling and Surveillance of Designated Swimming Sites
4.2 On-site Multidisciplinary Sanitary Surveys Will Be Conducted to Augment the Sampling of Swimming Waters
4.3 Provide Safe Drinking Water Supplies
4.4 Documentation of Water Quality Data
4.5 Control of Sanitation Facilities
4.6 Control of Refuse Disposal
4.7 Assuring that Organizational Camps Have Proper Sanitation and Water Supply Facilities
4.8 Water Quality Monitoring Off-Road Vehicle Use According to a Developed Plan
4.9 Sanitation at Hydrants and Faucets Within Developed Recreation Sites
4.10 Protection of Water Quality Within Developed and Dispersed Recreation Areas
4.11 Location of Pack and Riding Stock Facilities in Wilderness, Primitive, and Wilderness Study Areas

VEGETATIVE MANIPULATION

5.1 Seed Drilling on the Contour
5.2 Slope Limitations for Tractor Operation
5.3 Tractor Operation Excluded from Wetlands and Meadows
5.4 Revegetation of Surface Disturbed Areas
5.5 Tractor Windrowing on the Contour 1/
5.6 Soil Moisture Limitations for Tractor Operation
5.7 Contour Disking
5.8 Pesticide Use Planning Process
5.9 Apply Pesticide According to Label and EPA Registration Directions
5.10 Pesticide Application Monitoring and Evaluation
5.11 Pesticide Spill Contingency Plan
5.12 Cleaning and Disposal of Pesticide Containers and Equipment
5.13 Streamside and Wet Area Protection Zone During Pesticide Spraying
5.14 Controlling Pesticide Drift During Spray Application

FIRE SUPPRESSION AND FUELS MANAGEMENT

6.1 Fire and Fuel Management Activities
6.2 Consideration of Water Quality in Formulating Fire Prescriptions
6.3 Protection of Water Quality from Prescribed Burning Effects
6.4 Minimizing Watershed Damage from Fire Suppression Efforts
6.5 Repair or Stabilization of Fire Suppression Related Watershed Damage
6.6 Emergency Rehabilitation of Watersheds Following Wildfires

1/ This practice has not been recommended for certification and approval as BMP at this time. (1/86)

WATERSHED MANAGEMENT

7.1 Watershed Restoration
7.2 Conduct Floodplan Hazard Analysis and Evaluation
7.3 Protection of Wetlands
7.4 Oil and Hazardous Substance Spill Contingency Plan
7.5 Control of Activities Under Special Use Permit
7.6 Water Quality Monitoring
7.7 Management by Closure to Use (Seasonal, Temporary, and Permanent)

GRAZING

8.1 Range Analysis, Allotment Management Plan, Grazing Permit System, and Permittee Operating Plan
8.2 Controlling Livestock Numbers and Season of Use
8.3 Controlling Livestock Distribution Within Allotments
8.4 Rangeland Improvements