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United States
Department of
Agriculture

Forest Service

1992

Pacific
Southwest
Region

Land and Resource Management Plan

FINAL EXTRA COPY

Lassen National Forest

LAND M D RESOURCE MMAGEMENT PLAN

Lassen National Forest

FINAL EXTRA COPY

This is a Plan for managing the Lassen National Forest for the next 10-15 years.

1992

For more information about the Plan, please contact:
Forest Supervisor
Lassen National Forest
55 South Sacramento Street
Susanville, California 96130

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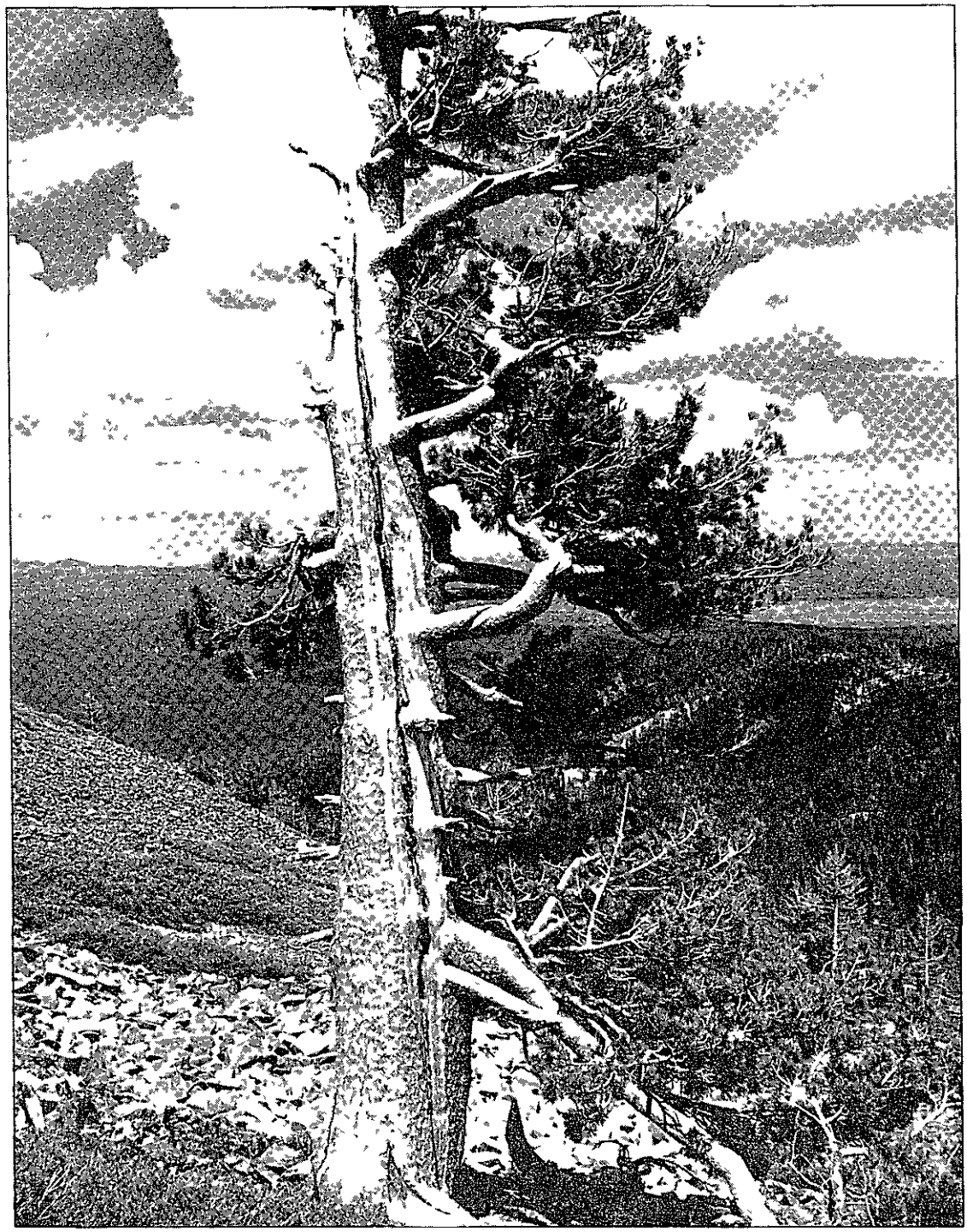
Introduction 1



Western white pine on Butt Mountain

CHAPTER 1 - INTRODUCTION

A. PURPOSE OF THE FOREST PLAN

This Land and Resource Management Plan (Forest Plan) directs the management of the Lassen National Forest (Figure 1-1) It does not apply to any State, pnvate, or other Federal land mthin the Forest boundaries The Plan's purpose is to gude the integrated protection and use of the Forest's resources, meet requirements of legislation, and address local, regional, and national issues To accomplish this, the Forest Plan

- sets the Forest Goals and Objectives for the next 10-15 years (the planning period),
- sets the Standards and Guidelines, and the approximate timing and location of practices necessary to achieve these goals and objectives, and
- sets the requirements for monitonng and evaluation needed to insure that management direction is implemented and its objectives are met, and to tngger changes in that direction, if needed

Preparation of Forest Plans is required by the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), as amended by the National Forest Management Act of 1976 (NFMA), and the implementing regulations found in the Code of Federal Regulations (36 CFR 219, issued September 30, 1982)

Provisions of the National Environmental Policy Act of 1969 (NEPA) require analysis of a Forest Plan's envlronmental impacts The accompanying Envlronmental Impact Statement (EIS) describes the management alternatives considered for the Lassen National Forest and the environmental effects of each The preferred alternative is identified, which is developed into this Forest Plan The Plan and the EIS are to be considered as a whole, rather than as separate documents

B. RELATIONSHIP TO EXISTING FOREST PLANNING

This comprehensive, integrated Plan applies to all areas and resources of the Forest Therefore, it either supersedes exlsting plans or incorporates them by reference The disposition of each existing plan is shown in Appendur A Where existing plans are incorporated by reference, they must be consistent with Forest Goals and Objectives and other management direction herein As necessary, these plans will be amended to be consistent with the Forest Plan, once it is approved

This Plan also requires preparation of certain resource implementation plans to further define management direction These implementation plans are also listed in Appendur A Note that Congressional designation is required for new wilderness or Wild and Scenic Rivers before implementation plans for these areas are begun

Upon approval of this Plan by the Regional Forester, all land and resource management activities and all budget proposals will be based on the Plan As soon as practicable after approval, all permits, contracts, cooperative agreements, and other instruments for use and occupancy of the Forest's lands will be brought into conformance with the Plan, subject to existing nghts Note that prevlous contracts for timber or other commodities not yet harvested may preclude bringing such activities into full conformance with this Plan.

C. PLAN IMPLEMENTATION

The Forest Plan and resource implementation plans will be carned out by the Distnct Rangers and their staffs Each of the Lassen's three districts covers 12 to 19 "Management Areas". The Plan is compnsed of a set of Forest Goals and Objectives, and Standards and Gmdelines for the Forest and for each Management Area. These

reflect the capability and suitability of the land to support various activities The Distnct Rangers' staffs will plan and conduct resource projects that meet this direction Projects will continue to be planned and evaluated through the interdisciplinary process. District and Forest staffs will conduct environmental analyses and document them in the appropriate environmental documents (such as Envlronmental Assessments), which will be tiered to the Forest Plan EIS (40 CFR 1508.28)

If a proposed project on National Forest land is determined to be incompatible with the direction of the Plan, the project wlll be revlsed **or** not permitted. Conflicts that recur will result in a review of the relevant management direction in the Plan, according to its monitonng and evaluation process (Chapter 5), and may lead to Plan amendment or revision

By the time the Forest Plan is implemented in 1992, budget proposals for 1993 and 1994 will have been subnntted to Congress based on current planning. These budgets may or may not meet budget requirements of the approved Forest Plan. Moreover, Congressional appropriations and allocations of the Chief and Regional Forester during any future penod may or may not meet budget requirements of the approved Forest Plan. In these situations, the Forest Supervisor will change the proposed Plan implementation schedules to reflect differences between proposed Plan budgets and actual appropnated funds (36 CFR 219.10e)

D. MONITORINGAND EVALUATION

The Forest will monitor Forest Plan implementation to determine if it is being implemented as designed (implementation monitoring), if implementation is effective in meeting the Plan's objectives (effectiveness monitonng), and if the Plan's initial assumptions are correct (validation monitonng) Specific monitonng requirements are listed in Chapter 5 of this Plan The Forest will collect and evaluate the monitonng results regularly to determine the need for changes in the Plan An annual monitonng report will be prepared to inform the public on the progress in implementing the Plan.

E. REVISIONS, AMENDMENTS

As directed by NFMA, the Forest Plan mll be revlsed at least every 15 years and ordinarily every 10 years It may also be revlsed whenever the Forest Supervisor determines that conditions or demands, mcludmg the RPA program, have changed sufficiently to affect goals **or** uses for the entire Forest Under a schedule approved by the Chief of the Forest Semce, the Forest Supervisor prepares and the Regonal Forester approves Forest Plan revisions For the purpose of a possible revision, the Forest Supervisor will review conditions of the lands covered by tlns Plan at least every five years

Between Plan revisions, it can be amended to reflect changmg conditions The Forest Supervisor can prepare and approve an amendment if the change is not sigmficant; such changes can be expected annually to adjust some of the Plan's details. If the change is significant, the Forest Supervisor prepares the amendment for Regional Forester approval Public notification and adherence to NEPA procedures are required in either case.

F. PLAN ORGANIZATION

This Forest Plan has six sections.

- Chapter 1 Introduction.
- Chapter 2 *Issues* summarizes the pubhc issues, management concerns, and resource opportunities affecting the Forest, and shows how the Plan addresses them.
- Chapter 3 Summary *of* the Analysis *of* the Management Situation summanzes both the Analysis of the Management Situation (in the planning records) and the EIS Affected Envlronment (Chapter 3) It descnbes the management situation, supply and demand, and the need and opportunity for change in management direction for the vanous resources.
- Chapter 4 Management Direction is the heart of the Plan It contains the Forest Goals, Forest Objectives, Forest Standards

and Guidelines, Prescnptions for particular kinds of land, and Management Area Direction. The Management Area maps show where the prescnptions are applied For an illustration of the hierarchy of Management Direction, see Figure 4-1

- Chapter 5 *Monitoring* sets requirements for monitonng and evaluating both the implementation and the results of the Forest Plan.

- Chapter **6** Appendzces contains a vanety of background and specific program information

G. APPEAL RIGHTS

A Record of Decision (ROD) has not been issued by the Regional Forester to approve this Plan. Because of the number of changes since the draft EIS and Plan were released in 1986, there will be a 60 day public comment penod. Public comments should focus on new or additional factual information regarding the issues or where the analysis may have been incomplete Renewers of this final Plan and EIS must structure their participation dunng the public comment penod so it alerts the Forest Semce to the reviewer's position and contentions This will allow the Regional Forester to meaningfully consider them and respond to them in the ROD.

Upon Regional Forester approval of the Plan in the ROD, the Forest Semce has an internal administrative renew process available to members of the pubhc who wish to challenge a Forest Semce decision **An** administrative appeal of the decision to approve the Lassen National Forest Plan can be filed according to Code of Federal Regulations provlsions **(36** CFR Part 217). Decisions made dunng the Forest planning process pnor to issuance of the Record of Decision are not subject to administrative appeal.

The Planning Records for this Plan (36 CFR 219 10(h)) are available for review at the Forest Supervisor's office and are hereby incorporated by reference into this Plan.

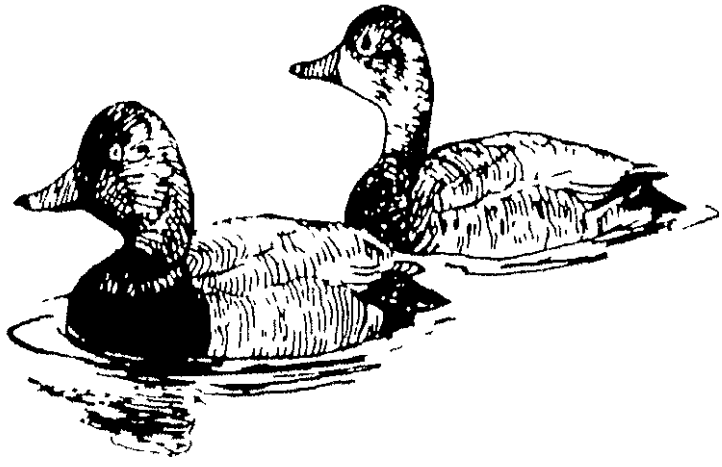
Two copies of the notice of appeal should he sent within 90 days from the date this decision was published in the legal notice section of the Sacra***mento Bee,*** Sacramento, California

Two copies of the notice of appeal must be submitted to

Chief (1570)
USDA Forest Servlce
Auditor's Building
201 14th Street, SW
Washington, DC 20250

Questions regarding this Plan and EIS should be sent to

Forest Supervisor
Lassen National Forest
55 South Sacramento Street
Susanvllle, CA 96130



Public Issues and Management Concerns

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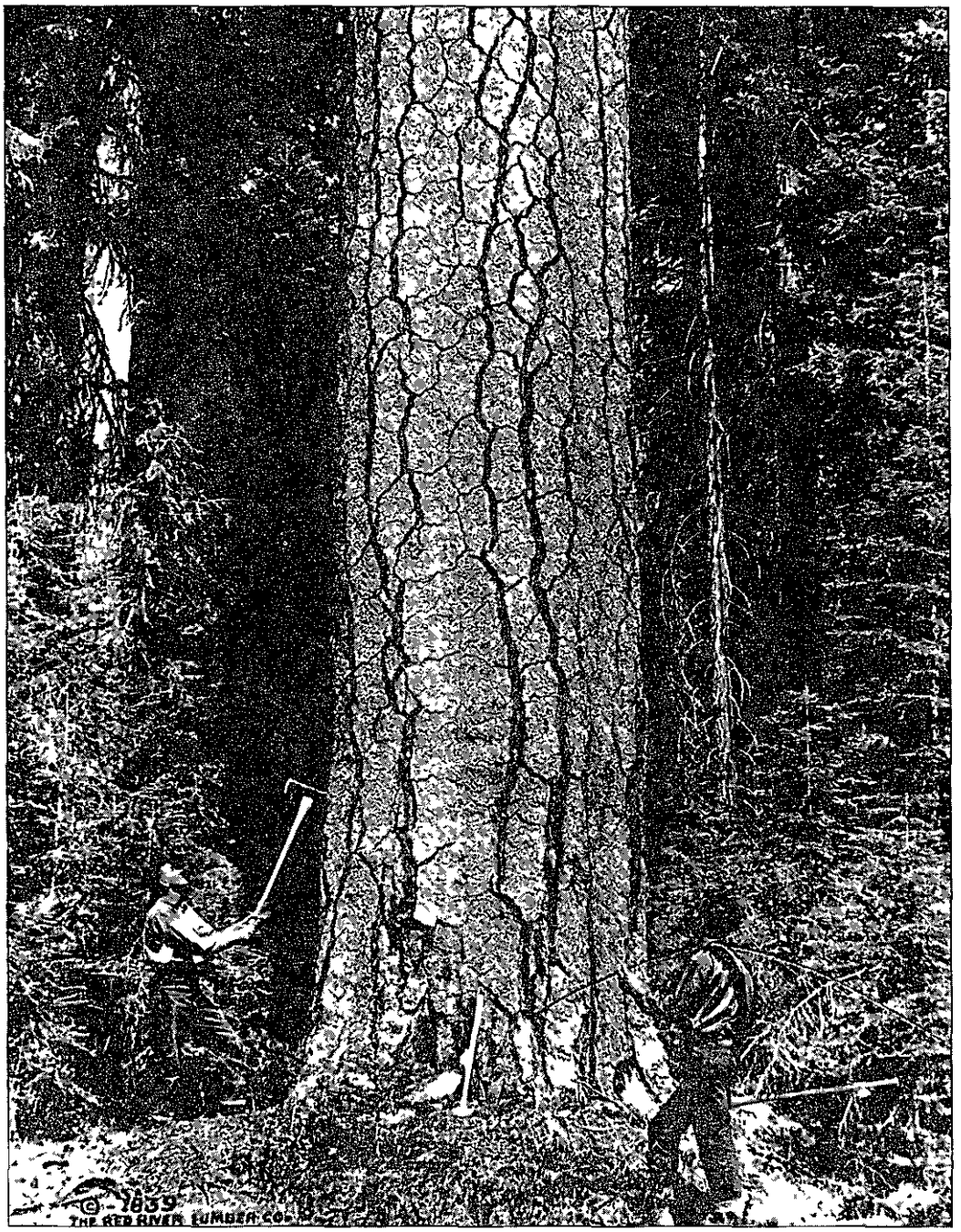


Ponderosa **pine** and fallers

CHAPTER 2 - PUBLIC ISSUES AND MANAGEMENT CONCERNS

In late 1979 and early 1980, the Forest identified issues and concerns through public involvement and Forest Staff suggestions. These public issues and management concerns, raised and addressed by this Plan, fall under the general term "issues" The process of seeking, receiving, and developing these issues is described in the FEIS, Appendix A How each issue is answered with each management alternative is shown in Table 2-19 of the FEIS How the 26 issues are answered by this Plan (the Preferred Alternative from the FEIS) is summarized below.

1. AIR QUALITY How should air quality be protected in various areas from activities on the Forest?

Forest Standards and Guidelines call for compliance with State and local air quality requirements, and minimizing of smoke encroachment from prescribed burning.

2. BIOMASS What kinds and amounts of biomass can be utilized for energy while meeting ecological needs?

A total of about 165,000 tons of biomass will be made available each year as by-products of Forest activities Forest Standards and Guidelines encourage the energy utilization of biomass that is surplus to other needs

3. CULTURAL RESOURCES How should the Forest most effectively provide for protection and interpretation of prehistoric and historical resources, while managing its land for other uses?

Forest Standards and Guidelines call for inventory and protection of important cultural resources and for their interpretation to the public. Management Area Direction gives guidance on protection of specific areas

4. ENERGY How should the Forest be managed and operated to best support local and regional energy needs?

Forest Standards and Guidelines call for continuing energy audit and conservation measures of Forest buildings, vehicles, and equipment. (See the Biomass and Firewood issues for those aspects of the energy picture, and the Minerals issue for energy from geothermal and oil and gas)

5. FACILITIES What transportation systems and other facilities should be established and maintained on the Forest to provide for management needs?

The Plan specifies the average road mileage **(66** miles) and trail mileage (3 5 miles) to be constructed or reconstructed per year It also requires the maintenance of the systems in a cost-efficient manner, and directs the maintenance of dams and administrative sites More specific guidance on constructing and maintaining facilities (such as roads) appear in the Forest Standards and Guidelines, Management Prescriptions, and Management Area Direction.

6. FIRE AND FUELS What fire management and fuel treatment programs will best protect life, property, and environmental quality while assisting in resource management?

Forest Standards and Guidelines give general direction on cost-effective fire suppression, prevention, and fuels management including prescribed burning Each Management Prescription gives direction on fire suppression strategy, acres allowed per fire, and acceptable acres burned, and gives guidance on fuel loadings and prescribed fire use. The Plan calls for about 6,050 total acres of fuel treatment per year through prescribed burning

7. FIREWOOD How can a sustained supply of firewood be provided and what should be the priorities in its allocation?

The Plan expects about 69,000 cords of firewood to be available per year, and assigns 8,200 acres of lodgepole pine to firewood management In addition the Plan gives personal use of firewood priority over commercial and industrial uses,

and reqmres measures to keep areas accessible to firewood cutting.

8. **FISH** What productivlty, quality, and diversity of fish habitat should be provlded and protected?

The Plan lists the amount of resident and anadromous fish expected to be produced on the Forest Forest Standards and Guldelines require maintenance of fish habitat; Management Prescnptions and Management Area Direction specify extra protection and enhancement of habitat in key areas

9. FOREST HEALTH What biologxal pests affect timber and other resources on the Forest, and what pest management methods should he used?

Forest pests are identified in the FEIS Chapter **3,** Affected Envlronment. Forest Standards and Gmdelines call for use of integrated pest management to reduce impacts of forest pests.

10. GEOLOGY What significant geological features are there on the Forest and how should they be developed, protected, or interpreted?

Forest Standards and Guldelines require geological inventones where needed. Three new Geological Special Interest Areas are classified (designated) in the Plan. They are the Black Rock, Crater Lake, and Deep Hole Special Interest Areas

11. LANDS How should the Forest coordinate land use practices with adjoining public and pnvate landowners, and to what extent should it reduce possible conflicts with intermingled lands by implementing land ownership adjustments?

Forest Standards and Guidelines give direction on landowner coordination, land ownership adjustment planning, rights **of** way, land withdrawals, special use permits including small hydroelectnc projects, utility corridors, and unauthorized occupancies Management Area Direction lists specific land adjustment opportunities

12. LAW ENFORCEMENT What priorities and strategies should be followed in the enforcement of laws on the Forest?

Forest Standards and Guldelines pnontize the types of law enforcement and resource protection opportunities

13. MINERALS How should mineral development activlty be encouraged while protecting surface resources?

Forest Standards and Gmdelines encourage mineral (including energy) development while ensunng protection of surface resources. The Plan lists cntena for denying energy leasing and **for** conditional leasing It also gwes direction on mineral withdrawals

14. RANGE Where, how, and with what range improvements should livestock grazing occur on the Forest?

The Plan sets the level of livestock grazing at 48,500 AUMs per year, and lists Forest Standards and Guidelines that provlde for protection of other resources The Management Prescriptions further specify livestock management measures, and Management Area Direction gives the management strategies for each allotment.

15. RECREATION What types of recreation facilities and opportunities should be provided on the Forest, and in what amounts, proportions, and locations?

The Plan sets the level of developed recreation (mainly campgrounds) at about 820,000 recreation vlsitor days (RVD's) per year, and provldes other land for different types of dispersed recreation, totalling about 400,000 RVD's per year How the Forest will provlde a vanety of recreation opportunities is answered generally by the Forest Standards and Guidelines and more specifically by the Management Prescriptions. Management Area Direction provldes guidance for managing specific units of land such as dispersed campsites, recreation residences, and snowmobile parks.

16. SENSITIVE PLANTS What Sensitive plants grow on the Forest and how should they be preserved?

The Sensitive plants are identified in the Plan Chapter **3,** section 16 Forest Standards and Guidelines require protection of all Sensitive plant habitat on the Forest

Management Area Direction requires inventory and protection of Sensitive plants where believed to occur.

17. SOILS How should the Forest soil resource be protected and where should it be enhanced?

Forest Standards and Guidelines prohibit irreversible loss of soil productivity and require restoration of degraded areas. Management Area Direction requires protective measures in specific problem areas The Plan calls for opportunities to enhance soil productivlty to be assessed in the future

18. SPECIAL AREAS Should management of existing special areas on the Forest be changed? Should additional special areas be established for unique resources, and if so, where should they be located and how should they be managed?

The Plan continues current management of existing special areas It recommends six candidate Research Natural Areas, classifies (designates) seven Special Interest Areas, and requires management to protect the natural values for which they are established Locations are shown on the Management Area Maps

19. TIMBER Where and how should the Forest manage its timber resources, while providing for other resource values such as ecological diversity and recreation?

The Plan sets the amount, type, location, and timing of timber harvests Approximately **342,040** acres are available for intensive timber management production An additional **254,301** acres are available for timber production on a very limited basis Annual harvest will average 96 million board feet, rising to **113** million board feet in five decades, using even-aged management as the preferred silvicultural system, and reforesting an average of 3,600 acres of regeneration units per year Rocky and sparse timber lands (about 26 percent of the suitable acres) will receive only selection harvest

Plantation precommerical thinning and weed control will be conducted on 2,800 acres of plantation per year In addition, an estimated 1,900 acres of existing wild stands will be precommercially thinned per year during decade 1 Commercial thinning of naturally regenerated stands to improve stand vigor will produce both board feet (lumber) and tons of biomass Approximately **4,000** acres per year will be commercially thinned dunng decade 1

Forest Standards and Guidelines give measures to protect soil, vlsual, wildlife, and other resources Management Prescriptions list the type(s) of timber harvesting emphasized and the type(s) permitted on a given type of land

20. VEGETATION AND **ECOLOGICAL DIVERSITY** Where and how should the Forest manage its vegetation resources over time, to maintam diversity while provlding other resource outputs?

Forest Standards and Guidelines require adequate vegetation and ecological diversity conditions to support wildlife, scenic quality, and other needs Older-aged stands are maintained by implementation of a late-successional stage vegetation prescription Many timbered and non-commercial timbered areas will receive prescnptions that manage timber at less than full intensity, thereby providing high levels of diversity elements such as snags, dead and down wood, and hardwoods Prescnbed burning in non-timbered types will maintain a diversity of age classes Significant examples of major vegetation types will be maintained in Research Natural Areas

21. VISUAL QUALITY What visual quality objectives should be maintained on the Forest?

The Plan assigns visual quality objectives to the Forest, as mapped on the accompanying Adopted Visual Quality Objective Map, and requires that management activities meet or exceed them Management Prescriptions give guidelines on how to accomplish this for each visual quality objective Management Area direction emphasizes the above direction for specific points of interest such as the Pacific Crest Trail

22. WATER How should watersheds on the Forest be managed to protect and enhance water quality and quantity?

Because most Management Areas are discrete watersheds, the combination of Management Area Direction (including scheduled activlties)

and Management Prescnptions best define what actinties will occur in that watershed Forest Standards and Gmdelines direct that "Best Management Practices" be applied to protect water quality and that a cumulative watershed impact analysis be performed for such activities in watersheds containing Class I fishenes. They also require maintenance of nparian areas and compliance with Federal, State, and local water quality standards The Plan allocates the Riparian/Fish Prescnption to most bodies of water on the Forest (except for special areas).

23. **WILD AND SCENIC RIVERS** What nver segments should be recommended for inclusion in the Federal Wild and Scenic River System?

The Plan recommends designation of Mill Creek, Deer Creek, and Antelope Creek as Wild and Scenic Rivers and directs their interim management pending designation by Congress (These recommendations are preliminary and will receive renew and possible modification by the Chief of the Forest Service, the Secretary of Agnculture, and the President)

24. WILDERNESS *AND* FURTHER PLANNING AREAS How should the Forest's three existing Wildernesses be managed to maintain their wilderness character, and how should the Forest's six further planning areas be allocated and managed?

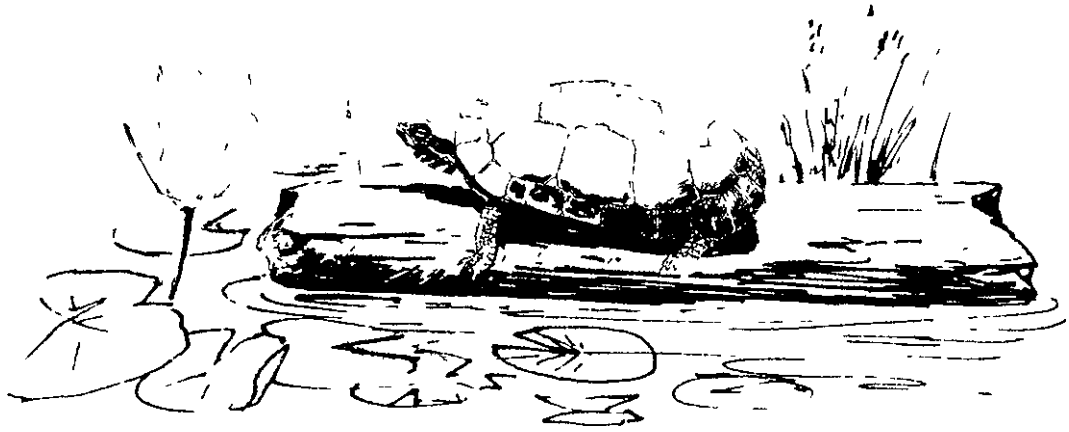
The Plan recommends three of the further planning areas and a portion of a fourth as new wilderness, and the remaining areas for non-wilderness (The wilderness recommendations are preliminary and will receive review and possible modification by the Chief of the Forest Semce, the Secretary of Agnculture, and the President. Congress establishes wilderness) The Wilderness Prescription gwes direction on management for existing and proposed wilderness, to be supplemented by Wilderness Implementation Plans for individual wildernesses

25. WILDLIFE What type, amount, and diversity of wildlife habitats should be provided through time on the Forest?

The Forest Plan gives projected populations for keywildlife species. Forest Standards and Guidelines require the protection of Threatened and Endangered species and their habitat and maintenance of habitat for species dependent on snags, cavities and down logs, maintenance of habitat for viable populations of spotted owls (40 pairs), goshawks (113 pars), fisher, and marten, and cooperation with other agencies and coordination with other resource projects Management Prescnptions specify which mldlife species are provided for, which habitat practices are emphasized, and which are permitted Management Area Direction lists species to be emphasized and any special measures to protect or improve habitat

26. SOCIO-ECONOMIC What are the costs, benefits, and socio-economic effects of management of the Forest?

Plan Chapter 3, sections B and C, and FEIS Chapter 3, Affected Environment, descnbe the economic and social environment, and FEIS Chapters 2 and **4** give the economic and social effects of each alternative including the Preferred Alternative (this Plan)



Summary of the Analysis of the Management Situation

3

Cooperative efforts to re-plant the Lost Fire

CHAPTER 3 - SUMMARY OF THE ANALYSIS OF THE MANAGEMENT SITUATION

A. INTRODUCTION

This chapter summanzes the Analysis of the Management Situation (AMS), a set of documents that examines the existing situation for each resource on the Forest The AMS is part of the Planning Records

Descriptions for each resource are in Chapter 3, Affected Environment, of the accompanying Final Envlronmental Impact Statement In contrast, this Chapter focuses on the management implications of these resources Future management direction provided for each resource by this Forest Plan is summarized in the previous chapter Sections B and C below descnbe the economic and social envlronment, followed by management descnptions of the resources in alphabetical order Unless otherwise noted, the descnptions below refer to the geographical area of the Lassen National Forest itself, not the region or State

B. ECONOMIC ENVIRONMENT

The Forest's impact counties are Butte, Lassen, Plumas, Shasta, and Tehama Counties Portions of the Forest also lie in Modoc and Siskiyou Counties, but its influence on them is slight The five impact counties are significantly affected by timber, range, mldlife, and recreation actinties on the Forest, as well as by its direct employment

1. Population

The impact counties' population has grown substantially in the past two decades—an average annual rate of 3 7 percent from 1970 to 1989 Future growth is expected to average 2 0 percent per year through the year 2000 People moving into the area, pnmarily urban emigrants and retirees, account for over three quarters of both past and future growth

2. Employment

The economy of the area has been dominated by four employment sectors government (26 percent of the workforce), services (20 percent), retail trade (20 percent), and manufactunng (11 percent) Trends show a decreased reliance on National Forest-related industries for employment Unemployment in the impact area has remained significantly higher than both State and national averages The influx of people has broughtmorejob-seekers than the economy could absorb, and the seasonal nature of many timber, recreation, and tounsm related jobs has also raised the unemployment rate Reduced employment has resulted in reduced per capita income compared to the State and national averages

3. Economic Role of Forest

In addition to resource production, the Forest contnbutes directly to the local economy primarily through the Forest Reserve Fund payments and its own budget.

Forest Reserve Fund (FRF) The Forest receives revenues from timber sales, grazing fees, campground fees, mineral permit fees, and land use fees About 98 percent of its revenues are from timber sales Twenty-five percent of a Forest's gross revenues go into the Forest Reserve Fund, which is returned to the counties in which the Forest is located The dollars are split equally between county road and school programs Forest Reserve Fund payments fluctuate sharply from year to year, but represent a very important income source for county government The Forest returned about $3 1 million in FRF payments in 1982, and $6 9 million in 1990

Forest Budget In 1982 the Forest employed over 300 permanent employees and more than 150 summer (seasonal) employees, who contribute to the local economy In the summer of 1990, the Forest employed 234 permanent employees and 193 seasonal employees for a total of 427 people The Forest also spends many thousands of dollars each year in the local economy for a

variety of purchases and contracts The total Forest budget was around $12.3 million in 1982 and $16 *0* million in 1990

In addition, the Forest contnbutes indirectly by provlding timber for harvesting and milling, range forage for livestock operations, and recreation opportunities €or tourist business, etc

C. SOCIAL ENVIRONMENT

1. Social Groups

The Forest plays an important role in the lives of residents of the impact area Long-time residents and newcomers alike prefer the natural setting and resources that the Forest provldes All social groups utilize the Forest for recreation and firewood, but the groups differ in several other land management demands and issues. The four social groups and their relationship to Forest management are summarized below

Ranchers Once dominant in all aspects *of* the local economic, political, and social structure, ranchers still form the core of many local communities They still have strong ties to the Forest's lands and rely on them **for** range, wood, and water, as well as wildlife and fish Traditional ranchers prefer to preserve their rural lifestyle and retain local control over management of the Forest's commodity and amenity resources

Timber Industry Workers Like ranchers before them, the timber industry also once dominated the local economy. The industry depends directly and heavlly on the Forest Its workers include loggers, mill workers, managers, and small business operators Increased competibon for jobs in a depressed lumber market is causing unemployment and threatening economic sumval of small loggmg operators Industry workers favor intensive and efficient timber production and development of the Forest commodity values. Secondarily they value its recreational opportunities, especially hunting and fishing

Government Workers Public employees are a diverse group Attitudes and values include those of the other groups, but in general government workers share an interest in public policy and Forest management, in protection of its amenity resources, and in orderly economic development. The government sector since 1980 has been by far the largest employer, totaling **27** percent *of* the workforce in the impact area, including 49 percent in Lassen County

Urban Emigrants Within the last two decades urban emigrants have greatly modified the local communities. They are drawn from most other social groups and mclude retirees, second-home owners, professionals, small businessmen, government workers, and craftsmen Mosturban emigrants favor the amenity aspects of the Forest over the commodity aspects, and expansion of recreabonal opportunities **An** activist component of this group has deep concerns for envlronmental preservation, participates in political circles, and demands more involvement in Forest policy decisions.

2. Minorities/Ethnic Groups

The racial and ethnic make-up of the impact area is predominantly white (88 percent) Persons of Hispanic origin constitute the largest ethnic minonty group (6.6 percent), while Native Americans constitute the largest racial minority group (two percent). Most minority employment is in resource-based industnes, often seasonal.

All ethnic and racial groups depend on the Forest for recreation, firewood, and as a component *of* the rural lifestyle.

Native Americans Descendants of several indigenous hunting and gathenng groups, Native Amencans retain a distinct set of attitudes and beliefs alongmthlong-standmgties to the Forest Some Native Americans gather traditional natural products from Forest lands, and certain localities are used **for** the practice of religious ntes Native Amencan groups and individuals have, therefore, expressed strong concerns about Forest management in the past Threats to their cultural hentage, such as timber harvest or energy development in significant areas, will incur responses in the future Native Amencans are also often employed in the timber and agriculture industnes

D. RESOURCE ENVIRONMENT

1. AIRQUALITY

a. Current Management

The Forest complies with State and county air quality protection standards It is considered an "attainment" area because it meets or exceeds the National Ambient Air Quality Standards (NAAQS) mandated by the Clean Air Act of 1963 as amended. The Canbou, Thousand Lakes, and Lassen Volcanic Wilderness Areas are designated as Class I areas, allowing no degradation in air quality The remainder of the Forest (including the Ishi Wilderness) is Class II, allowing some reduction To achieve compliance, the Forest adopts mitigations for projects that create particulate matter Timber purchasers are required to control dust on logging roads (water is usually applied, but chemcal dust treatments are increasingly being used) Prescribed burning is timed so that smoke does not exceed air quality standards or contnbute to exceedingthem Overall,the Forest's air quality is high and not impaired significantly by activities on the Forest

b. Opportunities

The Forest can, without constraining other resource activities, continue to meet and exceed air quality standards and protect the clean, fresh air most vlsitors expect from a National Forest

2. BIOMASS

a. Current Management

In this context, the term biomass refers to the entire above ground part of trees. This resource is one of increasing interest on the Forest Once a discarded by-product of loggmg or thinning, biomass now has growing value as fuel both for home heating (see Firewood section below) and for generating electncity

The Forest has added provlsions to timber sale contracts that facilitate removal and use of biomass matenal The Forest Semce has adopted a National policy gtvmg preference to personal use firewood gatherers over industrial users in the allocation of biomass Firewood gatherers and biomass utilizers favor different types and locations ofwood matenal Demand for both has not exceeded supplies, and competition for firewood and biomass is not expected

b. Supply

The Forest can sustain a supply ofwood residues from both timber sales and thinning operations. The maximum theoretical supply under present silvicultural practices is 165,000 oven dry tons per year m decade 1 In reality, access difficulties would make the practical supply somewhat less

c. Demand

Eleven wood-fired cogeneration plants currently operate on or near the Forest, and require over one million oven dry tons of biomass per year. Supply for this demand comes from mill waste as well as National Forest and pnvate ownership forestry operations

d. Opportunity

Recently, the Lassen has designed many forestry operations which make biomass available Examples include stand tending activities designed to thin overstocked plantations and natural stands, fire salvage; and slash cleanup following timber sale harvest Opportunity exists to increase biomass supply while still meeting the demand for personal use firewood.

3. CULTURAL RESOURCES

a. Introduction

Cultural resources include structures, sites, areas, and objects that have scientific, historic, or cultural value. The Forest cultural resource overview (in the Planning Records) provldes a detailed description of past human occupation and use of the Forest Prehistoric sites include villages, camps, tool manufactunng sites, plant processing locations, and hunting stations Cabins, loggmg camps, emigrant trails, and wagon roads are common historic sites and features on the Forest Remnants ofthe histonc Lassen and Nobles Emigrant trails are still visible as they

cross the Forest. Sites associated with particular ethnic groups include Native American spiritual and resource gathering areas, Basque aspen carvings, and Chinese mining camps Of particular significance is the homeland of Ishi, the last Yahi Yana Indian

b. Current Management

The Forest manages cultural resources that may contribute to our understanding of the region's cultural history and the lifeways of its past human occupants Cultural resources associated with traditional values of contemporary Native Americans are also managed.

The Forest identifies cultural properties in conjunction with resource management projects such as timber sales Through the envlronmental analysis process, project managers develop and apply mitigation measures to protect cultural resources The Forest consults with the State Historic Preservation Officer and the Advisory Councilon Historic Preservation regarding treatment of significant resources. Options include protection, preservation, documentation, restoration, or data recovery If necessary, projects are modified to preserve the cultural resources or to mitigate effects on them. Certain key areas are excluded from most Forest management activities to protect their unique cultural values

c. Cultural Properties

With about **48** percent of the Forest inventoried, 1,788 cultural properties have been identified Of these, 60 have been evaluated for their eligibility to the National Register of Histonc Places. One area (the 11,500 acre Lake Britton Archaeological District) is on the Register An estimated 3,000 cultural properties have not yet been identified The major deficiencies in information include the identification of cultural properties in non-forest environments and understanding the contnbution cultural properties make to our knowledge of human behavior

d. Opportunity

The Forest has an opportunity to develop a program to effectively manage cultural resources Such management will require (1) the identification of cultural properties outside of project areas, (2) the maintenance of their scientific, historic, and cultural values, (3) the scientific study of cultural resources to enhance our understanding of human behavior; and **(4)** providing information to the public on our cultural heritage

Archaeologxal research has focused on the prehistoric occupations of Eagle Lake, Mill Creek, the Pit River, and the meadow that is now Lake Almanor. Local Native Amencans interested in maintaining their unique cultural and spiritual heritage show stronginterestin preserving associated sites on the Forest. Such interests are expected to increase. However, natural deterioration, looting and vandalism continually reduce the Forest's cultural resources, and only limited means are available to prevent such losses as well as to interpret the resources to the public More protection and public information would help reverse the situation

4. ENERGY

a. Current Management

The Forest's energy resources fall into eight categories Hydroelectric, wind, solar, and consumption are discussed in this section Geothermal, oil, and gas are descnbed in the Minerals section, and wood-based energy in the Firewood and Biomass sections Utility corndors needed to transmit the energy are discussed in the Facilities section

Hydroelectric Hydroelectric power is the main energy resource associated with the Forest Nine hydroelectric facilities are on or near the Forest, and another is partially dependent on water flowing from the Forest In addition, many applications have been filed for new "small hydroelectric" facilities since passage of the Public Utilities Regulatory Policy Act of 1978 (PURPA). The Federal Energy Regulatory Commission (FERC) processes these applications as they are filed, and the Forest Servlce responds to each by provlding FERC with measures to mitigate any project's effects The Forest also conducts an envlronmental analysis and may issue a special use permit for hydroelectric facilities, and an easement for a power transmission line Forest Service policy is to cooperate with FERC, other Federal and State agencies, and developers in

helping realize the hydroelectric potential of water flowing from National Forest lands The Forest Semce is also responsible for ensunng that proposed projects comply with environmental laws and policies for National Forest lands.

Wind The only wind power facilities on the Forest are several windmills used in rangeland water projects No private or government efforts have attempted to generate electncity from wind, although some sites are theoretically feasible.

Solar The Forest has photovoltaic solar systems on three of its fire lookouts, and some solar-powered electric fences have been used on grazing allotments Other uses of solar power remain undeveloped

Consumption and Conservation Management actinties on a National Forest consume substantial amounts of energy — gasoline, diesel, heating oil, propane, and electncity. Federal law requres a reduction in energy consumption for general Forest administration and a retrofitting program for Forest buldings. The Forest's vehicle fleet must also meet fuel efficiency standards. Each Forest-related activity has a value both for energy consumption and for energy yleld. Livestock grazing, and biomass and firewood utilization have positive net energy ylelds. Recreation, road construction, and general administration have negative net ylelds Opportunities to decrease energy consumption include improved road design to reduce logging truck fuel use, retrofit of buildings, and selection of fuel-efficient fleet vehicles The Forest is taking all measures listed, wherever appropnate.

b. Supply

Hydroelectric The ten hydroelectnc projects amount to less than two percent of California's total electrical production. About **36** applications have been received since 1981 These applications were processed, and many were eliminated for a vanety of reasons, including competition for the same water source, environmental concerns, and proponents voluntanly surrendering their applications The remaining applications were processed by FERC and the Forest Servlce Construction of approved small hydros was completed when the Lost Creek hydros were built in 1990. A few projects would be precluded by any Wild and Scenic River designation of Deer, Mill, or Antelope Creeks Hydroelectnc facilities will not be recommended on Hat Creek

Wind Several areas of the Forest, mainly exposed ndges, are classified "excellent" for wind power because they offer a mean power density greater than 28 watts per square foot at a wind speed of **14** miles per hour However, access, facility development, and electrical transmission costs appear prohibitive

Solar Overall, the Forest ranks "medium" in its sutability for solar power Again, associated costs appear prohibitive for development beyond what exists.

Consumption and Conservation The general administration of the Forest consumes about **42** billion Bntish thermal units (BTU's) a year, of which 55 percent is for vehicles and **45** percent for buildings.

c. Demand

Hydroelectric Demand for renewable energy such as hydroelectnc power is expected to increase along with the State's population and energy prices While most of the suitable sites for major hydroelectnc plants are already developed, potential sites for "small hydro" facilities are theoretically numerous Filings for such projects increased sharply after the passage of PURPA in 1978, but have recently dropped off.

Wind Demand for wind energy is not significant and is not expected to become so, even with projected increases in population and energy costs.

Solar Demand for solar energy has been limited to Forest Servlce fire lookouts. Photovoltaic solar energy could be used in retrofitting other lookouts and remote administrative sites, but large-scale uses are not expected. Solar water heating systems could be constructed at government facilities and would provide long-term savings

Consumption and Conservation The Forest can meet applicable energy efficiency targets For discussion of energy conservation potential, see Chapter **4,** section G in the accompanying Environmental Impact Statement

5. FACILITIES

a. Introduction

Forest facilities include roads, trails, utility corndors, buildings, sewer and water systems, dams, and major stream crossings Each is discussed separately

b. Roads

Of the **4,732** miles of roads on the Forest, the Forest development road (FDR) system has **3,472** miles, and State, county, and pnvate roads comprise **1,260** miles The combination of these systems provldes public access for administration and movement of goods from and across National Forest lands The Forest works with State and county agencies to insure that, as provlded in cooperative agreements and memoranda ofunderstanding, design and maintenance standards match with probable National Forest-generated use levels In **1982,** the Forest identified seven county roads that met the cnteria for Forest Highway designation and needed improvement to better serve Forest users. Four roads were completed or dropped Three are still in the Forest Highway inventory for future work consideration.

The National Forest contains **361** mles of artenal roads, most of which are State Highways (eg **32, 36, 44,** and **89)** It has **464** miles of collector roads, most of which are Forest developed roads that are generally unpaved and constructed to meet multiple resource needs Approximately **3,907** miles of local roads are unpaved and usually built for timber sales Additional uses include timber sale improvement, fire protection, firewood gathenng, and dispersed motonzed recreation In addition, the Forest contains approximately 500 miles of uninventoried roads As projects are planned in areas including these roads, Forest managers will determine whether to add them to the Forest development road system, or to obliterate them

The Forest development road system receives regular maintenance to prevent resource damage Each road or road segment is assigned one of five maintenance levels commensurate with traffic management and use objectives All system roads are maintained to at least maintenance level **1** (custodial care) Forest Servlce policy is to maintain roads at the minimum level necessary for recreation, resource use, Forest administration, and protection of adjacent areas Commercial users of Forest roads share in costs for their maintenance Where roads are jointly-owned, the Forest Service and the other owner usually exchange easements and nghts-of-use through maintenance agreements The agreements provide that each party will cooperatively maintain and preserve the road to original standards

The arterial road system needs upgrading to handle traffic demand The collector road system is generally adequate The local road system may be expanded to meet projected timber sale demands. Biomass gathering for wood-burning power plants could put additional demands on the Forest's road system Road maintenance objectives may need adjustment to mitigate conflict between timber, recreation, biomass, and firewood traffic

c. Trails

The **465** miles of developed trails consist of **30** miles of National Recreation Trails, **125** miles of Pacific Crest Trail, and **310** miles of other trails Trail use totals about **30,000** recreation visitor days per year. While the trails are generally kept open for safe use, not all meet desired standards

There is a current need for construction of additional trail miles in designated wildernesses, and further planning areas if these are added to the wilderness system Trail development is also needed for dispersed non-motonzed and motorized recreation In some cases trails can be located over existing roads (e.g winter snowmobile trails) Trailhead construction to support the new trail systems will be required

d. Utility Corridors

The Forest has about **82** easements or special use permits that allow utility lines to cross National Forest lands Each right-of-way is between 10 and **40** feet wide Two major utility lines will be constructed in **1991-1993,** both crossing a small portion of the Shasta National Forest that is administered by the Lassen National Forest There is very little opportunity to consolidate these utilities into common corndors The West-

ern Regional Corndor Study for the State of California has identified a potential need for an east-west utility corndor through or near the Forest, for further discussion see the Lands section of this chapter

e. Buildings, Water and Sewer Systems

The Forest has about 81 buildings totaling over 108,070 square feet Forty-eight percent of the Forest's buildings are over 35 years old Replacement of some structures has occurred, but maintenance costs on the remaining older buildings remains significant.

The 81 buildings are located on nine administrative sites In addition, the Forest leases two buildings (the Supemsor's Office, shared by the Eagle Lake Distnct, and the Hat Creek Distnct Office) from pnvate parties This leasing requires less capital investment, but significantly increases annual costs for office space Constructing Forest-owned buildmgs for these offices would provlde significant long-term savings to the Government By 1993, a Forest-owned office for Eagle Lake Ranger Distnct will be constructed on National Forest land at the intersection of County Road A1 and Highway 36.

Each administrative site has a domestic water system and sewage disposal system Most are as old as the structures they serve, and are reaching the end of their design life Meeting current health and safety requirements is becoming costly, and replacement may be needed to protect employees and other users Cost-efficient energy retrofitting opportunities have been identified on Forest buildings, and some are underway

f. Dams

Of the 19 dams on the Forest, seven serve hydroelectric plants and are inspected by the State The remaining 12 dams were constructed for livestock and wildlife water reservoirs They are inspected and maintained by the Forest Maintenance of these dams is needed to prevent damage to streams and downstream structures such as culverts Depending on wildlife, range, and road building needs, an estimated six new dams will be constructed within 10 to 20 years

g. Major Stream Crossings

The Forest has 18 road bridges, ten trail bridges, and 68 major structures such as culverts and large corrugated arches over streams. Each requires regular maintenance to protect capital investment, provide safe crossing, and protect fishenes Most needed stream crossings are in place, potential additions will depend on future resource actinties

6. FIREANDFUELS

a. Zntroduction

Fire has shaped the Lassen area for the past 10,000 years Pnor to 1900, wildfires burned freely. In the past 80 years, fire suppression efforts have become increasingly effective in putting out unwanted fires. The use of fire as a management tool has also increased significantly in the past decade

b. Current Management

Federal law requires the protection of Forest resources by well planned and executed fire protection and fire use programs The Forest is responsible for wildfire protection on **933,000** acres of National Forest lands, and on 280,000 acres of private land through agreement with the California Department of Forestry (CDF). In turn, about 274,000 acres of land administered by the Forest are protected by CDF

Lightning during summer and fall causes 70 percent of the Forest's wildfires. The remainder are caused by humans — arsonists, hunters, anglers, campers, and other Forest users. Dunng the 1970's, an average of 98 fires burned about 157 acres per year. Only 18 fires dunng the decade were of significant size. one in 1973 burned 264 acres and claimed one life, another in 1977 burned 820 acre3 of timber Also during that decade, major wildfires burned tens of thousands of acres on neighboring Forests and private lands, and three burned onto the Forest from outside This fire history demonstrates the potential for wildfire on the Forest. The past five years have been hot and dry Wildfires have been frequent, but are normally small Exceptions are the 23,000 acre Lost Fire in 1987, the 750 acre Campbell Fire in 1988, the 400 acre Feather Fire

in 1989, the 300 acre Gulch Fire in 1990, and four large fires in 1990 a different Campbell Fire (180,000 acres of which 38,000 were on National Forest land), the Finley Fire (totaling 23,700 acres with 2,400 acres on National Forest land), the Day Fire (3,300 acres with 510 acres on National Forest land), and Long Valley Fire (570 acres)

Prevention, detection, presuppression, suppression, and fuels management are the five programs in fire protection Prevention includes public contacts, law enforcement, building inspection, and patrols. Detection activities are carried out through use of fire lookouts and aerial (aircraft) surveillance Presuppression involves arranging for fire forces, training, equipment, and structural improvements before they are needed Suppression includes firefighting activities with hand crews, engines, helitack, retardant aircraft, etc Fuels management prevents or reduces fires by removing or rearranging logging slash, brush, or other accumulations of burnable material

Approximately $16 million is spent annually on the Forest's fire and fuels program. Other agencies and private parties cooperate with the Forest to supplement the effort The Susanville Interagency Fire Center (SIFC) is shared by the Forest Service, Bureau of Land Management, Lassen Volcanic National Park, and California Department of Forestry SIFC dispatches suppression forces, monitors air operations, and coordinates other fire operations for all agencies jointly The Forest's major responsibility is wildland fire, but Forest Service crews may respond to structure (building) fires to prevent escape to wildland resources or threat to human life

Although the number of suppression crews has decreased in recent years, each of the three ranger districts maintains two or three "outstations" for fire engines and suppression crews In addition, the Chester air base supports an air tanker, air attack plane, and helitack crew A 20-person Regional Hot Shot firefighting crew resides at the Bogard work center, and four to six mountain-top lookouts are staffed each summer

The Forest conducts prescribed burns on about 6,400 acres a year **An** estimated 5,400 acres are burned to dispose of logging and thinning slash or to prepare areas for timber or range regeneration The remaining 1,000 acres are burned to reduce hazardous brush accumulations, improve wildlife habitat and livestock forage, or to increase water yields Prescribed fire has recently been used in the Caribou Wilderness as part of a Forest Service effort to return fire to its natural role in the ecosystem, its use is being studied and may soon be allowed in the Ishi and Thousand Lakes Wildernesses as well

In cooperation with CDF and adjacent landowners, the Forest conducts prescribed burns on hundreds of acres each spring in the front country near lower Deer Creek Similar opportunities exist in chaparral areas of the Hat Creek District Prescribed fire is just one strategy in fuels management, timber sales provide the primary opportunity The Forest also treats excess fuels (both activity-caused and natural) by rearranging it into less flammable configurations, or utilizing it for products such as posts, chips, fuelwood or biomass The objective is to reduce the potential for a damaging wildfire

c. Opportunities

As the value of, and demands for, forest resources increase in the future, the need for their protection through fire and fuels management will also increase Even-aged timber management will create more acres of fire-susceptible conifer plantations These will depend on a higher level of effective fire management programs if they are to survive to maturity Rural residence and subdivision development adjacent to Forest lands will increase fire potential, as will increased Forest recreation The Forest has the opportunity to increase prevention and protection measures, including improved public education and hazard reduction on both Forest and private land Utilization of prescribed fire can protect the resources as well as increase their productivity

7. FIREWOOD

a. Current Management

One of the issues of public interest on the Forest is firewood Many local residents depend on wood from the Forest and adjacent lands to heat their homes in the winter Forest policy is to insure that firewood is available to meet demands for personal use Cutting is administered

under two different permit systems, one covering personal use and another for commercial use The Forest takes steps to provide more woodcutting opportunities by keeping roads open after a timber sale, and by opening free-use cutting units In 1983, the Forest began charging a $5 per cord fee to cover expenses of administering the personal use program In the commercial program, small amounts of green timber are offered for sale by bid to firewood dealers.

Illegal firewood harvest is a continuing problem, and as vehicles progress off-highway into more remote and difficult terrain, associated resource damage results

b. Supply

Firewood gatherers depend mainly on dead and down wood—typically standing snags, blowdowns, logs in cull decks, and other logging residue. However, cull decks are increasingly being purchased outright; efficient logging techniques are reducing residues after harvesting, and blowdowns are a fluctuating source often removed for sawtimber in salvage sales Therefore, snags are the main source of firewood Pine, especially lodgepole, is most popular, followed by cedar. Oak is rare, but highly valued Snag availability is limited by retention for wildlife (signed or firewood permit restrictions), steep slopes, and lack of road access.

Lodgepole pine stands produce the most firewood in the form of bark beetle-killed snags As standmanagementintensifiesm the future, however, the rate of beetle-kills and associated availability for firewood will decline

c. Demand

Demand for firewood was slight until the fuel shortage of 1973-74. Since then, personal use on the Forest has increased over 500 percent. The number of permits leveled off by 1981, and in 1983 the $5 charge was instituted However, non-local demand (much of it commercial use from the Reno, Nevada area) has continued to climb rapidly, and now amounts to about 25 percent of the total Both local and non-local demand are expected to increase with the population growth rate and energy costs

d. Opportunities

Construction of wood-fired power plants near the Forest has raised public concern about competition between firewood and biomass utilization Studies indicate adequate supplies for both uses, since biomass operations harvest different types of material than the snags which woodcutters depend upon Conflicts may arise over other desirable types, locations, and availability of firewood. Under the Forest Service policy of giving priority to personal uses of biomass, the Forest can continue to provide an adequate supply of accessible material for firewood gatherers.

8. FISH

a. Introduction

Much of the recreation on the Forest is related to fishing, both in streams and in lakes The Forest is noted for trout fishing, which attracts anglers from throughout California and beyond. Less known, but regionally significant, is its anadromous fishery which includes chinook salmon and steelhead.

The Forest manages the fish habitat, but the California Department of Fish and Game manages the fish populations themselves. The discussion below is divided into sections on major lakes, other Forest lakes, streams, and anadromous fish.

b. Supply

The fishery resource on or adjacent to the Forest is significant. About 3,500 acres of lakes, 350 miles of resident trout streams, and 86 miles of existing and potential anadromous habitat is within National Forest lands Eagle Lake, Lake Britton, and Lake Almanor offer about 28,000, 1,200, and 24,000 surface acres respectively on adjacent lands.

At least 29 fish species inhabit Forest waters. Of greatest economic importance are chinook salmon, steelhead trout, and rainbow trout Each of these is a Management Indicator Species (MIS), used to represent habitat requirements for an entire community of fish species on the Forest

Eagle Lake, Lake Britton, Lake Almanor
Eagle Lake, an alkaline lake with no outlet, is famous for its native Eagle Lake trout. Any

actions that would reduce lake volume, increase alkalinity, speed up eutrophication, or affect the trout's primary forage fish (tui chub) would adversely affect the Eagle Lake trout Increased lake volume and resulting decreased alkalinity could also allow establishment of competing fish Both the Eagle Lake rainbow trout and Eagle Lake tui chub are listed by the California Department of Fish and Game as species of special concern

Lake Britton is a reservoir supporting both warm and cold water fish, but over 80 percent are non-game fish Recreational fishing is very light because cloudy waters and heavy algae blooms reduce the lake's suitability for fish Both resident and migrant bald eagles, however, consume the lake's fish

Lake Almanor is a reservoir whose water levels fluctuate depending on runoff and power demand. Rainbow trout, brown trout, chinook salmon, and smallmouth bass inhabit the lake and are in high demand, but fishing has declined in recent years, primarily from competition with non-game fish, and a diversion dam that reduces passage during spawning runs

Resident Fish, Other Lakes At least 108 other lakes on the Forest support fisheries. Most are cold-water fisheries, but some larger lakes contain warm water species as well Based on surveys and Habitat Capability Model criteria, over 40 percent of the lakes, amounting to 50 percent of surface area, have low quality habitat for fish Only about eight percent of the lakes (by surface area) have high quality habitat Twelve lakes, totalling nearly 1,300 acres (33 percent of the total) have potential to become high quality habitat

Resident Fish, Streams Rainbow trout, brown trout, and brook trout earn the Forest its reputation for stream fishing Of the 350 miles of resident trout streams, 79 percent have medium or high habitat quality Much of the camping on the Forest is along streams and associated with fishing. Ninety percent of the stream miles have potential to support medium to high habitat quality A portion of Yellow Creek is classified as a Wild Trout Stream by the California Department of Fish and Game.

Anadromous Fish Chinook salmon and steelhead trout inhabit Deer, Mill, and Antelope Creeks on the west side of the Forest These streams are unique to both the Forest and northern California because they are free-flowing tributaries to the Sacramento River Mill Creek contains the highest elevation spawning areas for salmon in California. The Forest administers about 60 percent of the total mileage of anadromous habitat within these three streams Deer Creek has 38 miles, Mill Creek 32 miles, and Antelope Creek 23 miles within the Forest. Estimated anadromous runs, measured in total average adult spawning fish per year (for 1970-1980), are 4,100 spring-run chinook salmon, and 2,600 steelhead In recent years (1984-1990), however, the total average return for spring-run chinook salmon is less than 1,000 fish No current population estimates are available for steelhead. The Forest accounts for about 30 percent of the total Central Valley spring-run chinook salmon The spring-run is currently listed as a species of special concern by the California Department of Fish and Game. Since much of the anadromous fish habitat has been lost or degraded in the Sacramento River watershed, these streams have become increasingly important to the survival of the river's wild anadromous stocks.

Within the Forest, factors influencing anadromous fish habitat include (1) localized lack of pools, overhead cover, and instream protection, (2) natural instream barriers, (3) possible wilderness designations within the watersheds that could influence stream improvement opportunities. Downstream from the Forest, problems include (1) loss of fish to diversions, (2) predation near diversions; (3) habitat alteration in the Sacramento River and the delta, and (4) ocean and sport harvest

c. Demand

Each year anglers spend about 90,000 Wildlife and Fish User Days (WFUD's) fishing for resident cold and warm water fish and in related activities A WFUD is a 12-hour activity day This recreation is valued at $1,370,000 annually An estimated 1,100 WFUDs are spent fishing in the ocean for salmon produced in Forest streams Commercial harvest of spring-run chinook salmon

produced on the Forest is approxlmately 11,000 poundsper year basedonthe 1986-1990average The annual economic value of the spnng-run chinook salmon and steelhead fishery produced on the Forest is estimated at $48,000

The RPA target for anadromous fishenes is a 4,200 pound increase by the year 2000, to be accomplished **by** habitat enhancement

d. Opportunities

In Forest lakes, maintaining permanent pools dunng dry seasons is the main measure required, but this is often outside Forest Service control. Improved shoreline and underwater cover, controlling shoreline grazing, and placing underwater structures are measures under Forest Service jurisdiction In streams, resident fish habitat can be improved by developing cover and pools, protecting streambanks, increasing ripananvegetation, and removing instream barriers and unneeded debns Three other improvement needs that are not directly under Forest Service jurisdiction are improvement of instream flows from impoundments on pnvate lands, reducing sediment from disturbed pnvate lands, and adjustments in fish stocking In anadromous fishenes, five potential opportunities for habitat improvement on Forest lands are' (1) watershed rehabilitation (pool and cover development, revegetation, and channel stabilization) along upper Mill Creek; (2) rehabilitation of the fish ladder at Upper Deer Creek Falls to open accessto 13miles ofpotential holding, spawning, andreanng habitat, (3) acquisition of Deer Creek Meadows and improvement of npanan habitat and bank conditions there, (4) removal of rock barners in the upper reaches and tnbutanes of Deer and Antelope Creeks to increase habitat, and (5) development of artificial rearing ponds in cooperation with the California Department of Fish and Game **A** major need not under Forest Service jurisdiction is the re-establishment of adequate transportation flows for both adults migrating upstream and juvenile fish migrating downstream

9. FOREST *HEALTH*

a. Introduction

Histoncally, overall tree mortality on the Forest from insects and diseases has been moderate Forest pests evolved during the course of the Forest's development and are thus an integral part of that environment Some pests occur at certain penods in a timber stand's development, other pests are favored by certain biological conditions, and some pests are favored by management actinties Different types of pests often act together with environmental stresses and with each other, to form a pest complex that causes far greater damage than a single pest The root disease/bark beetle complex is a common example

b. Current Management

While no Forest pest can be fully controlled, their effects can be prevented or contained to varymg degrees. The overall approach is called Integrated Pest Management It recognizes the interrelationships of the entire pest-host system and, rather than just attackmg the pest, treats one or more of the components in an integrated manner

Annosus root rot disease, affecting 15-20 percent of the Forest's pine and true fir stands, is lessened by requiring application of borax to freshcut stumps in pine stands, by favoring resistant species, and by reducing logging injuries to trees Dwarf mistletoe attacks from 10 to 40 percent of the Forest, varying with tree species; it can be confined by silvicultural treatments where economical Stem decays will become less common as old growth stands are converted to young growth, mininnzing logging damage will reduce future losses Elytroderma disease is also difficult to control Favoring nonsusceptible species in affected areas, and thinning to increase tree vigor may reduce tree mortality Pine bark beetles are one of the most destructive pests and kill many thousands of trees each year and many times that during cyclical highs. The best mitigation is prevention of conditions such as root diseases, mistletoe, and competition that make trees more vulnerable

The Forest is participating in a program to develop blister rust resistant sugar pine Disease-free trees are identified and protected from harvest Seedlings grown from seed collected off these trees are tested for resistance to blister rust Approximately six percent of trees tested on the Lassen have proven resistant. By the year 2000, all sugar pine reforestation needs are expected to be met with rust resistant seedlings.

Dunng 1988, the first rust resistant sugar pine seedlings were planted on the Forest.

Thinning is used to improve stand vigor Pine engraver beetle damage in pine stands is prevented by thinning also, as well as proper slash disposal and timing of timber harvest Fir engraver beetles in fir stands are also best prevented by thinning, by avoiding predisposing conditions, and by favoring pine on pine sites Douglas-fir tussock moth infestations in white fir are cyclical; conditions are best avoided by thinning to reduce the fir component on marginal sites The Forest uses pheromone-baited traps to monitor the moth populations and predict defoliation cycles

Mammal pests to Forest resources include deer, cattle, pocket gophers, and porcupines, which eat seedlings and small saplings. The Forest uses vexar (plastic mesh) tubes to protect seedlings in areas of heavy damage. Porcupines also gnaw on signs, buildings, and even radiator hoses and brake lines of cars parked at trailheads

High populations of rodents occur in some campgrounds and can cause disease outbreaks. The Forest takes preventive measures ranging from improved sanitation, facility design, and public education, to direct trapping, removal, and dusting of burrows with insecticide Rodent populations are monitored near campgrounds, which occasionally have been closed because of danger to human health.

c. Integrated Pest Management

Integrated Pest Management (IPM) combines the various pest management strategies into the management decision-making process– prevention, surveillance, detection, evaluation, suppression, and monitoring Its goal is to prevent and/or reduce unacceptable vegetation losses In selecting the appropriate technique, all types are considered on a case by case basis - chemical, biological, manual, and cultural Greater resource demands will necessitate a higher intensity of pest management actinties

10. GEOLOGY AND GROUNDWATER

a. Geology

The Forest is named after Lassen Peak, an active volcano located within Lassen Volcanic National Park About 85 percent of the Forest is covered with volcanic geology of relatively recent origin. The southwestern part of the Forest has steep slopes and stream-cut canyons, and some landslide potential The southern 15 percent of the Forest has non-volcanic geology, consisting mainly of granitic, metamorphic, and sedimentary rocks The highest elevations of the Forest were glaciated in the last ice age

Stability Hazard Non-marine sediments in the southern part of the Forest can be unstable when slopes are steep (over 35 percent) Local instability and slumping can result when soils are excavated deeper than about two feet below ground surface Some granitic slopes also have this potential About six percent of the Forest has non-marine and granitic soils Most of these soils have a moderate stability hazard, with less than two percent having a high to very high hazard Much of the Forest, however, has low-relief volcanic topography where the stability hazard is low

Volcanic Hazard A portion of the Forest lies in a potential volcanic hazard area Lassen Peak last erupted in 1914-21, and examples of recent volcanism cover the northern half of the Forest Predictions of eruptions are not yet reliable, but past eruptions of Mt Lassen included ash falls, mudflows, and lateral steam blasts Risk to human life would be low because of limited access and low populations The Forest has an active, cooperative role in Lassen Volcanic National Park's volcanic emergency plan

Seismic Hazard Accurate predictions of earthquakes are also not feasible However, the north and east sectors of the Forest lie in a "moderate" seismic seventy zone, and the south and west sectors in a "low" zone

Known faults are avoided when locating new buildings and major structures

b. Groundwater

The Forest has a high quality groundwater resource, although it is not available everywhere. Approxlmately **70** domestic groundwater systems have been developed to serve campgrounds and administrative sites, about **15** wells supply livestock, wildlife, road dust abatement, and fire control needs Summer demand exceeds supply in the dry northern and eastern parts of the Forest, so the Forest has a gradual water development program to improve or dnll wells and tap springs The vanable geology makes choosing well sites a challenge, in the northeast, groundwater supplies lie too deep for affordable drilling Along the Hat Creek Rim and elsewhere, dnlling has encountered inadequate water for desired uses. Where wells can tap regional aqufers, supplies are adequate for most needs Geologic or geotechnical studies are conducted to locate likely sources **for** groundwater projects Little else is known about the Forest's overall groundwater resource.

The Forest has few pollution sources, and the quality of the groundwater is high. Water quality is monitored regularly at campgrounds and administrahve sites in compliance with State and Federal standards Septic systems in recreation residence tracts must meet State standards. Because over **35** percent of the inflow to Eagle Lake is believed to be groundwater, particular attention is gwen to maintainmg the integnty of its watershed. The high level of groundwater purity that the public expects throughout the Forest conhnues to be provided

c. Opportunity

No Geological Resource Inventory (GRI) has been conducted for the Forest. A GRI would provlde usefulinformation ongeological hazards, groundwater, geological special interest areas, and aggregate resources (cinders, sand, rock, etc).

11. LANDS

a. Introduction

In the **1982** base year, the Lassen National Forest boundary designated by Congress encompassed about **1,375,000** total acres This total areaincludedabout **315,000** acres ofpnvateland and **1,060,000** acres of Lassen National Forest land The Forest also administered **83,060** acres **of** Shasta National Forest and **1,321** acres of Modoc National Forest, while the Plumas National Forest administered **14,799** acres of the Lassen Thus, a total of **1,129,585** acres were administered by the Lassen National Forest and are the subject ofthis Forest Plan The Forest is located (in descending order by acreage) in the counties of Lassen, Shasta, Tehama, Plumas, Sıskıyou, Butte, and Modoc.

b. Land Ownership

Land ownership patterns are vanable About one-quarter of the land within the National Forest boundary is pnvately owned, mostly by large timber land companies Both public and pnvate lands border the Forest penmeter · Bureau of Land Management parcels to the northeast, State of Cahfornia to the southwest, and Lassen Volcanic Park in the center, completely surrounded by the Forest.

The Forest's land adjustment program continually exchanges Forest lands for pnvate lands to secure more convenient ownership patterns. The Forest espeually tnes to acquire isolated pnvate inholdings in exchange for isolated parcels of National Forest. As of September **1990,** the Lassen National Forest boundary contained approximately **318,000** acres of pnvate land and **1,056,728** acres of National Forest land. The Forest admnistered **102,832** acres for the Shasta National Forest and **1,321** acres of Modoc National Forest, while the Plumas National Forest administered **14,799** acres of the Lassen, for a total of **1,143,562** acres administered by the Lassen National Forest

c. Special Uses (Non-Recreational)

The Forest issues special use permts to allow uses on National Forest land when there is a demonstrated lack of land in other ownership to accommodate such uses, and when such uses do not conflict with National Forest management. With some exceptions, the Forest collects an annual fee for each special use permit. There are **354** special use permits (excluding recreational) involving about 3,200 acres and **$13,233** in annual fees. In most cases, a permit for occupancy or use of National Forest lands limits the **re**maining management options available.

d. Utility Corridors

About 82 easements or special use permits have been issued over parts of the Forest As noted, management options are limited on these areas. The Western Regional Corridor Study identified the potential need for an east-west utility **corri**dor through or near the Forest Two such routes have been identified crossing the Forest

A 42 inch gas pipeline is to be installed by Pacific Gas and Electric Company in 1992-1993 adjacent to the existing 36 inch gas pipeline. It crosses through a portion of the Shasta National Forest which is adnunistered by the Lassen National Forest. The gas is being transported from Canada to Southern California to meet increasing energy needs. The Federal Energy Commission (FERC) is the lead Federal agency on this project

A consortium of power agencies called the Transmission Agency of Northern Cahfornia (TANC), is constructing a 500 KV transmission line This project is referred to as the Califorma-Oregon Transmission Project (COTP) Construction is taking place dunng 1991-1992 This line only crosses approximately 1/2 mile of the Shasta National Forest lands admnistered by the Lassen. It is separated from the exlsting 500 KV transmission line by about two air miles (separation was desired to decrease potential damage to both lines at once by fire or natural disaster)

e. Withdrawals

Several areas have been withdrawn from mineral entry or land disposal About 21,000 acres are withdrawn for administrative or recreation sites, scenic roadways, experimental forests, or research natural areas, about 24,000 acres are withdrawn for power and reservoir projects.

The California Wilderness Act of 1984 brought the total wilderness on the Forest to 78,060 acres Wilderness is withdrawn both from entry under the mining laws and from sale or disposal Steps are underway to withdraw the 4,000 acre Cub Creek Research Natural Area from mineral entry

In compliance with Section 204 of the Federal Land Policy and Management Act (FLPMA), the Forest reviewed each mthdrawal in 1991 in conjunction with the U.S. Department of Interior and will determine whether each should continue

f. Rights of Way

To assist in Forest administration, nghts-of-way are acqmred for roads, trails, and other improvements in the form of easements and use permits. This nghts-of-way program functions mainly to support timber sales and is necessary to reach areas formerly avoided because of difficult access. During this decade, the case load will ***be*** about 15 cases per year, tapering off to less than five per year the next decade until all needed nghts-of-way are acqmred

g. Land Line Location

There are about 2,400 miles of property boundary with private lands around and within the Forest National direction requires that the Forest Semce **or** project proponent mark and post property boundaries to legal standards before any project occurs adjacent to those boundanes About 1,800 miles of boundary remain to be posted and marked, completion is expected by the year 2020

h. Landowner Coordination

As land management intensifies within and adjacent to the Forest, the need for closer coordination between adjacent land owners is increasing.

Eagle Lake The Eagle Lake basin is an area of high enmronmental sensitivity and public interest Land management is closely coordinated among the Forest Service and four other agencies that administer land or resources in the basin Bureau of Land Management, Cahfornia Department of Fish and Game, State Lands Commission, and Lassen County The Eagle Lake Interagency Admsory Board of Directors consists of a member from each agency and meets regularly to achieve coordinated, consistent land and resource management in the basin

Lassen Volcanic National Park The Forest coordinates with Lassen Volcanic National Park on areas of mutual interest Examples are the jointly-provided fire engine and crew at the Park's Manzanita Lake entrance, and the cooperative agreements for fire detection at the West Pros-

pect Lookout, and for garbage collection. The two agencies have yearly coordination meetings, and the Forest informs the Park of proposed projects near Park boundaries

Lake Britton Lake Bntton supports a significant bald eagle population and borders McArthur-Burney State Park Pacific Gas and Electric Company manages the reservoir and much of the lake frontage under terms of a license issued by the Federal Energy Regulatory Commssion. The Forest Service submitted comments dunng the licensing process on the reservoir project The Forest has a fire protection agreement with the California Department of Forestry making the latter responsible for the Lake Bntton area Otherwise, coordination efforts are mostly informal, such as seeking input on projects from other agencies Recently, the Forest has held four formal consultations with the U S Fish and Wildlife Servlce to determnne impacts of proposed projects on the bald eagles

i *Land Adjustment Plan*

The current land adjustment plan specifies for a portion of the Forest, what land ownership adjustments are to be made and in what prionty It will he superseded by a new plan after this Forest Plan is approved.

12. LAW ENFORCEMENT

a. Introduction

Managing the Forest involves certain responsibilities such as the protection of resources, facilities, Forest users, and Forest employees Federal law and regulations require protection of the Forest Law enforcement is the Forest manager's tool to gain compliance with those laws and regulations

b. Current Management

The Forest Semce is given authonty to enforce certain laws by Title 16 of the United States Code (USC) It also administers special legal orders called the Secretary of Agriculture regulations It is responsible, together with other Federal agencies, for enforcing specific laws and carrying out the criminal procedures described in USC Title 16, 18, and 21 It administers State laws and local ordinances in cooperation with State and local law enforcement agencies

The Forest's four major law enforcement problems are (1) theft of timber, pnmarily firewood, (2) vandalism and removal of cultural resources, **(3)** building security, and (4) marijuana cultivation Three problems of lesser magnitude are (5) arson, (6) trespass fires, and (7) civil disorder The Forest's law enforcement plan (1983) descnbes these situations and how the Forest will address them

Prevention The Forest prevents law violations by informmg the public and employees of laws, rules, regulations, and of past convictions of violators This information can be a meaningful deterrent

Protection The Forest takes a variety of protective measures to insure a safe environment for the public, for employees, and for government property Clear directional signs, secured buildmgs, and two-way radios are examples.

Investigation Once a vlolation is committed, an investigation is conducted until enough evidence is gathered to successfully prosecute the matter

Cooperation The Forest Servlce cooperates with other Federal, State, and local agencies to provlde coordinated law enforcement coverage. Examples are provlding campground patrols and determining civil and/or criminal liability.

13. MINERALS

a. Introduction

The Forest's predominantly volcanic terrain offers little in the way of valuable minerals (except geothermal resources) Most minerals are located in the granitic, metamorphic, and sedimentary rocks of the southern part of the Forest, and in the lake deposits around Lake Bntton in the northern portion of the Forest.

The Forest Service administers minerals mainly under 36 CFR 228 (for locatable minerals, such as gold and silver, and mineral matenals, such as sand and cinders). The Secretary of the Interior retains the authonty to manage locatable and leasable mineral resources on National Forest land The Forest Servlce is responsible

for managmg its surface resources and mineral matenals.

Currently the main mining activity on the Forest is diatomite mining near Lake Britton Here, the Forest safeguards the surface resources such as soil, water, and wildlife by inspecting for compliance with the approved plans of operation There are no active mining operations for gold, and no drilling or development operations for geothermal, or oil and gas, although prospecting is occurring The Carr Mine is a patented mine (now on pnvate land) in the southern portion of the Forest that has been mined intermittently for gold Profitable mining of a mineral deposit often depends on the ability to access it economically. Access for mineral exploration and development is generally unrestricted, except to mitigate impacts to surface resources Exceptions include mlderness, Special Areas (Research Natural Areas, Special Interest Areas, etc), Wild and Scenic Rivers, and other specially designated land Access to these areas is hmited to valid existing rights and is restricted to protect the integrity of the area involved The specific restrictions for these areas are contained in the Forest Standards and Guidelines, prescriptions, and Management Area Direction of this Forest Plan

Weeks Law Lands Minerals on parcels of land with Weeks Law status are leasable, rather than locatable. The Forest thus has discretion whether or not to lease. One-hundred- sixty acres on the Forest have Weeks Law status, nearly all m thin the new Ishi Wilderness Another 20 acres are occupied by the Forest Service facilities in Chester Mineral potential for these areas is low

Outstanding and Reserved Mineral Rights Approximately **1,300** acres of the Forest have outstanding mineral rights A one-half interest in them is held by the United States

b. Supply

On the Forest, past mineral actinties have been limited, consisting mainly of some gold and diatomite mining The Forest has approximately 1,200 mining claims, and receives about six plans of operations a year

Gold Gold on the Forest is limited to deposits at the northern end of the Sierra Nevada province Significant gold mining occurred histoncally Although production records are incomplete and data are approximate, a mining district at the south end of the Forest produced at least 25,000 ounces of gold (and 1,300 ounces of silver) between 1889 and 1940, mostly from placer operations Several gold-bearing gravel deposits in that area have been determined to be "subeconomic" Supply estimates for the entire Forest would only be a guess Gold prospecting is minimal

Diatomite Some of the most extensive known deposits of freshwater-ongm diatomite are found in the Lake Bntton area. Although total supply has not been estimated, deposits are exposed over tens of square miles, many of them on Forest land Mining is underway on Forest land south of Lake Britton, and may expand to private and National Forest land north of the lake Until recently, two operators were removing about 150,000 tons of diatomaceous earth a year from open pits for use as a silica in cement

Volcanic Materials Volcanic cinders and basalt are a mineral material abundant over the Forest's volcanic terrain More than 200,000 tons are removed each year, mainly for road fill or surfacing, with minor use as aggregate in asphalt and building blocks One-third of the total tonnage is used by the Forest Service or its contractors The remaining two-thirds is used by public agencies for road building and maintenance, including the "sanding" of roads in winter There are 40 active cinder pits and another five potential sites on the Forest

Flat, volcanic basalt, commonly referred to as "moss rock" is available on the north end of the Forest The mineral matenal is used in landscaping and as a facing matenal on buildings and walls Volume removed fluctuates between 50-500 tons per year

Geothermal The Forest's volcanic terrain shows signs of a potential geothermal resource The U S Geological Survey (USGS) has classified the northern two-thirds of the Forest as prospectively valuable for geothermal resources, and an area south of and adjacent to Lassen Volcanic National Park as a Known Geothermal Resource Area (KGRA) Total potential of the KGRA was originally estimated at 1,000 megawatts (Mw), but modeling has lowered that estimate to **75** Mw

Oil and Gas A usable oil and gas resource may exist The USGS has designated areas on the western edge of the Forest as prospectively valuable for oil and gas General geological characteristics necessary for oil and gas formation occur under the western and northern portions of the Forest (Hornbrook Basin). Geophysical exploration in the area is continuing The nature and extent of these resources are not well known and will not be known until substantial exploration is underway

c. Demand

Gold Gold mining on the Forest is minimal, but is expected to increase because a number of new claims have recently been filed. The price of gold appears to be the main factor that affects gold mining activity, a continuing increase would be reflected in increased mining at several sites on the Forest

Diatomite Diatomite demand is expected to increase in conjunction with the projected increase for all non-metallic minerals.

Volcanic Materials Anyincreasem the pnmary use ofcinders—road budding and maintenance would increase demand for cinders from National Forest lands. The abundant supply will accommodate demand No sigmficant increase is expected in the Forest Service demand for cinders Demand for moss rock is continumg on a steady or slightly increasing trend, dependent on the housing and landscaping markets

Geothermal Geothermal energy demand has been expressed by the filing of over 100 (as of 1984)non-competitive lease applications on the Forest In 1982, the Forest made recommendations to approve these leases, but the decisions were appealed and are under reconsideration. Most of the applications have been rescinded, while new ones are periodically received The KGRA south of the Park has been divlded into 20 lease areas that are proposed to be sold competitively. This will give the best indication of demand for the Forest's geothermal resource This KGRA ranks below both the Mono-Long Valley KGRA and the Glass Mountain KGRA in estimatedpotential A Forest Service/BLM Draft Environmental Impact Statement has been prepared, analyzing where and under what conditions geothermal leasing may occur on National Forest lands in the vicinity of Lassen Volcanic National Park The Final EIS and decision will be issued after BLM and the National Park Sernce reach agreement on possible impacts **of** development on Park features. The geothermal EIS is consistent with the more comprehensive Forest Plan EIS In particular, the Forest Plan Appendix I, Mineral Lease Stipulation Criteria, contains direction denved from the geothermal EIS.

Oil and Gas Demand for oil and gas has been expressed by the filing of over 50 (asof 1984)noncompetitive lease applications on the Forest Three of these were addressed in an environmental assessment in 1982 The other lease applications are being processed through environmental analysis now in progress. **As** with geothermal, oil and gas applications are occasionally rescmded, while new ones are received. Geophysical exploration is underway, but the recent surge in lease activlty that followed the decontrol of oil prices has waned. Demand is believed sensitive to oil and gas prices. Results from the geophysical exploration on the Forest will also mfluence future interest in this resource.

14. RANGE

a. Introduction

The Forest's range resource consists of approximately 410,000 acres that are suitable **for** livestock grazing This includes the annual grasslands of the western foothills; meadows interspersed with dense fir and pine stands in the central portion, and mosaics of eastside pine, big sagebrush, and dry perennial grass meadows in the east. The range is divided into primary range, which is chiefly meadow with perennial grass and adequate water, secondary range, which is less preferred by livestock because of natural factors such as slope, forage conditions or distance to water, and transitory range, which is temporanly made available by timber harvests or fires Using current range analysis methods, range resource conditions are rated as 28 percent good, 59 percent fair, and 13 percent poor.

b. Current Management

The Forest has **61** active grazing allotments with a total **of 49,700** permitted animal unit months (AUM's) per year. **An** AUM is **1,000** pounds of forage needed to support a mature cow one month Most allotments are grazed from June through October, 10 are grazed during spring, winter or year long Four additional allotments are closed to grazing because of conflicts with urbanization, and the management of other resources

Fifty-two permittees utilize the **61** grazing allotments with approximately **8,500** cattle The majority of the permittees own base ranches in the Sacramento Valley, Hat Creek Valley, Fall River, Susanville, Janesville, or Doyle areas These permittees depend on the Forest range resource as part of their ranches' year-round livestock operations and maintenance of economic ranch units Generally, they summer their cattle on the Forest and winter them on their private base ranches or on BLM lands.

In the southwestern portion of the Forest, the range resource is also used by a herd of approximately **21** wild horses, which are under the protection of the Wild Horse and Burro Protection Act of **1971** The herd management goal is to maintain a healthy population within the capacity of herd territory that is compatible with other resources

The current range management objectives on the Forest are

1. To manage range vegetation to protect basic soil and water resources, provide for ecological diversity, improve or maintain environmental quality, and meet public needs for interrelated resource uses

2. To integrate management of range vegetation with other resource programs to achieve multiple use objectives contained in the Forest Plan

3. To provide for livestock forage, mildlife food and habitat, outdoor recreation, and other resource values dependent on range vegetation

4. To contribute to the economic and social well-being of people by providing opportunities for economic diversity and by promoting stability for communities that depend on range resources for their livelihood.

5. To provide expertise on range ecology, botany, and management of grazing animals

c. Supply

About **410,000** of the Forest's **1,129,585** acres are considered suitable for livestock grazing The 61 open allotments provide about **49,700** AUM's. Current emphasis on the Lassen is to achieve quality range management In this, cattle grazing is used to manage for desirable vegetative charactenstics in ecosystems. Livestock grazing systems need to be updated to achieve riparian and upland management goals

The wild horse herd consumes about **300** AUMs per year

d. Demand

Demand for the Forest's forage comes from the livestock industry in communities adjacent to and within the Forest This demand began in the late **1800's** before the National Forest was established Since **1906,** cattle grazing on the Forest has shown a slight net increase. Recently it has fluctuated from a low of **33,890** AUMs in **1977** to a high of **49,700** AUM's in **1982** On the other hand, demand for use by sheep has decreased drastically from **4,895** AUM's in **1955** to 0 AUM's in **1983**

Livestock demand for the Forest's forage will remain constant as long as costs to graze on public lands are less than costs for alternate sources of feed

e. Management Conflicts

Grazing Conflicts Livestock tend to favor riparian areas because of the availability of water and forage Conflicts in riparian areas arise from the degree of foraging, trampling, streambank slumping, and water quality degradation caused by livestock Livestock grazing within the Eagle Lake watershed has recently raised public and State concerns about possible effects on Eagle Lake and its tributaries' water quality

Through good range management, most of these conflicts can be avoided Conflicts also exist over utilization of forage among livestock and big game, especially in nparian, meadow, bitterbrush, and sagebrush habitats

Traffic Hazards Some highways are not fenced, and livestock are not impeded from crossing them in search of water or forage A collision hazard exists between livestock and vehicles along these highways

Nesting Disturbances Some wetlands have been developed with islands for nesting waterfowl and other wetland species. In extremely dry years, water in the wetlands dnes up early and exposes the islands before the nesting season ends Livestock often graze the islands, as soon as they can reach them, and disturb the nests

Management Intensity Intensive management can improve the rangelands while not detracting from other resources Special attention must be given to protect npanan areas which would benefit water quality, wildlife, fishenes, as well as the livestock industry

Techniques Techniques such as prescnbed burning, mechanical treatment or herbicides are used to manipulate vegetation. Fencing or grazing systems are used to manage vegetation Pubhc concerns anse over which techniques to use for rangeland improvement In the selection of the best technique, Forest managers consider costs, benefits, concerns, and the effects on the biological envlronment

Wild Horses There is concern over the stability of the wild horse herd and the range resource mthin its territory. Management of the terntory is based on the needs of the horses and guided by the Wild Horse and Burro Protection Act.

f. Opportunities

There are good opportunities to improve the range resource and its management First, improved coordination with other resource projects (e g chaparral burning, grazing systems, and stock ponds) will benefit livestock as well as wildlife and other resources Such cooperative, complementary actinties can reduce their net cost while yielding multiple benefits Second, improved coordination with the livestock permittee will benefit both public and private range resources This coordination includes worlung with the permittee to accept, invest in, and implement changes in range strategies and developments Such changes may also require the permittee to make adjustments in the home ranch operation, herd size, cattle breed and/or type. Third, greater stability for the livestock industry will benefit the range resource because it allows the permittees to make long-term investments on their Forest allotments to improve range conditions

15. RECREATION

a. Introduction

The Forest offers a year-round variety of recreation opportunities, including camping, hunting, fishmg, hiking, horseback riding, dnvlng for pleasure, picnicking, snowmobihng, sluing, and off-highway vehicle use. In 1990, the Forest's recreation usage totaled 1,242,600 Recreation Visitor days One RVD equals 12 hours of recreation use by one person or any combination thereof that equals 12 hours Of that usage, 38 percent involved dispersed recreation (which included one percent mlderness recreation use) Wilderness recreation is covered in the Wilderness and Further Planning Areas section of the Chapter.

In 1990, the Forest ranked thirteenth out of 18 Forests in the Regon for recreation use Streams, natural lakes, and man-made reservoirs are major attractions Lake Almanor, Silver Lake, Eagle Lake, Deer Creek, Mill Creek, and Hat Creek, receive the heaviest use.

Recreation use of the Forest is summarized below, first for the vanous categones of developed recreation and secondly for the categories of dispersed recreation

b. Developed Recreation

1. Developed Recreation Public Sector
The Forest has 64 developed public recreation facilities, of which four are campgrounds operated by Pacific Gas and Electric Company (PG&E) In 1984, the Forest contracted out the operation of the Eagle Lake Recreation Area to a concessionaire under special use permit, campgrounds there are now operated by the private sector Depending on convenience facilities,

campgrounds are either fee or non-fee, daily fees vary from $5 to $11. Campground use follows the same pattern each year campgrounds are open only in summer, as visitation occurs primarily between Memorial Day and Labor Day Many campgrounds fill to capacity on weekends and holidays, but offer ample room on weekdays The most desirable campgrounds and campsites are along lakes and streams They are filled to near capacity most of the summer while others are sparsely used, except at peak use times The Eagle Lake Manna was reconstructed in 1989-1990, and additional facilities are proposed

Forest Semce sanitary trailer dump stations are available to Forest users at Eagle Lake and at Hat Creek near Old Station The Forest operates the sewage treatment plant at Little Mernll Flat southwest of Eagle Lake. There are also six picnic areas, most located along State Highways 89 and *44,* and at the Eagle Lake recreation complex There are four mnter sports sites Ashpan, Morgan Summit, Swain Mountam and Jonesvllle Snowmobile Parks (funded partially hy State Off-Highway Vehicle grants) There are five interpretive sites Two are trails, two are information sites, and one is a small visitor center operated jointly with Lassen Volcanic National Park Unstaffed roadside information sites at Forest entrances are also planned The Forest has three boat ramps on popular lakes and two swimming areas for sunbathing, swimming, and water play

In recent years, declining budgets have caused a major reduction in interpretive programs Campfire programs and guided walks have been discontinued on two Ranger Districts, on the third, at the Eagle Lake Recreation Area, the Forest Service and the concessionaire conduct campfire programs and guided walks

Overall, the quality of the developed site resource is high, most structures are in good repair and receive regular maintenance, although some are wearing out and need major rehabilitation The Forest has had a good record of providing full-service management at most sites, although this has been reduced recently The vegetation in most campgrounds is healthy and shows no significant signs of detenoration due to recreation use, but some campgrounds do have soil erosion and compaction Periodic rest would allow accumulation of ground litter and perennial vegetation, but no facilities would he available to accommodate the users while these sites were closed for rehabilitation

2. Developed Recreation Private Sector

The Forest administers special use permits for the followmg pnvate recreational uses *400* recreation residences mthin nine separate tracts, four organization camps, one lodge-resort; two small ski areas, one manna, and one rest stop The special uses are largely concentrated on the Almanor Ranger District in the cool mixed conifer timber zone

Seven recreation residence lots at Lake Almanor are authonzed under an annual permit only One lot has no residence due to loss from fire Term permits for these lots ended in 1983 upon completion of a Future Use Determination which identified these sites for public use The information used in the 1983 decision will be renewed prior to notice of termination

The two ski areas that operate on the Forest, Coppervale Ski Hill Area and Stover Mountain Ski Area, have a combined capacity of 680 skiers at one time (SAOT), hut offer limited expansion potential A potential area for ski development exists on Butt Mountain that could have a capacity of 6,000 SAOT on approximately *2,400* acres The Lassen Volcanic National Park Ski Area is proposed for phase-out in *20* years if another suitable facility, such as the Carter Bowl Ski Area on Butt Mountain, or Dyer Mountain Ski Area, is developed outside the National Park

c. Dispersed Recreation

The Forest provides a wide variety of high quality dispersed recreation opportunities In 1990, dispersed recreation was estimated to be 38 percent of the total recreation use The most popular activity was motorized recreation travel, followed distantly by fishing, camping, hunting, and hiking/walking Most dispersed camping and fishing occurs near *40* lakes and along *120* miles of streams Use is particularly heavy along Deer Creek, Hat Creek, and Mill Creek The High Lakes Basin is popular for semi-pnmitive motorized and non-motonzed recreation The Forest is also popular for hunting, particularly for deer and pronghorn antelope, and for waterfowl and upland bird hunting

Recreationists hike and horseback ride, mainly on 465 miles of trails, they also snowmobile and

cross-country ski on trails, unplowed roads, and open areas. The Forest has 125 miles of the Pacific Crest National Scenic Trail, and several National Recreation Trails the McGowan Cross Country Ski Trail, Colby Meadows, Swain Mountain, the Heart Lake Trail, and the Spencer Meadow Trail. Three miles of the Heart Lake Trail on the Hat Creek Distnct will be nominated for inclusion in the National Recreation Trail System The Lassen Emigrant and Noble's Emigrant National Historic Trails date from the 1850's and today offer special histoncal opportunities The Bizz Johnson Trail (a "Rails to Trails" project) provldes excellent opportunities for hiking, biking, and cross country sluing between Westwood and Susanvllle West of Highway **36,** the trail is managed by the Forest Service and east of Highway **36,** by the Bureau of Land Management. Cross-country skiers ski the McGowan Cross Country Ski Trail and the Butte Lake Trail Much of the Forest's road system is sluable dunng mnter months when snow plowing does not occur Use of the Forest trail system is light to moderate and its user capacity is undetermined New trails would be bmlt to improve or disperse emsting use and provide additional opportunities Reconstruction is generally a higher pnonty than new construction

d. Recreation Opportunity Spectrum

The Recreation Opportunity Spectrum (ROS) provldes **a** framework for classifying vanous outdoor recreation opportumty environments The figures below represent an inventory of ROS classes on the Forest as of 1982 The Forest is mostly in the Roaded Natural ROS class as shown

Table 3-1

Recreation Opportunity Spectrum

ROS Class	Acres
Primitive	**3,393**
Semi-Primitive Nan-Motorized	14**6,3**87
Semi-Pnmitive Motorized	**59,350**
Roaded Natural	**910,774**
Rural	9,681

The very small area of pnmitive ROS class lies within the Canbou Wilderness About half of the semi-pnmitive non-motonzed land lies mthin the Caribou, Thousand Lakes, and Ishi Wilderness Areas; the other half lies pnmanly within the Forest's six further planmng areas and unroaded areas

Most of the Forest is open to off-highway vehicles with no restnctions. Off-highway vehicle (OHV) drivers especially use the 36 miles of designated four-wheel dnve trails and the semi-primitive motorized ROS areas *OHV* use in 1982 was approximately two percent of the total motonzed use, but in 1984, 17,614 acres of semi-pnmitive motorized ROS class were reclassified as the Ishi Wilderness, a significant reduction. There is little use of mountain bicycles so far on the Forest. Current policy is to prohibit their use within mlderness and on the Pacific Crest National Scenic Trail, but they are permitted on the rest of the Forest

e. Supply

Developed Recreation The Forest has a maximum practical campground capacity of 567,155 RVD's a year, while use in 1990 was 420,400 RVD's. The supply of developed campgrounds is adequate to meet the present demand, although desirable campgrounds often reach capacity. Should the need anse, the Forest has 184 sites identified for potential recreation development distributed throughout the Forest.

Recreation Residences There are 400 pnvate recreation residences National policy precludes the establishment **of** additional recreation residence tracts on National Forest lands Pnvate subdivisions and pnvate lands have adequate potential to fulfill demands for second homes, resorts, and summer camps in the area.

Dispersed Recreation The Forest had 471,000 RVD's of dispersed recreation in 1990 Of that, 70 percent was associated with the Forest road system Although much of the Forest is roaded, there are some unroaded areas with great potential for recreation The Forest is far below its projected maximum carrying capacity for all dispersed activlty categones general dispersed recreation, fishmg, hunting, and *OHV* use.

f. Demand

Dunng the last decade most types of developed recreation increased in populanty Winter sports uses increased the most; campground, organization site, and recreation residence site uses were relatively static; swimming and hotel/lodge/resort uses decreased significantly.

Since 1973, overall recreation use has fluctuated up and down, but without a sustained trend. Statewide data on outdoor recreation suggest that, in the long run, use is pnmarily a function of population in the market area Most Forest recreationists are California residents and are fairly evenly distributed throughout the State Population projections for the State of Cahfornia, therefore, serve as a good estimator of changes in use for most kinds of recreation Semi-primitive motonzed recreation has a more localized market area and, therefore, should follow a weighted average population growth of the local, Sacramento-Yuba City, and northern California areas The weighted average results in a slightly higher use projection for semi-pnmitive motorized than for other recreation categories The Forest has a total developed recreation capacity of 1,055,000 RVD's a year (including private sector facilities on Forest land) Developed recreation demand is expected to exceed supply in four decades

g. Opportunities

Developed Recreation There is a need to rehabilitate some of the heavily-used campgrounds and campsites to meet established standards Past reductions in capital financing for recreation have reduced the emphasis on construction of new facilities for developed recreation. Reductions in operation and maintenance funds have provlded the impetus to explore concession operation of public campgrounds by the pnvate sector; the operation of the Eagle Lake campgrounds by a concessionaire is the Forest's first attempt Because snowmobile use has increased recently, the Forest has improved snowmobiling opportunities by constructing snowmobile parking areas and warming huts financed by State Off-Highway Vehicle funds Additional OHV recreation developments are likely

Dispersed Recreation As population increases and emphasis on developed recreation facilities decreases, an increase in dispersed recreation is expected It is difficult to predict the trends in specific types of activlties Maintaining a range of recreation opportunities would help meet needs

Recreation Residences Because of the anticipated demand for water-onented recreation in the future, continued occupancy of shore front recreation residence lots will need to be monitored For this next ten year planning cycle, no additional Future Use Determinations are anticipated Other than the seven lots at Lake Almanor, continued use of 400 recreation residences is expected Expiration of term permits provides the opportumty to return some key recreation areas to public uses. Possible exchanges of recreation residence lands for desirable private lands provlde another opportunity.

16. SENSITIVE PLANTS

a. Introduction

Because the Forest has large tracts of uniform habitat, most plant species are widely distributed Twelve plant species designated as Sensitive by the Forest Service occur on the Lassen Their habitats tend to be small and isolated, the plants are normally sparsely distnbuted, and their populations are easily overlooked. No Threatened or Endangered plants listed under the Federal Endangered Species Act occur on the Forest, although two are listed as Endangered by the State of California

b. Current Management

The twelve Sensitive plant species that are known to occur on the Forest are

Constance's rock cress (*Arabis constancei*) grows in rocky, serpentine areas in mixed conifer forests near Yellow Creek

Northern spleenwort (Asplenium *septentrionale*) grows on volcanic rock outcrops in and near Lassen Volcanic National Park

Long-Haired star **tulip** (*Calochortus* longebarbatus uar longebarbatus) **grows** usually at the margins of grassy meadows that are wet in spnng and early summer and dry out completely in middle to late summer

Mathias' coyote thistle (*Eryngium mathiasiae*) grows in vemal pools and seasonally wet drainages in the northern part of the Forest

Bogg's Lake hedge-hyssop (*Gratzola* heterosepala) grows in vernal pools and reservoirs on the Hat Creek Ranger District Listed by the State of California as Endangered.

Quincy lupine (*Lupinus dalesiae*) is a pea family plant that occurs in open rocky soil in the Feather River drainage

Egg Lake monkeyflower (*Mimulus pygmaeus*) is a minuscule annual restricted to moist soil areas in meadows, along streams, and in drying muddy pools on flats

Slender Orcutt grass (*Orcuttia tenuis*) grows in vemal pools and similar habitat in the northern part of the Forest Listed by the State of California as Endangered.

Closed-throated beardtongue (Penstemon *personatus*) is a perennial herb growing on dry hillsides in pine and mixed conifer forests

American scheuchzeria (*Scheuchzeria palustris var americana*) is a perennial bog plant formerly believed extinct in California, but recently found at Willow Lake and Domingo Lake

Feather River stonecrop (*Sedum albomarginatum*) grows on serpentine rock cliffs near Yellow Creek

Cut-leafed butterweed (*Senecio eurycephalus var. lewisrosei*) is a small perennial plant found on serpentine soil near Yellow Creek

These twelve species occupy unique specific and localized habitats within the Forest. Because no comprehensive Sensitive plant surveys have been conducted, it is likely that additional populations of these plants will be located

In addition to the twelve species known to occur, ten other plant species with low population numbers have a high probability of occurring on the Forest:

Stoloniferous pussy-toes (Antennaria *flagellaris*)
Wilkin's harebell (Campanula *wilkinsiana*)
Talus collomia (*Collomia debilis* spp *larsenii*)
Butte County fritillary (*Fritillaria eastwoodiae*)
Cantelow's lewisia (*Lewisia cantelowii*)
Bellinger's meadowfoam (*Limnanthes floccosa* spp *bellingeriana*)
Stebbins' monardella (*Monardella stebbinsii*)
Modoc County knotweed (Polygonum polygaloides spp *esotericum*)
Short petalled campion (*Silene invisa*)
Salmon Mountains wakerobin (*Trillium ovatum* spp *oettingeri*)

These plants occur on lands surrounding the Lassen National Forest in habitats similar to those on the Forest The Forest can improve its Sensitive plant program by increasing the rate and intensity of inventorying specific habitats for these species, and by providing appropriate management to any newly located populations.

All Sensitive plant locations are managed according to the policy direction in the Forest Service Manual and Region 5 handbook on the Threatened and Endangered Plants Program In planning and implementing resource projects, known locations of Sensitive plants are avoided or effects are mitigated If a new Sensitive plant location is encountered, it receives similar protection

c. Opportunities

The Forest will conserve Sensitive plant populations by identifying their specific habitats and preventing their disturbance or destruction The first step is to complete a comprehensive survey of all suitable and potential habitats. Care can then be taken not to adversely affect their habitats and thereby insure species vlability

The Forest can maintain or increase Sensitive plant populations by assessing all planned timber sales and other projects for Sensitive plants. It may also become necessary to modify existing grazing uses, change proposed road locations, alter planned timber harvest units, relocate burning unit boundaries, or modify other habitat disturbances The need for such action is likely only in occasional, isolated situations.

17. SOILS

a. Introduction

Soil directly or indirectly supports all other Forest resources Soil productiwty is necessary for wood, forage, vegetation, habitat, and watershed protection. Various soil charactenstics determine whether the soil is suitable for such uses as timber harvest, road construction, developed recreation, or range and wildlife habitat improvements

b. Current Management

Soil productiwty is defined as the capacity of the soil, in a specific environment, to produce vegetation The goal of current management is to maintain soil productiwty. This requires avoiding management actions that would irreversibly impair soil productivity, and monitoring productiwty to detect significant changes caused by management actions It also reqmres restoring or rehabilitating soils in degraded areas where there is presently a backlog

Areas of soil degradation are scattered throughout the Forest Most degradation is soil erosion caused by downcutting of streams, but in some cases may include soil compaction and loss of soil nutnents. Site specific locations of soil degradation will be determined when the Watershed Improvement Needs (WIN) inventory is completed during the first decade of this Plan

Current management involves two types of actions (1) adhering to Best Management Practices (BMP's) for water quality protection, and (2) providing input into planning of ground-disturbing projects BMP's are practices employed by the Forest Service which either directly or indirectly improve or protect the quality of the water resource In the process of protecting water quality they also help to protect the soil resource For example, a BMP may reqmre installation of cross ditches on skid trails The ditches divert water off the trail into undisturbed areas where the water's energy is dissipated, thus preventing erosion

Pacific Southwest Region BMP's are described in a document entitled *Water Quality Management for National Forest System Lands in California* (see Appendix Q for a listing of BMP's) Grazing systems and timber harvests are designed to avoid soil compaction, soil erosion, and stream sedimentation Special emphasis is gwen to soil disturbing activities such as clearcut blocks, roads, skid trails, and landings

The Forest is covered by two soil resource inventones. The portion of the Forest in Tehama County is covered by the Order 2 Tehama County Soil Survey (1967). The rest of the Forest is covered by the Lassen National Forest Soil Survey (1984) This reconnaissance-level (Order 3) survey is smtable for displaying the general kinds and locations of soils for broad planning purposes, but is not suitable for project level planning or design

c. Types of Soils

Based on the Forest Soil Survey, several observations can be made Most of the Forest soils have come from weathered volcanic rock material and have high percentages of **rock** fragments Minor portions are denved from granitics, nonmarine sediments, metavolcanics, and metasediments Depth to bedrock varies widely from shallow (less than 20 inches) to very deep (more than **60** inches), but in most areas it is moderately deep to deep (20 to **60** inches) Over the northern and eastern portions of the Forest, the volcanic bedrock is highly fractured In these areas water normally sinks directly to ground water with little overland flow The south and west portions have more surface runoff

The most productive soils usually have large available water holding capacities and lie in higher precipitation zones, typically on ndge tops and slopes less than **35** percent Timber regeneration usually succeeds on these soils

The next most productive are the moderately deep and stony soils, occurnng on well drained sites over much of the Forest, including moderate slopes Regeneration usually is successful, but more expensive Seedling survival rates are lower than in the deep soils

The least productive soils are shallow soils, generally below 5,000 feet in elevation, on all slopes throughout the Forest They are often very rocky, and timber regeneration is generally not successful

d. Soil Erosion and Compaction

Both soil erosion and compaction can reduce soil productivity.

Erosion The soil erosion that occurs on the Forest is usually associated with a management activlty, prlncipally timber harvesting **or** livestock grazing. "Natural" erosion unrelated to these activlties also occurs and can lead to soil loss and reduced soil productivlty. Sheet and rill erosion, and gully erosion both result from water movement, and cause loss of the protective canopy cover and soil litter They affect off-site areas by dumping sediment into streams, detenorating fish life and water-dependent activities downstream. Prevention is especially important because soil losses are irreversible on the scale of the human lifetime. Most erosion on the Forest can be prevented **or** controlled by the use of Best Management Practices (BMP's) The Forest has about 252,000 acres of soils with a high erosion hazard rating (EHR) Most of this land has steep slopes (over **35** percent), but some has erosive rhyolite soils or Eocene non-manne sediments Metasediments, metavolcanics, granitics, and cinder cones can be erosive if water is concentrated Most erosive soils he on the Almanor Distnct.

Compaction **As** a result of timber sales, livestock grazing, OHV use, and developed recreation, soil compaction is occurnng on the Forest and affecting plant growth Research is needed to further define the scope and degree of the exlsting problem. New sources of compaction, such as biomass removal and increased mnter loggmg, need to be analyzed Based on research results, the Forest then must decide on acceptable compaction levels. Meanwhile, the effects of soil erosion and compaction can be reduced by maintaimng adequate vegetative cover and limiting loggmg on wet soils

e. Opportunities

Demands for more forest products and amenities from the limited land base require maintaining exlsting soil productiwty and improvlng degraded areas This not only increases the capability of the land to produce, but also keeps the Forest aesthetically pleasing.

Timber regeneration is a major concern in soils management A more detailed soil survey (Order 2) would be helpful to define the extent of the Forest's timber regeneration problems

The Forest's target for soil and water resource improvement averages **75** acres per year Although several areas needing restoration have been identified, a complete Watershed Improvement Needs (WIN) inventory is required to identify and pnontize other areas The WIN inventory is expected to be completed in the first decade of this Plan At the present time, only key projects are heing scheduled for restoration work. There is also an opportunity to continue to add new projects to the inventory as they are located

In addition to restoring deteriorated soils, opportunities exlst to improve current soil productivlty levels through artificial and natural fertilizatlon

18. SPECIAL AREAS

The Forest has four types of exlsting or potential special areas a) Experimental Forests, b) Research Natural Areas, c) National Natural Landmarks, and d) Special Interest Areas. "Special areas" is a general and informal category for some areas that have been given special attention and management direction by the Forest Service.

a. Experimental Forests

Introduction

An expenmental forest is an outdoor laboratory set aside for purposes of research and development of forest management techniques. The Pacific Southwest Forest and Range Experiment Station is responsible **for** the management of expenmental forests in the Region The National Forest in which the experimental forest lies is responsible for implementing the Station's management direction for it. The decision to establish experimental forests is made by the Chief of the Forest Semce, rather than Forest Supervisor or Regional Forester Therefore, this Forest planmng process does not consider any change in their status

Blacks Mountain and Swain Mountain Of the nine expenmental forests in the Region, two are located on the Forest. The Blacks Mountain Expenmental Forest covers about **10,252** acres of the eastside pine type on the Eagle Lake Ranger District The Swam Mountain Expenmental Forest covers about 6,000 acres of the true fir type on the Almanor Ranger Distnct

Within the Blacks Mountain Expenmental Forest are five small parcels that constitute a Research Natural Area (RNA) which is managed in natural condition for baseline and research purposes Outside the RNA, much of the Expenmental Forest timber is being harvested under various silvlcultural systems.

Essentially, expenmental forests are established and managed entirely for research purposes, and are wthdrawn from sustamed timber production. Each expenmental forest is managed under a long range plan of operation (approved in 1980 for Blacks Mountain and 1979 for Swam Mountain).

b. Research Natural Areas (RNA's)

Introduction

Research Natural Areas (RNA's) are areas set aside in perpetuity as baselines of natural ecological conditions They are established by the Chief of the Forest Semce for several reasons. (1) to contnbute to the preservation of examples of all significant natural ecosystems for purposes of research and ecological study, (2) to provlde gene pools, and (3) where appropnate, to protect habitats of rare and endangered species of plants and animals (FSM 4063, R-5 Supplement **3)** The National Forest Management Act (NFMA) regulations direct that Forest planning recommend new RNA's for establishment to meet the needs of research, ecological study, and education The existing **RNA's** on the Forest are

- ***Cub Creek RNA*** 3,922 acres on the Almanor Ranger District representing the mixed conifer timber type in the Cascade Range province
- ***Blacks Mountain RNA*** 471 acres (in four small areas) representing the intenor ponderosa pine timber type, and 50 acres in one area representing the open sagebrush vegetation type, all in the Cascade Range province. All are on the Eagle Lake Ranger District within the Blacks Mountain Expenmental Forest

The Forest has six candidate RNA's:

- ***Green Island Lake*** 1,210 acres on the Almanor Ranger Distnct representing a bog aquatic/botanical type in the Cascade Range provmce.
- ***Indian Creek*** 3,890 acres on the Almanor Ranger District representing the blue oak/digger pine type in the Cascade Range province.
- ***Soda Ridge*** 1,295 acres on the Almanor Ranger Distnct representing the white fir type in the Cascade Range province
- ***Timbered Crater*** 1,117 acres (adjacent to 290 acres BLM land) on the Hat Creek District representing the Modoc Cypress type and Northern Basalt Flow Vernal Pool type in the Modoc Plateau province.
- ***Graham Pinery*** 660 acres on the Almanor Ranger Distnct representing the Pacific ponderosa pine type in the Cascade Range province
- ***Mayfield*** 980 acres on the Hat Creek Ranger Distnct representing the knobcone pine type in the Modoc Plateau province

Until final selection and approval of RNA's by the Regional Forester and Chief, the Forest will manage all candidate areas to maintain their inherent qualities

c. National Natural Landmarks

The National Natural Landmarks program was established to (1) encourage the preservation of sites illustrating the geological and ecologcal character of the United States; (2) enhance the educational and scientific value of the site thus preserved, and (3) foster a greater concern in the conservation of the Nation's heritage

The National Park Service conducts theme studies to identify potential sites that appear to meet the criteria for natural landmarks Direction for

Forest planning is to recommend to the National Park Service areas to be nominated to the National Registry of Natural Landmarks. In the Forest Plan or outside it, the Forest Supervisor can nominate sites that these theme studies identify as illustrating the diversity of the Nation's environment After evaluation by the USDI National Park Service, the Secretary of the Interior can then approve the nominations. Once an area is designated as a National Natural Landmark, the Regional Forester takes the appropriate steps to protect the important features. Provided the integrity of the landmark is protected, no restrictions are placed on managing the site under the multiple use concept On the Forest, **21** areas were studied as potential National Natural Landmarks. Seven of them (Bogard Buttes, Deep Hole, Devil's Parade Ground, Eagle Lake area, Hat Creek Valley, Murken Bench, and Red Lake Mountain) appeared eligible and are summarized in Table **3-2.**

Any area nominated as a NNL will be managed as such until action by the Secretary of Interior Upon designation, a NNL management plan will be prepared

Table 3-2

Potential National Natural Landmarks

Area	Feature	Size (Acres)	Ranger District
Bogard Buttes	Aligned cinder cones	**5,120**	Eagle Lake
Deep Hole	Pit crater	100	Hat Creek
Devil's Parade Ground	Black oak vegetation type	710	Almanor
Eagle Lake Area	Multiple features	**40,280**	Eagle Lake
Hat Creek Valley	Volcanism and faulting	7,700	Hat Creek
Murken Bench	Volcanism and faulting	**43,737**	Hat Creek
Red Lake Mountain	Rare quartz-basalt	**4,942**	Hat Creek
	Total	**102,589**	

d. Special Interest Areas

Special Interest Areas (SIA's) are broadly defined to include areas of unusual or outstanding botanical, aquatic, scenic, geologic, zoological, paleontological, cultural, or other unique characteristics that may merit special attention and management

Forest planning direction is to identify potential SIA's and establish recommended ones through the Forest Plans, as approved by the Regional Forester There are many areas on the Forest that may be appropriate for ***SIA*** status. Many potential areas have been initially identified. Screening to the final candidate list is based on (1) uniqueness and relative significance, and (2) special management need

Established **SIA's** are managed to protect their unique resources and, where appropriate, to foster their use and enjoyment by the public.

The supply of potential ***SIA's*** is gradually decreasing as man's activities alter the scenic and undisturbed qualities of many areas. Of the many potential sites analyzed, approximately 60 areas were identified as having significant values. Fourteen appeared eligible for **SIA's** and are listed in Table **3-3** Seven of them (Black Rock, Crater Lake, Deep Hole, Homer/Deerheart, Montgomery Creek, Murken, and Willow Lake Bog) are designated as SIA's by this Forest Plan. Any area approved as an SIA in the Forest Plan will be managed under an area management plan which will be prepared after Forest Plan approval

Table 3-3

Potential Special Interest Areas

Area	Feature	Size (Acres)	Ranger Distnct
Black Rock	Geologic	15	Almanor
Crater Lake	Geologic	200	Eagle Lake
Deep Hole	Geologic	100	Hat Creek
Deer Creek	Geologic	14,108	Almanor
Diamond Mountain	Scenic	5,399	Eagle Lake
Eagle Lake Area	Scenic/ Geologic	40,280	Eagle Lake
Hat Creek Valley	Zoologic/ Botanic / Geologic/ Scemc	7,700	Hat Creek
High Lakes	Scenic/ Geologic	17,054	Almanor
Homer/Deerheart	Scenic	1,480	Eagle Lake
Lake Britton	Cultural	600	Hat Creek
Montgomery Creek	Botamc	20	Hat Creek
Murken	Botamc	380	Hat Creek
Rock Creek Falls	Scemc	10	Hat Creek
Willow Lake Bog	Aquatic/ Botanic	110	Almanor
Total		87,546	

19. TIMBER

a. Introduction

The Lassen is known as a timbered Forest About 73 percent of it is forested with commercial conifers, including 770,110 acres (68 percent) which are available and tentatively suitable for timber production Available means that the land is not set aside as wilderness, expenmental forests, or research natural areas Tentatively suitable means that regeneration of the timber is possible on the land

Forest Land Description The forested land is divided into four major timber types. mixed conifer, eastside pine, red fir, and lodgepole pine The mixed conifer type occupies 57 percent of the productive land and is found on the west slope of the Cascade and Sierra Nevada ranges, and on the Forest's east side on north-facing slopes The eastside pine type occupies **29** percent of the forested land and is located in the northeastern portion of the Forest. The red fir type occupies 10 percent of the productive land and is found at the higher elevations, usually above 6,500 feet The lodgepole pine type occupies four percent of the productive land, and is found on wetter sites at middle and higher elevations

Size Class Distribution The Forest's timber size distribution leans toward the small and medium size classes, and away from the smallest and largest size classes Note that 78 percent is small sawtimber or smaller

Table 3-4

Size Class Distribution

Size Category	Diameter	Percent of Conifer Land
Seedlings/ Saplings	0-5"	4
Poles	5-11"	19
Small Sawtimber	11-24	55
Medium-Large Sawtimber	>24	19
Two-Storied Stands	Mixed	3

Suitability Classes Forested land suitable for timber management under the current timber plan is divlded into three intensities of management full, modified and limited The lands available for full or modified timber management (about 80 percent of the sutable land) can be regenerated readily with even-aged harvest methods, including clearcutting, seed tree, and sheltenvoodcutting Intermediate cutting methods (commercial thinning and sanitation harvests) are also used.

The land available only for limited timber management (about 20 percent of the tentatively-suitable forested land) is either (1) too rocky to be

regenerated artificially following an even-aged harvest; (2) poorly stocked eastside pine; or (3) devoted pnmanly to other resource values Timber stands on poor-siteland. about five percent of the forested land, have low density of trees and slow growth Artificial regeneration is expected to be successful, but may require one or more replantings Harvests on both rocky and poorly stocked land consist of salvage of mortality or removal of high nsk trees.

Timber Sell Volume Average annual sell volume under the 1975 Timber Management Plan was 179MMBF, adjusted to 175 5MMBF in 1978 Sale size has ranged from under 100,000 board feet to over 35 million board feet

Logging Systems Tractor logging is, by far, the most common technique on the gently-sloping majonty of the Forest It is suitable for slopes up to about 35 percent, or 20 percent on cinder cones. Cable logging is being used more often as harvests extend into steeper, remote areas. Helicopter loggmg is used in the relatively infrequent cases where both tractor and cable loggmg would be prohibited by physical, envlronmental, or economic factors

Regeneration Regeneration of trees is achieved by both natural and artificial methods. Artificial regeneration is used mainly on lands that are suitable for full timber management and where the pnmary objective is timber production. Forest land that is poorly stocked due to past harvesting, fires, or pests will continue to be regenerated

Site Preparation Site preparation for the regeneration of harvested stands is done by prescribed burning, mechanical means, chemcal means, or a combination of those techniques Mechanical site preparation (tractor piling, windrowing) is the most common. Broadcast burning and chemical methods are sometimes used

Timber Stand Improvement Most timber stand improvement (TSI) on the Forest is thinning by mechamcal shearing and plantation release from competing vegetation. The slash is treated either by piling and burning, or by chipping for use by local power plants

Even-Aged Management Long range harvest schedules of the 1960 and 1975 Timber Management Plans were based on even-aged timber management Regeneration techniques utilizing clearcut, shelterwood, and overstory removal are even-aged management. Until recently, most of the regeneration on the Forest consisted of overstory removal Many stands which have had repeated intermediate harvests in the past are now in need of regeneration.

Biomass and Commercial Thinning Recently, commercial thinning and biomass sales have become commonplace. Dense natural stands of conifers are thinned to promote stand vigor. Much of this harvesting is done by mechanical shears.

Sustained Yield; Non-Declining Flow Congressional and Forest Semce direction require that National Forest timber he managed under the principles of sustained yield capacity (a level that continues indefinitely) and non-declimng flow (timber outputs can increase over time, but cannot decrease) Forest Planning direction allows analysis of departure from non-dechmng flow, but not from sustained yield

Herbicides Aerial application of herbicides on the Forest for plantation site preparation or release began in 1965 No spraying has been done since 1978. In March 1989, the Pacific Southwest Region of the USDA Forest Semce issued a Final EIS for ***Vegetation Management for Reforestation*** The EIS assumes a full range of vegetative management methods for reforestation and timber stand improvement Throughout California, appeals and court cases have delayed proposed herbicide projects. Timber yields of regenerated stands would be expected to drop, and/or costs of vegetative management (site preparation and release) would increase, if the use of herbicides was restricted. On the Forest, mechanical and hand cutting of brush started in 1980 and has continued on an increasing scale

Christmas Trees Christmas trees come from surplus trees found in sapling and pole stands that need thinning or in the form of unsaveable small trees under a sawtimber overstory. The number of trees sold for commercial Chnstmas tree sales has stayed relatively steady over the last few years Personal use permits have been sold for several years on the Ranger Distncts. Demand is strong and is increasing.

b. Supply

According to the latest inventory (1980), the Forest has approxlmately 11.4 billion board feet of standing timber, roughly unchanged from the previous (1970) timber mventory on the tentatively suitable acres. The Forest supplies timber to about 15 local mills

The Forest sells a relatively constant volume of timber each year, but annual harvest volumes fluctuate with market conditions. When demand for lumber and wood products is down, purchasers refrain from harvesting the timber until demand increases

From 1970 through 1990, an average of 174 million board feet a year have been harvested from the Forest This represents about one-fifth of the harvest in the impact counties, and 4.5 percent of the State's Because harvests in the State and impact counties have declined in recent years, the Forest's share has grown As a result of the depressed timber market, the Forest's harvest fell to 88 million board feet in 1982.

c. Demand

Most of the timber harvested from the Forest is processed in mills mthin the impact counties of Lassen, Plumas, Shasta, and Tehama Over the next 50 years, the wood product markets are expected to place greater demands on timber supplies

The bid value of timber on the Forest has been among the highest in the Region for several years because of high industry demand, high-value tree species, and low loggmg costs. Demand is high because mill capacity in the local area is about three times the Forest's annual sell volume, leading to highly competitive bidding on most sales The high value tree species are ponderosa/Jeffrey pine and sugar pine, which make up about 25 percent of the Forest inventory Loggmg costs are low because most of the Forest has easy to moderate terrain, few stream crossings, and extensive road networks As the average size of logs harvested decreases, bid values per unit will also decrease In the future, it is expected that all timber offered for sale by the Forest will be sold, although the bid price and volume actually harvested will continue to fluctuate

20. VEGETATION AND DIVERSITY

a. Vegetation

In addition to the commercial forest discussed under Timber, the Forest contains substantial areas of other vegetation This may be classified into broad types Abundant vegetative types include western juniper and noncommercial conifers, hardwoods, chaparral, sagebrush, and herbaceous vegetation. Intermingled within these types are 12,000 acres of ripanan habitat. The extent of each of the vegetation types on the Forest is shown below

Table 3-5

Vegetation Types

Types	Percent of Forest
Conifer Forest	73
Chaparral	8
Western Juniper/ Non-Commercial Conifers	5
Hardwoods	5
Sagebrush	4
Herbaceous Vegetation	3
Water and Barren	2

These types are descnbed in the followmg sections.

Conifer Forest About 825,000 acres (three-quarters) of the Lassen consists of the four major types of conifer forest. mixed conifer, eastside pine, red fir, and lodgepole pine. Red fir, mixed conifer and eastside pine are climax types, and their species compositions naturally remain fairly constant over time The main species in the mixed conifer type are white fir, ponderosa, Jeffrey and sugar pine, Douglas-fir, and incense cedar. Eastside pine consists mainly of ponderosa and Jeffrey pine Lodgepole pine grows in pure stands on moist "flats" and around lakes at higher elevations

Western Juniper and Non-Commercial Conifers The western juniper type is normally located between the eastside pine and sagebrush

shrub types in the northern half of the Forest. It often exists as a sparse overstory for sagebrush vegetation Digger pines occupy dry, rocky areas on the west side, usually below the elevation of commercial conifers Knobcone pine is found on similar sites, but only on the northernmost edge of the Forest

Hardwoods This includes about 13,000 acres of the black oak habitat type, 36,000 acres of blue oak savannah, and 4,000 acres of Oregon white oak on the Forest Smaller but significant acreages of the npanan deciduous type occur, including maple-dogwood, cottonwood-alder, quaking aspen, and cottonwood associations

Black oak is usually interspersed with the wedgeleaf ceanothus, blue oak, and annual grass types in the front country foothills (Deer, Mill, and Antelope Creek areas) and in the Pit River drainage The blue oak savannah intermixes with foothills chaparral, black oak, and annual grasslands on the western slope of the Forest between 500 and 3,000 feet Oregon white oak grows on low elevation slopes of the front country and along the Pit River. The remaining hardwood types are associated with riparian areas

Vegetational changes are occurnng in the hardwood type Fire suppression has allowed some black oak stands to be invaded by conifers, which could lead to a shading-out of oaks Neither blue oaks nor white oaks are reproducing successfully, and white oak stands are often stunted, old, and dense Riparian hardwoods, especially aspen, also lack adequate regeneration, and many existing stands are being eliminated by old age. These types can be perpetuated through application of silvicultural prescriptions and prescribed burning

Although not intense, demand for hardwood and woodland types includes providing livestock forage, wildlife habitat, watershed protection, fuelwood, and vlsual quality Presently, the Forest limits cutting standing oaks, live or dead, for firewood

Chaparral Montane chaparral occupies 33,000 acres The type is composed of mixed shrub and greenleaf manzanita communities Stands are generally scattered throughout the conifer zone above 3,000 feet Montane chaparral is important in provlding erosion control, cover for wildlife, and limited forage for wildlife and livestock. Opportunities exist to burn or crush these areas to provlde more livestock and wildlife forage, reduce fuels, and increase habitat diversity

Foothill chaparral, consisting primarily of wedgeleaf ceanothus, covers 53,000 acres of Forest land It grows most commonly below 3,000 feet in the front country foothills and in the Pit River drainage The wedgeleaf ceanothus is adapted to fires every **15** to 20 years Because of fire suppression, many of the stands are now decadent. The Forest has recently begun burning wedgeleaf ceanothus with prescnbed fire. Burns have been multi-agency efforts covering several hundred to several thousand acres, including pnvate land and lands admnistered by other agencies This burning increases livestock forage and stream flow, reduces fire hazard, and improves winter range for deer herds

Demand for foothill chaparral management comes from both the pnvate and public sectors. Ranchers want foothill chaparral burned to increase the amount and quality of livestock forage. The California Department of Fish and Game actively supports a burning program to help meet wnter range objectives for deer herds. Coordination and cooperative management between National Forest and pnvate lands could he formalized in Coordinated Resource Management Plans

Sagebrush The sagebrush formation consists of 26,000 acres of big sage, 1,500 acres of low sage, and 20,000 acres of bitterbrush. Most occurs on relatively flat topography in the northern and northeastern portions of the Forest. Sagebrush is used mostly for livestock grazing and wldlife habitat Sagebrush density has expanded at the expense of forbs and grasses Herbage production on certam sagebrush sites can be increased by prescribed burning, spraying with herbicides, chaining, plowing and/or changing livestock management

Demand for treatment of sagebrush is high since it increases livestock forage and habitat diversity Currently, the Forest plows and seeds about 200 acres per year to grass This rate could be increased substantially, if ways could be found *to* make it cost effective

Herbaceous Vegetation Annual grasslands, perennial grasslands, and sedge-rush habitats cover 6,000, 10,000 and **16,000** Forest acres, respectively. Annual grasslands occur in the front country foothills and near the Pit River Perennial grasslands are scattered in the forested portions of the Forest. The sedge-rush type grows in seasonal wetlands on the northern and eastern portions of the Forest

Most of these areas are not in satisfactory condition Additional acres of herbaceous vegetation could be temporanly created by type conversion involving the use of prescnbed burning, herbicide spraying, mechanical treatment and modified grazing practices

Local demand is high for herbaceous areas because they are some of the most productive for livestock forage and wildlife habitats

b. Diversity of Plants and Animals

Diversity of plants and diversity of animals are closely related Generally, the greater the diversity of vegetation, the greater the diversity of animals Diversity may be evaluated according to three components nchness, *evenness*, and pattern.

Richness Animal species nchness on the Forest is represented by 361 vertebrate species These include 24 species of amphibians and reptiles, 224 species of birds, 29 species of fish, and 84 species of mammals Species nchness has probably remained fairly stable over the last 100 years

Plant community richness can be represented by the number of different habitat types on the Forest The presence of 17 habitat types on the Forest indicates that the Lassen is a diverse Forest Animal species richness is also high, as a result of the diversity of habitat types

Another aspect of richness is the abundance of certain special habitat features within habitat types This within-stand diversity component refers to the numbers of snags, down logs, hardwoods, shrubs, and overall pattern of vertical vegetative diversity within conifer forest stands Currently, within-stand diversity is generally moderate to high Over time, there is concern that this type of diversity could decline

Evenness Evenness of both plant and animal communities can be denved from the proportions of the Forest in each vegetation type. A large majority of the Forest is in the conifer habitat types, much lesser amounts are in shrubs, oaks, nparian woodlands, and herbaceous types

Evenness can be expressed by dividing formations into categories based on the size, density, and age of vegetation type For example, there is a disproportionate share of conifer forests in very small or medium sized trees, and relatively few acres in old, large diameter trees Animal species that favor young timber stands, therefore, are more abundant overall than species that prefer old stands As the amount of old growth forest continues to decline, populations of animal species that favor old growth communities will also decline The chaparral and sagebrush formations are dominated by older age classes as a result of fire suppression Over 83 percent of these types are in an overmature condition (over 40 years of age) while only eight percent is in young vigorous condition (0-20 years)

Pattern Pattern refers to the physical location of diverse vegetative formations and how they intermingle Grasslands, chaparral, and oak woodlands dominate the lower elevations Eastside pine and sagebrush dominate the northeastern portion of the Forest, and mixed conifer and true fir forests dominate at the middle to high elevations **As** a result of past loggmg and fire management, younger stands are more common in the pine type and on flatter ground, while older stands are mainly on steep terrain within the mixed conifer and red fir types Sizes of stands created by fire vary widely, stands regenerated by loggmg are small, usually 5-30 acres Most brush stands at lower elevations are large, at higher elevations they vary widely in size

Plant and animal diversity on the Forest is high If present trends continue, habitat for species that favor younger vegetation in both forest and shrub types will increase, while habitat for species favonng intermediate and older vegetation will decline

21. VISUAL *RESOURCES*

a. Introduction

The vlsual resource is how the Forest looks to those passing through or recreating in it The Forest lies m th m three different landscape provinces and has a highly diverse visual resource. The southernmost ten percent of the Forest is in the Sierra Nevada landscape province, the westernmost ten percent is in the Sierra Foothill landscape province, and the remainder is in the Northeast Volcanic landscape province, which includes portions of the Modoc Plateau and the Southern Cascade Mountains geomorphic provinces.

These general landscape types provide the settings **for** points of interest enjoyed by Forest vlsitors and permanent residents The natural appearance of all these landscapes contributes significantly to their populanty and appeal

b. Demand

The California State Scenic Highways Master Plan recognizes Highways 89 and 299 as potential State Scenic Highways The Tehama County General Plan recognizes that Highway 32 along Deer Creek has county-level scenic significance Highway 44 with its old-growth pines has been identified as a potential Scenic Byway. **A** loop consisting of Highways 44, 89, and 36 is currently under study as a Scenic Byway.

In 1990, there were about 1,242,600 RVD's (Recreation Visitor Days) of recreation use on the Forest. Activities that are enhanced by scenic quality, such as sightseeing, dnvlng for pleasure, and hilung, represent 70 percent of that total recreation; the recreationist's concern for scenery is known to be high. Studies project that demand in activities associated m th visual quality will increase significantly by the year 2000.

c. Visual Resource Management

The Forest Service has developed a vlsual management system to assess the current and potential condition of the vlsual resource. **It** includes two baseline inventones the Initial Visual Quality Objectives (IVQO), and the Existing Visual Condition (EVC)

Visual Quality Objectives result from a combination of three intermediate inventones: the vlsual diversity of the landscape (variety class); the public's concern for visual quality (sensitivity level); and the distances at which the landscape is viewed by Forest users (seen area distance zone). They are a management tool to provlde the highest possible vlsual quality in concert with other resource needs Visual quality objectives guide all ground and vegetation-disturbing projects.

Variety Class The Forest's landscape is predominantly common and minimal, with only 10 percent distinctive The large amount of minimal vanety landscape is found in the northeastern portion of the Forest with its flat terrain and few water bodies The distinctive landscapes are found mostly in the southwestern portion and surrounding Lassen Volcanic National Park

Sensitivity Level An inventory of current use patterns indicates that 56 percent of the Forest has high, 17 percent average, and 27 percent low sensitivity level.

Distance Zones **For** Seen Areas Distance zones, the distance from viewer to the landscape, are foreground (up to 1/2 mile), middleground (1/2 to 4 miles), and background (over 4 miles). The area potentially seen from each road and use area has been mapped by &stance zone and sensitivity level

d. Visual Quality Objectives

The initial Forest inventory reflected Visual Quality Objective's (VQO's) in the following proportions:

Table 3-6

Visual Quality Objectives

VQO	Management Actinties Are	Percent of Forest
Maximum Modification	Dominant, but are not primary focal point	10
Modification	Dominant, but conform to natural character	27
Partial Retention	Visually subordinate to natural character	39
Retention	Not visually evident (natural appearance)	15
Preservation	Prohibited (wilderness)	9

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e. Existing Visual Condition

Histoncally the Forest has presented a largely undisturbed, natural landscape to public view, but the visual resource trend has declined somewhat for the last **40** years as a result of road construction, timber harvesting, structures, brush field clearing, and utility corridors

The Existing Visual Condition (EVC) inventory is a mapping of the visible degrees of disturbance to the natural landscape The areas by EVC on the Forest are

Table 3-7

Existing Visual Condition

EVC		Percent of Forest
VI	Drastic Disturbances	0 **01**
V	Major Disturbances	0 65
IV	Disturbances	3 00
III	Minor Disturbances	13 00
II	Unnoticed	58 00
I	Untouched	25 00

The EVC conditions **1** through **5** correspond directly with the five VQO's (Preservation, Retention, Partial Retention, Modification, and Maximum Modification, respectively). In 1982, **83** percent **of** the Forest's landscape has not yet been noticeably changed from its natural character

f. Trends

Future problems in managmg the vlsual resource will most likely involve conflicts between commodity production and visual quality. Demands for recreation and scenic natural environments are expected to increase As the need for Forest commodities increases, potential conflicts between vlsual quality and commodity production are likely to occur

Timber Management In the past, the Forest has used mostly partial cut harvests Future timber management will require more regeneration harvests (mostly shelterwood, clearcutting and group selection) with a trend toward harvesting steeper slopes Conflicts with visual quality in sensitive areas will increase

Energy and Minerals Proposed small hydroelectric projects, geothermal, oil and gas wells and facilities, mining, and accelerated biomass utilization will also impose new impacts on visual quality

Old Growth Other conflicts may result from increasing demand to maintain old growth stands Some of the large, old pine and fir trees remaining on the Forest are along highway corndors, and create a lasting public image along roads such as Highways **44** and **36** Corndor plans need to be prepared to guide vegetative management along the most heavily used roads, trails, and at the Forest's key recreation use areas

Ski Area An issue that could affect the nsual quality is the potential Carter Bowl Ski Area development on Butt Mountain The north side of Butt Mountain has good physical potential for an alpine ski area Butt Mountain lies within an unroaded area and has a natural appearance Any change to the natural landscape character may be viewed as a decline in scenic quality In addition, ski area users would bring increased demand for scenic quality in the surrounding

Forest lands viewed from the ski area Such questions will be analyzed if and when a specific development proposal is made Any development will need to meet the visual quality objectives adopted in the Forest Plan

g. Opportunities

Ways to improve management of the Forest's natural beauty are to:

1 Create special scenic areas with specific objectives and operating requirements

2 Maintain a high level of employee training and knowledge in the application of visual resource management

3 Rehabilitate lands that do not meet the adopted VQO's.

4 Use prescribed fire to restore natural appearance to landscapes

5 Acqmre private lands in key public view areas.

6. Prepare and implement corridor plans for high sensitivity travel routes or use areas

7 Use visual enhancement measures to improve the scenic quality in Partial Retention and Retention areas, where consistent with other resource objectives

22. WATER AND RIPARIAN AREAS

a. Water

1. Introduction

Forest lands include hundreds of streams, including several major nvers and creeks Forest lands are also watersheds for many lakes, including natural lakes such as Eagle Lake, reservoirs such as Lake Almanor, and many small alpine and shallow pothole lakes in the Caribou and Thousand Lakes Wildernesses and other high-elevation areas Water flowing from the Forest is vital for fisheries, wildlife, riparian habitat, livestock, and downstream uses The Forest includes important tributaries used by anadromous fish of the Sacramento River system—Deer Creek, Mill Creek, and Antelope Creek The source of all the Forest's water is precipitation which falls mainly during the winter, summers are very dry Although streams abound on the southern and western sectors of the Forest, the northern and eastern portions have scant surface runoff and few streams Water quality in Forest streams and lakes is good, it meets State standards in all major streams.

2. Supply

Quantity The Forest has 1,650 miles of streams Forest lands produce a total average stream flow of 1,308,000 acre feet each year, not including flows from adjoining or intermingled pnvate lands Forest streamflow could be deliberately increased in only two ways (1) by clearcut harvesting of timber, and (2) by prescribed burning of chaparral At most, these activities could increase Forest-wide water yield by a margmal two percent above current levels. While increased timber harvesting can increase total annual runoff, it may actually decrease summer stream flows because of the earlier snowmelt and runoff that result from the loss of shade

The Forest can develop water sources to (1) better utilize the water that does run off or (2) tap groundwater sources The Forest maintains livestock and wildlife water holes on the dry east side, as well as stock ponds and wells in other dry, upland areas

Quality Although water quality is acceptable in all Forest streams and lakes, there are emsting and potential water quality problems Road construction and clearcutting can cause sedimentation in streams, which lowers their water quality Microorganism (*Giardia*) contamination of surface waters, livestock grazing around water, hazardous spills from highways, recreation residences, campgrounds, and geothermal and small hydroelectric development are all threats to water quality Forest personnel inspect most of the known problem sites regularly and correct deficiencies when detected

Water quality is currently maintained and improved through the application of State-Certified and EPA-approved Best Management Prac-

tices (BMP's) for controlling non-point sources of pollution to surface water Methods and techniques for applymg the appropnate BMP are identified during on-site investigation of Forest projects that have the potential to degrade surface water quality More detailed discussions of BMP's and the implementation process are presented in Appendur Q

In a resource project such as a timber sale, the Forest applies the State-approved Best Management Practices (BMP's) to minimize that project's potential adverse effects on water quality Forest personnel also analyze cumulative watershed impacts, considering the additive effect of many land disturbances over time and space Such analysis enables decision makers to keep the overall disturbance in any watershed below a "threshold" level that could lead to adverse water quality effects

Presently, all but two of the Forest's fourth order (see Glossary, "stream order") watersheds are well below the 15 percent equivalent roaded acres (ERA) threshold for accelerating damage ERA is the amount of disturbance equivalent to that produced by new road construction Exceptions are two small, heavily-impacted watersheds tributary to Lake Britton on the Pit River Some of the subwatersheds for Deer Creek, the Susan River, Mill Creek, Antelope Creek, and other streams have occasionally approached the 15 percent ERA The Forest's watersheds contain a number of Class I streams (see Glossary, "stream class") Some of these are important fisheries for native game species, and a few are spawning streams for anadromous fish Some of these previously disturbed sub-watersheds still flush sediment into their receiving streams during spring snowmelt, although their ERA condition is now below 15 percent

Increases in regeneration harvest area would increase disturbance in most watersheds Because planning resources are limited, cumulative impact analysis focuses on protecting Class I streams

Cumulative impact analysis is used in several ways

(1) To adjust project scheduling, so that adverse impacts are spread out through time,

(2) To determine the most effective places and objectives for project mitigation, and

(3) To locate and priontize watershed improvement projects so that cumulative impacts are quickly reduced

Private lands comprise up to **66** percent of some major watersheds on the Forest The cumulative effects BMP is most effective when more than two thirds of a watershed is National Forest When less than 50 percent of a watershed is National Forest, the beneficial effects of reducing cumulative effects on National Forest land may be totally masked Watersheds supporting important fishenes that contain large areas of pnvate ownership include Burney Creek, Warner Creek, Lake Almanor, Antelope Creek, and Upper and Middle Deer Creek

A land disturbance index is used to compare different alternatives' long term effects on the land The index adds the relative contributions of roadbuilding, prescribed fire, and timber harvesting, to produce the Forest's "equivalent roaded acres" It includes activlties that occur in both sensitive and non-sensitive watershed areas (see Glossary, "sensitive watershed lands")

Quantity and Quality Although both timber harvesting and chaparral burning increase water flow (quantity), they differ in their effects on water quality because of timing Timber harvesting, occurring mostly above the snow line, causes earlier snowmelt and therefore higher spnng runoff This can reduce water quality Chaparral burning occurs mostly below the snow line and primarily increases the summer flows It has little effect on water quality, except that minor amounts of sediment may wash from burned watersheds into streams

3. Demand

Quantity Most of the Forest's streamflow that goes east is utilized by the Lassen Irngation

District and other agricultural users Much of the streamflow that goes west flows into the Feather River or the Pit River, each of which has a series of PG&E hydroelectric facilities Some of the water from the northwestern part of the Forest also reaches hydroelectric stations at Shasta and Keswick dams Summer flows are particularly valuable for both agricultural and for hydroelectric purposes

Water flowing west into the Central Valley has a basic value of $59 per acre foot, reflecting the Valley's intensive agricultural use for orchards, rice, and other crops Water flowing east has a value of only $12 per acre foot, reflecting less-intensive agricultural uses downstream such as growing hay and irrigating pasture The reservoirs and hydroelectric facilities on many west-side streams add different values to water in those streams Water that flows into Mountain Meadows Reservoir passes through six hydroelectric plants before reaching the Central Valley and has a total value of $131 per acre foot

The Forest Service holds about 350 water nghts for uses varying from stockponds and wetlands to highway rest stops and campgrounds The Forest has adequate water to meet most of its on-Forest needs, but demand exceeds the supply for convenient water sources for road-dust abatement and fire protection Although the Forest has several high-quality fisheries, no adjudications or other water rights have been established to protect instream resources

The Lassen National Forest contains no municipal watersheds that are managed under any type of agreement Some streams have diversions that supply individual, domestic uses The most "municipal" of these diversions is the water system shared by the community of Mineral and the nearby administrative site for Lassen Volcanic National Park The water comes from Martin Creek and nearby springs Water quality in Martin Creek is protected by designating streamside management zones and by applying other BMP's Upstream activities have included roadbuilding and timber harvesting in past years The envlronmental analyses for these projects considered possible impacts of activities on Martin Creek's water quality and ways to mitigate those effects

Quality Demand for water quality derives from the value of clean water for Forest rerreationists, fisheries, and downstream users The State sets water quality standards to which the Forest adheres by implementing the BMP's Timber harvesting and road buildiig are generally kept away from nparian areas Forest crews have also worked in several watersheds to rehabilitate damaged channels and npanan vegetation

Watershed improvements are needed on an estimated 1,500 acres This area will be better assessed by the Watershed Improvement Needs inventory, to be completed within the first decade of this Plan After this micial backlog of restoration work on known problem areas is completed, there will remain a long-term need to work on smaller areas indefinitely, both to maintain existing improvements and to solve minor new problems This long-term work is estimated at five acres per decade

b. Riparian

Introduction

Riparian areas occur in stream corridors, along lakeshores, and around springs, wetlands, and wet meadows The Forest has over 12,000 acres of ripanan areas, including about 2,600 acres of perennial stream corridors, 3,700 acres of lakeshores and wetlands, and 4,300 acres of intermittent and ephemeral stream corndors Vegetation in riparian areas is often aspen, alder, or willow, and larger and more vigorous trees of the same species as found on adjacent uplands Ripananvegetationis cnticalformaintaimngwater quality, fishenes, and wildlife habitat Human activities in npanan areas include camping, fishing, hikmg, mining, timber harvesting, road building, boating, and aesthetic enjoyments

Riparian areas are protected by establishing streamside management zones in timber sale areas and by regulating livestock grazing Riparian areas have been damaged in places by livestock grazing, roadbuilding, skidding logs, timber harvest, fire, or temporary crossings. Some problems have been corrected, but other problems persist Restoration includes such measures as seeding with grass, planting riparian hardwoods (willows, aspen, alders, and/or cottonwoods), building streambank protective measures, and fencing to exclude livestock

Some enhancement work to cure persistent riparian problems has been done in recent years using watershed, range, timber sale area improvement (KV) or fisheries funding. Considering practical limitations of funds, time and labor, restoring **20** acres of riparian habitat each year is a feasible effort.

Streamside Riparian Currently, livestock grazing is damaging riparian areas in some stream corridors, especially in mid to late summer. The effects of grazing vary by area Damage from trampling of streambanks and foraging on young hardwoods is significant on some streams

Lakeshore Riparian The Forest's lakeshore riparian areas vary greatly in condition Recreation, livestock grazing and fluctuating water levels are the major causes **of** disturbance around larger lakes, especially where the lakeshores are near roads Trails, campsites, trampling, heavy grazing, and littering are the main types of damage The riparian areas around potholelakes and other small lakes are important buffers against their pollution from nearby activities

Opportunities The Forest cannot increase the quantity of stream or lakeshore riparian areas except by budding new wetlands Vegetative condition and diversity can be improved in existing riparian areas by improving bank stability, shade patterns, canopy heights, crown density, and covering effects of vegetation Beneficiaries include fish, mldlife, range, and recreationists

Opportunities exist to better coordinate fire, grazing, and logging practices to avoid reducing the extent and quality of available riparian area, and to provide mitigation measures to prevent small hydroelectric projects from significantly reducing the amount of water in important stream reaches

As mature timber is harvested from upland areas, unlogged riparian areas will take on added importance for hunting, fishing, hiking, camping, and wildlife habitat, especially for old-growth species As demand intensifies, the value of riparian areas will increase Management efforts must intensify accordingly to better protect these sensitive areas

23. WILD AND SCENIC RIVERS

a. Introduction

A Wild and Scenic River is designated by Congress to preserve certain natural and recreational river values as defined in the 1968 Wild and Scenic Rivers Act The Act allows for three levels of river classification "wild", "scenic" and "recreational". Free-flowing condition and "outstandingly remarkable values" are required for a river segment to be eligible for Wild and Scenic River consideration The degree of naturalness determines which classification is appropriate.

The 1981 Nationwide Rivers Inventory (NRI) identified by physiographic region those rivers (or segments) in a relatively natural and undeveloped condition Forest Service direction requires that the Forest planning process assess eligibility and suitability of those rivers listed on the nationwide inventory A Forest determines a river's eligibility and suitability by applying standard criteria from the Act and the agency's published implementing guidelines

b. Candidate Rivers

The three rivers that cross Forest land and appear in the NRI are Deer Creek, Mill Creek, and Big Chico Creek. Additionally, the public requested that several other rivers on National Forest land be considered for Wild and Scenic status including Antelope Creek, Cub Creek, Butte Creek, Hat Creek, Feather River, and Pit River After review of the eligibility and suitability criteria, the Forest concluded that three rivers should be considered as candidate Wild and Scenic Rivers. Antelope, Deer, and Mill Creeks The assessment of the candidate rivers is described in FEIS Appendix **E,** Wild and Scenic Rivers Evaluation

Antelope Creek Antelope Creek begins on the slopes of Turner Mountain, flows southwest through mured conifer forest, oak woodlands, chaparral, and grasslands, and enters the Sacramento River It cuts through a narrow secluded canyon lined with riparian vegetation The area has cultural resource significance, challenging trout fishing, and important habitat for the remnant runs of spring-run chinook salmon and steelhead The length of the studied segment is

seven miles of the North Fork and seven miles of the South Fork Two miles are on private land.

Deer Creek Deer Creek flows southwest through the Forest into the Sacramento River It cuts through rugged, forested mountains and deep canyons with spectacular geologic formations The canyon has nationwide cultural significance because it was part of the area inhabited by Ishi, the last survivor of the now vanished **Yahi** Yana Indian tribe Deer Creek offers valuable spawning grounds for spring-run chinook salmon and steelhead The total length of the inventoried river within the Forest boundary is 38 miles, 31 of which flow through National Forest lands

Mill Creek Mill Creek flows southwest through meadows and dense forests, through a spectacular basaltic canyon, and into the Sacramento River. Mill Creek also has an anadromous fishery, and contains the highest elevation spawning areas for salmon in California **As** part of Ishi's home territory, it also has high cultural significance The total length of the inventoried river is 32 miles, of which 26 5 miles are on National Forest lands.

24. WILDERNESS AND FURTHER PLANNING AREAS

a. Introduction

As provided by the Wilderness Act of 1964, a wilderness **is** a unit of undeveloped Federal land designated by Congress It retains its primeval character without permanent improvements or human habitation Wilderness is protected and managed to preserve its natural condition On this Forest, the Wilderness Act of 1964 designated the Caribou and the Thousand Lakes Wilderness Areas

Twenty-one unroaded areas on the Forest were studied as potential new wilderness areas in the 1977-79 RARE II process The California Wilderness Act of 1984 added 1,800 acres to the Caribou Wilderness and designated the new Ishi Wilderness, bringing the Forest wilderness total to 78,060 acres or seven percent of the Forest The Forest Plan recommends either wilderness or non-wilderness for the areas assigned to further planning by the California Wilderness Act of 1984

b. Existing Wilderness

Caribou Wilderness The 20,625 acre Caribou Wilderness lies along the eastern boundary of Lassen Volcanic National Park and shares many of the same features It has gentle, rolling, forested topography, many forest-fringed lakes, and 18 miles of trails. In 1991, it received 14,600 recreation visitor days (RVD's)

Thousand Lakes Wilderness The Thousand Lakes Wilderness is located northwest of Lassen Volcanic National Park. It offers many clear lakes, 16,335 acres of contrasting topography and vegetation types, and 22 miles of trail revealing volcanic and glacial formations, rocky ravines and mountain slopes, open meadows, and stands of lodgepole pine and red fir. The wilderness is dominated by the 8,677 foot Crater Peak, the highest point on the Forest In 1991, the wilderness received 5,500 RVD's of use.

Ishi Wilderness The 41,100 acre Ishi Wilderness lies in the southwest portion of the Forest in the transitional zone between the warm Sacramento Valley and the Sierra Nevada. It is the only wilderness that preserves a major area of the Sierra/Cascade foothill ecosystem The landscape is a network of flat ridges, sheer canyon walls, and deep ravines, as well as caves, pillars, and rushing rapids in the creek bottoms. Mill and Deer Creeks flow through rugged canyons The area is used for a variety of activities including hiking, camping, hunting, fishing, and grazing. Prior to its wilderness designation, annual dispersed recreation was estimated at 6,100 RVD's including 2,200 RVD's of motorized recreation Motorized use is now prohibited, and non-motorized use will probably increase as the area becomes publicized and as demand increases for primitive recreation In 1991, the wilderness received 7,800 **RVD's** of use

L Wilderness Activities
Recreation use in the Caribou, Ishi and Thousand Lakes Wildernesses represented 185 percent (27,900 RVD's) of the total recreation use on the Forest in 1991 The use data are based on a combination of self registration at trailheads, vehicle counts and one-on-one contacts with users A permit system was used at one time and

may be reinstated in this planning period Permits provide specific information on numbers, sizes of groups, purpose of visit, boats, and horses using the areas. Wilderness Permits are not presently required on this Forest.

At the time permit information was available, wilderness use included camping (35.8 percent), hiking (26.5 percent), and fishing (23.5 percent) Use in the Ishi Wilderness probably will follow a different pattern from the Caribou and Thousand Lakes Wildernesses Ishi is snow-free and available for use any time of the year.

2. Wilderness Demand

Although recreation is the most common use of wilderness, many people enjoy wilderness vicariously (Fisher, et al 1972) They may never set foot in mlderness, but still value its existence Other wilderness uses include scientific, educational, therapeutic, and cultural actinties Despite short-term fluctuations, demand for wilderness has been stable and growing in the long run The projected rate of increase in wilderness use on the Forest will closely follow the rate of population increase in California

3. Existing Management

The Canbou Wilderness Management Plan and the Thousand Lakes Wilderness Management Plan (USDA 1976, 1977) gude the administration of the two pre-1984 wildernesses Both plans contain specific direction to implement three management objectives common to both wildernesses

1 Perpetuate natural conditions

2 Provlde for recreation consistent with natural processes, pnmitive conditions, and opportunities for solitude.

3 Provlde freedom from rules and restrictions while preserving the wlderness resource

The Forest prepared the Ishi Wilderness Implementation Plan in 1989 comprising these same management objectives A supplement will be prepared to address two remaining issues grazing and inholder access Updated Wilderness Implementation Plans will tier to this Forest Plan and serve to help implement its general direction

In the Canbou and Thousand Lakes Wildernesses, concentrations of backpackers and horse groups at popular sites can damage fragile meadows and lakeshores This localized overuse is a management concern, and conflicts between hikers and horse riders is a potential problem. A common health hazard exists from water sources contaminated by *Giardia* microorganisms As use increases, the Forest will need to assess the extent of such conflicts or damage, and amend the exlsting management plans to maintain wilderness values

The 1982 Lassen Fire Management Plan for the Canbou Wilderness and adjacent Lassen Volcanic National Park allowed fire, under prescnbed conditions, to resume its natural role in Lassen Volcanic National Park and Canbou Wilderness ecosystems In 1988, all prescribed natural fire plans were puton hold until a committee could be formed to review policy, direction, guidance criteria, and processes used in managmg prescnbed fire This was a result of the problems experienced during the 1988 fire season and the Yellowstone fires In 1989, the renew and final direction on a fire management policy was released The Forest and Lassen Volcanic National Park met to revise the 1982 plan with the new direction The revised plan should be approved and in place by June 1992 The Forest is prepanng similar Fire Management Action Plans for the Thousand Lakes and Ishi Wildernesses

c. Further Planning Areas

In 1984, the President signed the California Wilderness Act On this Forest, the Act designated three roadless areas as wilderness, six as further planning areas, and 12 as non-wilderness Three of those non-wilderness areas had been designated as further planning areas in RARE II and nine had been recommended as wilderness The non-wilderness areas are not managed for other multiple use purposes due to public concerns

The Forest's six further planning areas are summarized in Table 3-8 For detailed, complete descnptions of each, see Appendix C in the FEIS Net acres refer to only National Forest land within the further planning area, while gross acres refer to both National Forest and privately owned lands

Table **3-8**

Further Planning Areas

Name	Gross Acres	Net Acres
Butt Mountain	8,300	8,300
Heart Lake	9,289	9,289
Ishi B (split unit)	25,312	20,027
Antelope Unct	***18,855***	*17,624*
Brushy Mtn Unct	*6,457*	***2,403***
Mill Creek	9,815	7,990
Trail Lake B	1,115	1,115
Wild Cattle Mountain	5,265	4,965
Total	59,096	51,686

d. Available Wilderness

In addition to this Forest's three wlderness areas, most of Lassen Volcanic National Park is designated wilderness **(78,982** acres). The Bucks Lake Wilderness is on Plumas National Forest to the south and the South Warner Wilderness is on Modoc National Forest to the north. Nearby Forests surrounding the north end of the Sacramento Valley also have wilderness areas from which users can choose.

25. WILDLIFE

a. Introduction

The Forest provides habitat for an estimated **361** species of animals The bald eagle, peregnne falcon, and Shasta crayfish are Federally classified as Endangered. The northern spotted owl has been listed as Threatened by the U S. Fish and Wildlife Semce. Seven other species are designated as Sensitive on the Lassen National Forest The Sensitive wildhfe species are· Sierra Nevada red fox, marten, fisher, great grey owl, goshawk, willow flycatcher, and California spotted owl Forty-five species provlde recreational hunting and trapping opportumties.

Most mldhfe species can be generally grouped into two categones 1) early successional species—those most dependent on young vegetation, and 2) late successional species—those most dependent on mature or overmature vegetation Other species depend on special habitats (riparian areas, wetlands, etc.) or special habitat elements (snags, dead and down wood, etc.) Many species depend on combinations of the above

In an attempt to consider the habitat needs and insure vlable populations of all native species on the Forest, 18 Management Indicator Species were identified by Forest biologists. These species represent the range of habitats and habitat elements of all species on the Forest (See Table **3-9).**

Not all Threatened, Endangered or Sensitive plant and ahmal species have been chosen as Management Indicator Species Some have habitats that are very specialized and restncted in geographic and/or ecologcal requirements Adding Management Indicator Species status would not provide them any more protection than they already **are** given

The California Department of Fish and Game is responsible for managmg mldlife populations, while the Forest Semce is responsible for managmg wldlife habitat on National Forest lands. The State and Forest Semce work closely together to attain common goals The U.S Fish and Wildlife Semce enters this multi-agency effort where Threatened and Endangered species, migratory waterfowl, or animal damage control are involved.

The relative abundance and distribution of fish and wildlife are affected by most land management actions Forest managers need to decide how much of what types of wildlife habitat should be provlded through time

b. Supply

1. Threatened and Endangered Species

Bald Eagles The Forest supports **14** breedmg pairs of bald eagles This density ranks the Forest as one of the most productive for breeding bald eagles in California. In addition to the **14** occupied territories, five suitable unoccupied territories also occur Approxlmately **6,900** acres on the Forest are mcluded in bald eagle nest territories

Current management includes monitoring nesting success and coordmating bald eagle recovery

goals with other resource activities, and other agencies. Needs for existing and future eagle nesting habitat are coordinated with the Forest's timber sale program.

Peregrine Falcon Although only one occupied terntory of peregnne falcons is known, potentially suitable habitat is abundant The Forest monitors nesting success annually and conducts surveys to locate possible new nest sites The Forest can meet species recovery goals by protecting mld eynes and by accelerating attainment of population recovery objectives with the release of birds from captive breeding programs into the wild

Shasta Crayfish Shasta crayfish habitat occurs in the Pit River and Hat Creek drainages The species requires a clear, constant temperature aquatic envlronment found in spring-fed streams and lakes An inventory of potential Shasta crayfish habitat was conducted in 1990 on the Forest, but no populations were found In all management actions, the Forest will protect or enhance all known and potential habitat for the Shasta crayfish

2. Sensitive Species

Fisher and Marten Both marten and fisher are classified as Sensitive by the Pacific Southwest Region Martens depend on large blocks of mature and overmature forest for denning and foragmg Meadow edges adjacent to timbered stands are also important foragmg grounds. Optimal habitat is dense and open stands of conifer or mured conifer/hardwood forests with multi-stoned stand structure, large diameter trees, and stand decadence.

Preferred fisher habitat consists of dense (60 percent to 100 percent canopy closure), multi-stoned, mature, mixed conifer forests with many large snags (greater than 30 inches DBH) and numerous fallen logs These conditions offer adequate cover and an abundance of potential dens The best habitat includes close proximity to densely-vegetated ripanan comdors and to saddles between drainages, which are used as travelways, small openings (less than two acres) with good ground cover for foragmg; and an absence of roads

In March 1990, the Forest identified 19 marten and 5 fisher habitat management areas (HMA's) The majonty of this habitat is located along the western half of the Forest and through Lassen Volcanic National Park. HMA's are linked with 600 foot travel comdors to provlde for genetic interchange and successful dispersion of young Marten areas comprise 2,100 acres while fisher areas contain 9,800 acres. HMA's were located based on three considerations. (1) hıstoncal sightings, (2) proper spatial distribution as defined in a comprehensive regional literature renew of the habitat reqmrements for these species, and (3) placement in areas already reserved from full timber management All HMA's are deficit in suitable habitat to meet the medium Habitat Capability Model displayed in Appendix O of this Plan.

Currently, the Forest lacks information on population numbers and trends for both of these species The reduction of old growth habitat through timber harvesting is a major concern with marten and fishers No scheduled timber management will occur in habitat management areas until more information is available on their population size and habitat requirements

Great Gray Owls Great gray owls are designated as Sensitive by the Forest Semcein California They are probably the rarest owls in the Sierra Nevada They require stands of overmature timber containing large snags adjacent to large meadows There has been only one great gray owl located on the Forest in recent years

The Forest can provlde for great gray owls by managmg meadow ecotones to preserve large, overmature trees and high snag densities

Northern Goshawks Goshawks are listed as Sensitive in the Pacific Southwest Region There are 20 known active goshawk nesting territones on the Forest, but frequent sightings imply many more

In order to insure that a vlable population of goshawks occurs over time on the Forest, a network of territones was identified throughout their range on the Forest The network meets the Regional Planning Direction of at least one

Table 3-9

Wildlife Management Indicator Species and Their Seral Stage and Special Habitat Preferences

Management Indicator Species	Seral Stages		Special Habitats. Snags								
	Early	Late	Large	Near Water	General	Down Wood	Cliffs	Hard-woods	Meadows	Ripanan	Water
Bald Eagle		X	X	X							X
Black Bear	X	X			X	X		X	X	X	
Bufflehead				X					X		X
Fisher		X	X		X	X				X	
Goshawk		X				X				X	
Hairy Woodpecker		X	X		X						
Mallard										X	X
Marten		X	X		X	X				X	
Mule Deer	X							X	X	X	
Osprey		X	X	X						X	X
Peregrine Falcon							X			X	
Pileated Woodpecker		X	X								
Pronghorn Antelope	X	X							X		
Rainbow Trout										X	X
Spotted Owl (California and Northern subspecies)		X	X			X					
Steelhead Trout and Chinook Salmon										X	X
Western Gray Squirrel		X			X			X			

territory per 18 square miles, and **50** acres of mature habitat per pair. These cnteria resulted in a minimum population goal of 113 pairs of goshawks for the Forest

The Forest can provide for goshawks by protecting mature forest habitat for nesting Future nesting habitat may also be provided by silvicultural treatments Foragıng habitat can be improved by increasing habitat age diversity through timber harvest

Sierra Nevada Red Fox The Sierra Nevada red fox is classified as Sensitive in California Little is know about the life cycle of this fox, but it seems to be rather general in its habitat requirements and not particularly abundant in any habitat type There have been widely scattered sightings over many years on the Forest

Forest management wıll probably not affect the range or distnbution of the Sierra Nevada red fox, and no special management will he reqmred

Spotted Owls Two subspecies of the spotted owl are found on lands managed by the Lassen National Forest The northern spotted owl(*Strıx occidentalzscaurına*), listed hy the U S Fish and Wildlife Semce as Threatened, is found north of Highway 299. The California spotted owl (*Strıx occidentalrs occidentalrs*) is found south of Highway 299 Both subspecies require similar habitat large blocks of mature and over-mature forest with appropriate structural and vegetative attnbutes, and abundant prey. Optimal habitat is conifer and mixed conifer forest with multi-stoned stands, large diameter trees, dense canopy closure and stand decadence

In January 1987, the U S Fish and Wildlife Servlce (FWS) received a petition to list the northern spotted owl as an Endangered species under the Endangered Species Act In June 1989, the FWS proposed to list the northern spotted owl as Threatened Following this proposal, an interagency committee of scientists and researchers (ISC) was formed to develop a conservation strategy for this subspecies Their report, issued in April 1990, recommended the creation of Habitat Conservation Areas (HCA's) to replace the SOHA management concept in Washington, Oregon, and the Klamath Province of northern Californa. One HCA is located in Shasta National Forest lands administered by the Lassen. In June 1990, the FWS listed the northern spotted owl as Threatened throughout its range

Inventories have located at least 87 pairs of California spotted owls on the Forest There are no known pairs of northern spotted owls on the Forest The total known spotted owl population on the Lassen as of 1991 is 191 mdividuals, one of which is ın the range of the northern spotted owl The Pacific Southwest Regonal Guide directs that a network of California spotted owl territones be established to insure species vıability The number of SOHA's necessary to provlde a vlable population on the Lassen National Forest is 39 One more SOHA has been added because it contained a successfully reproducing pair of spotted owls in an area previously thought to be outside their range on the Forest

The decision to manage SOHA's wthin the Klamath Provınce has since been withdrawn Pending enactment of new legıslatıon, any applicable action by the Endangered Species Comnuttee, adoption of a recovery plan by the Fish and Wildlife Service, or the results of further biological consultation between the Forest Semce and the Fish and Wildlife Semce, the Forest Semce will conduct timber management activities in a manner not inconsistent wıth the Interagency Scientific Committee recommendations

For the Californa Spotted Owl, each SOHA should have at least 1,000 acres of base habitat and 650 acres of replacement habitat The current amounts of suitable habitat ın the Lassen's SOHA network are below the habitat requirements and the population vlability standards set forth ın the Regional Guide Although proper distnbution of smtable habitat throughout the Forest may take several decades, full compliance with spotted owl direction is being implemented as rapidly as possible Dunng this interim penod, 125 acres will be protected for each non-network owl pair until there are 39 nesting pairs wthin the SOHA's

No scheduled timber harvesting will occur within the SOHA network or HCA

Willow Flycatcher Willow flycatchers have been designated as Sensitive by the Regional Forester This flycatcher is dependent upon npanan deciduous habitat or wet meadows with willow thickets Willow flycatchers were confirmed to inhabit the Forest in 1990

All nparian habitat and meadows wlll be protected using Best Management Practices (Forest Plan, Appendur Q). These measures should assure continuing populations of the willow flycatcher

3. Other Species

Osprey Ospreys on Forest lands total about **32** pairs, and the population has increased since the late **1960's** The Forest modifies timber management activlties within active and potential nesting areas to prevent disturbance, and to provide current and future nest trees Populations on National Forest lands could be increased by approximately 20 percent at Eagle Lake and by a small amount at McCoy Flat Reservoir.

Mule Deer and Black-Tailed Deer About ***200,000*** acres of the Forest lie mthin deer winter range, but only about 53,000 are smtable for treatment to increase carrying capacity for deer. Most of this is in wedgeleaf ceanothus in the Almanor and Hat Creek Distncts **For** the past several years, the Forest has prescribed burned several thousand acres of winter range per year in a program cooperatively financed with the California Department of Fish and Game Such work should be coupled with improvement of fawning habitat and summer range to be most effective. Coordination of timber harvest location, size, and timing would help provide desirable forage-to-cover ratios and fawning habitat.

Pileated Woodpecker Pileated woodpeckers are found throughout the Forest mthin conifer and conifer-hardwood stands, where large diameter softwood snags are present. Conflicts in managing this species occur primanly from timber and fuels management activities which reduce the older age class of timber, remove standing snags and down logs, and salvage recent timber mortality. Fuelwood gathenng also limits the number of standing snags on the Forest where vehicle access is easy Management guidelines for snags and dead and down wood will help maintain this species

Pronghorn The Forest provldes approximately seven percent of the total habitat (primarily summer range) used by the Lassen sub-herd of pronghorn antelope Pronghorn numbers probably can be increased if the Forest Service continues to develop water, allocates additional forage to antelope, and modifies fences to permit free antelope movement Some reduction in forage use by domestic livestock may also be necessary

Western Gray Squirrel Gray squirrels are present throughout the Forest wherever oaks, pines, and snags are present. Abundant populations of gray squirrels currently exist on the Forest. Opportunities exist to improve habitat for this species by manipulating young stands of hardwoods to produce older age classes, by protecting oak stands dunng timber harvesting activlties, and by regenerating older oak stands through timber management and burning.

Oaks and Aspens Oaks are an important and vaned wildlife habitat component. Management indicator species that depend on ***oaks*** are gray squirrel, deer, and black bear. Retention of oaks in mixed conifer-oak stands, and management for their replacement over time, is key to maintaining habitat for these indicator species and for other wildlife A number of management activlties can improve oak habitats Shrub oak types could benefit from burning Dense Oregon oak shrub stands can be thinned to increase tree size, and there may be a future need to improve blue *oak* and black oak regeneration The black oak type can benefit from burning to regenerate shrub stands and remove encroaching conifers, and from thinning to enhance mast production and longevity. The mixed-conifer/oak type could benefit from removal of competing conifers by harvest **or** burning

Aspen is another important hardwood community. Disturbance, such as fire or cutting, is necessary to perpetuate decadent aspen stands. Pilot projects using cutting and fencing have been implemented.

Snags, and Dead and Down Wood Snags, and dead and down wood are important to many wildlife species Management Indicator Species dependent on these components are the bufflehead, hairy woodpecker, pileated woodpecker, marten, fisher, gray squirrel, black bear, bald eagle, osprey, and spotted owl The Pacific Southwest Regional Guide specifies that, to the extent possible, an average of 1 5 snags per acre be maintained wthin each timber compartment Except in the eastside pine type, most of the Forest has adequate snag densities to insure population viability of cavlty dependent species

Additional snags for wldlife will be maintained by restricting firewood cutting of standing dead trees and limiting salvage harvesting, where necessary to achieve snag goals Live cull trees may also be substituted for dead snags provlded at least one dead snag remains per acre

The lack of dead and down wood is a concern, particularly in size classes larger than 15inches in diameter and longer than 20 feet Species dependent on these materials can presumably be maintained through effective coordination between timber, fuels, and wildlife management

Waterfowl and Riparian Species Riparian vegetation ranges from sedges and rushes to willow, alder, aspen, oaks, maples, and dogwood Management Indicator Species that use nparian habitat as important components of their life cycles are the black hear, mallard, bufflehead, spotted owl, deer, marten, fisher, chinook salmon, steelhead trout, and rainbow trout Grazing by domestic livestock has reduced the productivlty of some nparian areas The Forest is continuing a program of npanan enhancement Significant opportunities exist to improve riparian areas by fencing selected reaches of streams from livestock and by using improved grazing systems Use of Best Management Practices (BMP's) for streamside management zones has helped dramatically in preventing loggmg damage typical of past decades Restonng past damage is an important prionty for riparian habitat

About 60,000 acres of perennial and seasonal wetland habitat are on or adjacent to the Forest Lake Almanor and Eagle Lake account for about 51,000 of these acres The wetlands provlde significant habitat for breeding and wintenng waterfowl Excellent opportunities exist to increase wetland habitat quality and waterfowl production on at least 5,000 wetland acres

c. Demand

The Forest generates an estimated 62,400 Wildlife and Fish User Days (WFUD's) annually from wildlife-associated recreation (a WFUD is a 12-hour activlty day) This recreation ***is*** valued at $1,105,000 per year Deer and waterfowl hunting are the major actinties Bird watchmg and associated activities are the major nonconsumptive demand for wildlife

Public interest in bald eagles and peregrine falcons is extremely high. National demand will be great at least until recovery levels are achieved The Forest's share of bald eagles needed to meet recovery is 16 breeding pairs, two more than presently exist Likewise, two additional breeding pairs of peregrine falcons are needed to meet species recovery goals on the Forest

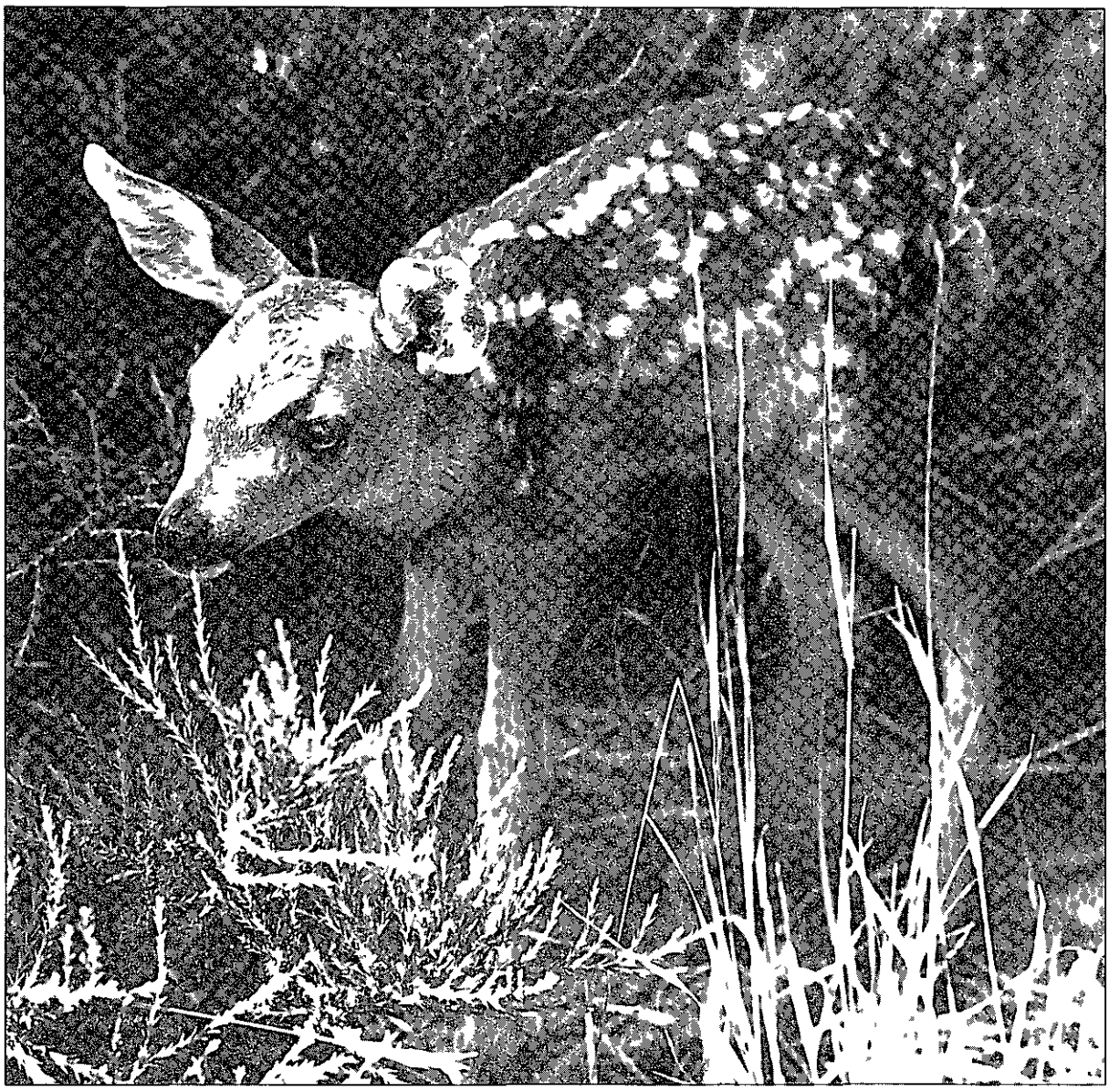
There is considerable public interest in spotted owls, goshawks, marten and fisher due to their status as Sensitive species and concern for their vlabihty Because of their secretive nature, these species do not generate appreciable amounts of WFUD's They are not subject to mewing, nor are they game species

Hunter demand for pronghorn antelope far exceeds supply Hunting permits are issued only to a small fraction of those who apply The Cahfornia Department of Fish and Game's long-term goal is to increase the sub-herd that uses the Forest from **1,400** to 2,500 animals

Demand for deer also far exceeds supply and will increase on the Forest The California Department of Fish and Game deer herd plans request higher deer populations in most of the deer herds in the State. Waterfowl hunting will continue to be in high demand as private landowners continue to limit hunting on their lands Relatively few other National Forests have potential for significant waterfowl production

Satisfymg the demand for riparian habitat, oak habitats, wetlands, snags, dead and down wood, and plant and animal diversity *is* a goal of major importance This will depend on the Forest maintaining viable populations of all animals, and perpetuating productive and healthy ecosys-

Management Direction 4



Newborn fawn

CHAPTER 4 - MANAGEMENT DIRECTION

A. INTRODUCTION

The purpose of this chapter is to (1) define the resources to be emphasized in different parts of the Forest, (2) establish goals and objectives for commodities and services to be provlded, and (3) prescribe standards, gudelines, and practices to achieve the goals and objectives This management direction provldes the framework for interdisciplinary project-level planmng

Direction for management of National Forests comes from law, regulation, policy, and procedures The many laws enacted by Congress **for** this purpose include, among others, the Organic Administration Act of 1897, the Multiple-Use Sustained-Yield Act of 1960, the Forest and Rangeland Renewable Resources Planning Act of 1974, and the National Forest Management Act of 1976. Regulations developed by the Secretary of Agnculture are found in the Code of Federal Regulations (CFR) Policies developed by the agency are listed in the Forest Semce Manual (FSM), and procedures developed by the agency are descnbed in the Forest Service Handbooks (FSH).

The Forest will continue to be guided by these laws, regulations, and Forest Service Manual policy and Handbook procedures This Forest Plan supplements, but does not replace, the direction from these sources The Plan generally does not restate this direction, except where it is necessary to clarify treatment of an issue or concern

In this Plan, management direction for the Forest consists of three integrated components **1)** Forest-wide Direction, **2)** Management Prescriptions, and **3)** Management Area Direction. Forest-wide Direction applies to the entire Lassen National Forest and expresses the intent of laws and regulations Management Prescriptions identify the resource-use activities to be emphasized on particular types of land Management Area Direction gives additional policy unique to specific areas of the Forest Figure 4-1 shows the hierarchy of the management direction. Note that management direction applies only to National Forest land, not to pnvate land or other agency lands mthm or near the National Forest

Forest-wide Direction Forest-wide Direction includes Forest Goals, Forest Objectives, and Forest Standards and Guidelines Forest Goals state the management philosophy of the Forest Plan established in response to identified issues and concerns Forest objectives allocate acreages to management prescnptions and establish targets for Forest-wide resource outputs, activities, and costs by decade Forest Standards and Guidelines gude the management activlties for each resource throughout the Forest

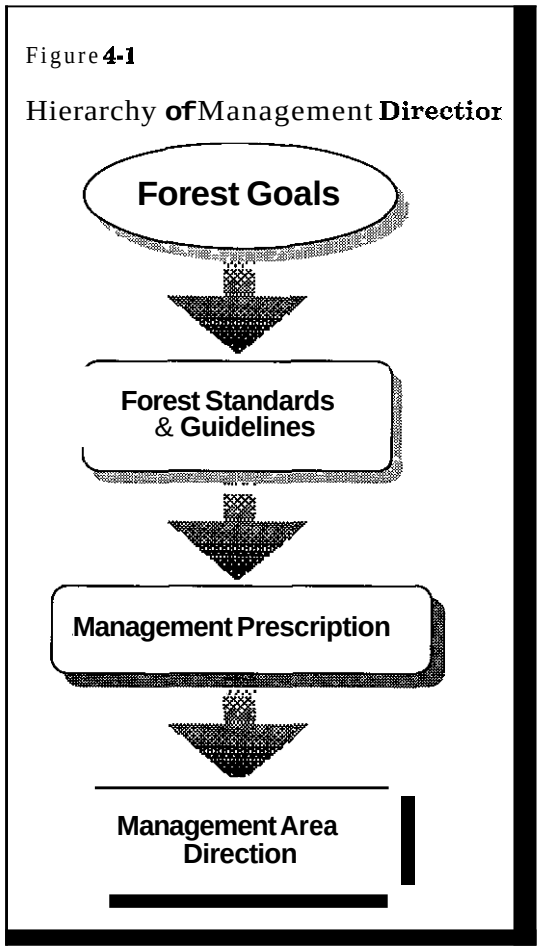
Management Prescriptions A Management Prescnption assigns a pnmary management purpose to a particular kind of land (campgrounds, wilderness, timber management area, etc), recognizing its physical and biological characteristics, existing access, productive capacity, and other attnbutes Prescnptions specify management practices in addition to Forest Standards and Guidelines that apply to the allocated areas. Most importantly, prescnptions define the array of appropnate vegetation manipulation actiwties that are compatible with the purpose of the prescription

Management Area Direction Management Area Direction establishes additional goals, activlties, and output targets for 48 Management Areas that have been delineated to facilitate forest management This direction supplements both the Forest Standards and Guidelines and the Management Prescnptions, to accommodate the unique charactenstics of each Management Area

Deviations from Forest-wide Direction, Management Prescnptions, and Management Area Direction may occasionally be appropriate due to site-specific conditions The Forest will not deviate, however, from direction that is based on law or regulation Moreover, any modifications will reflect the intent of Forest goals In any case, dunng project planning the Forest will analyze

Figure 4-1

Hierarchy of Management Direction



any devlations from Plan direction that appear warranted and will record the analysis and conclusion in the appropnate environmental document

B. DESIRED FUTURE CONDITION

The desired future Condition is a concise, general description of what the Forest should be, approximately 50 years in the future It is the resulting condition of meeting the goals and objectives, and standards and guidelines of this Plan The difference between the existing condition and the desired future condition represents the anticipated change from implementing the Plan

The overall desired future condition for the Lassen National Forest can be summarized as the following

About 53 percent of the Forest is available and smtable for timber production Approxlmately 342,040 acres are allocated for intensive timber management, producing generally even-aged timber stands with a diversity of age classes among stands. They will provlde timber, biomass, firewood, and other forest products on a sustained level while maintaining other resource values. Timber lands managed less intensively for timber production will emphasize other resource objectives, such as wildlife habitat and/or vlsual quality. Old growth retention areas, spotted owl habitat areas, and marten and fisher habitat management areas will receive limited or no scheduled timber management to provlde habitat for species dependent on old growth forests

Biological diversity remains high, with vlable populations of all native wildlife and plant species maintained Ripanan areas are healthy, and streams continue to provide clean water and high quahty habitat for all native and compatible non-native game fish species. Rangelands are productive in terms of livestock forage, wildlife and fisheries habitat, and water quality Range productivity is in a satisfactory or better Condition with a stable or improving trend. Recreation fanlities are well maintained and are sufficient to handle the increased demand Wilderness, semi-primitive, Wild and Scenic Rivers, Special Interest Areas, and other special areas are managed to provide generally pnmitive recreational expenences while maintammg healthy, natural ecosystems Mineral and energy development continues in areas where such uses are compatible with other multiple use objectives Soil productivity and water quality remain high, water quality mll continue to meet or exceed State standards Significant cultural resources are protected and interpretive programs continue to educate the public about cultural resource values.

Present air quality is maintained Baseline conditions for all air quality related values are defined and limits of acceptable change are established for Class I mlderness areas A monitonng program evaluates changes in air quahty related values Prescnbed fire, thinning, and slash management are used in forest stands to minimize the probability of catastrophic loss from mldfire or forest pests Prescribed fires or other treatments are used to create a mosaic of seral stages in brushfields to benefit wildlife

The appearance of the Forest from designated throughways and vantage points appears mostly unchanged by management activities, from other areas, harvest openings and roads may be visible. Non-commodity outputs such as wildlife, biological diversity, and scenic quality are emphasized equally with commodity outputs.

C. FOREST *GOALS*

Goals for achieving the desired future condition **for** the Forest **for** each significant resource are listed below.

1. AIRQUALITY

a Maintain air quality to meet or exceed legal requirements of appropriate levels of government.

b Minimize encroachment of prescribed fire smoke on population centers

2. BIOMASS

a Provide for the use of biomass that is surplus to ecological, silvicultural, and personal firewood gathering needs

b. Consistent with (a) above, sell biomass from thinnings in both plantations and wild stands to offset costs of Forest Timber Stand Improvement programs.

3. CULTURAL RESOURCES

a. Protect, preserve, and complete the inventory of cultural properties on the Forest, in the first decade. This shall be accomplished by a combination of general inventories and those required for resource-use projects Determine the eligibility of 20 percent of the properties for inclusion on the National Register of Historic Places per decade.

b Insure that Forest actions are not detrimental to traditional Native American religious rights and practices

c Provide information about cultural resources for public education and enjoyment.

4. ENERGY

a. Create energy-efficient facilities through state-of-the-art design for both new construction and upgrading existing facilities

b. Encourage energy-efficient vehicle operations through the use of fuel efficient vehicles **for** the Forest fleet

5. FACILITIES

a Provide a stable and cost-efficient road system through appropriate construction, reconstruction, and/or maintenance

b. Cooperate with Federal and State agencies, counties, and private entities to obtain needed modifications of roads under their jurisdictions

c. Provide a stable and cost-efficient trail system through appropriate construction, reconstruction, and/or maintenance

d Provide administrative sites and facilities that effectively and cost-efficiently serve the public and the Forest Service workforce

6. FIREANDFUELS

a Rely on fuel reduction and an effective fire protection organization to minimize wildfire losses.

b Promote fire prevention commensurate with resource values at risk.

c Reduce fuels by prescribing fire and allowing biomass use, while maintaining soil and water quality

7. FIREWOOD

a. Provide a sustained supply of firewood, giving priority to personal use

8. FISH

a Maintain or improve habitat for all native and compatible non-native species

9. FORESTHEALTH

a Reduce impacts of forest pests on all resources to acceptable levels through integrated pest management.

10. GEOLOGY AND GROUNDWATER

a Conduct geological inventories needed for assessments of proposed projects.

11. LANDS

a. Initiate land ownership adjustments to achieve ownership patterns facilitating Forest management and minimizing administrative costs

b Survey, mark and post property boundanes adjacent to pnvate lands, mlderness and wild and scenic rivers pnor to Forest activity adjacent to them.

c Acquire rights-of-way needed to efficiently manage Forest resources and provlde public access

d. Pursue land mthdrawals from mineral entry or disposal when needed to protect Forest improvements and areas of special significance.

e Issue special use permits, in conformance with Management Area Direction, if a net public benefit will result

f. Avoid the proliferation of separate utility rights-of way.

g. Resolve all unauthorized occupancies on National Forest land

h Continue to coordinate with concerned agencies to preserve unique resources in the Eagle Lake, Lake Britton, and Lassen Volcanic National Park areas

i Designate the following as multi-user electronic sites Turner Mountain, Hamilton Mountain, Morgan Summit, Keddie Ridge, Colby Mountain, and Hall's Flat

12. LAW ENFORCEMENT

a Protect Forest resources to insure public safety and retain resource values.

13. MINERALS

a Provide for nuneral exploration and development while protecting surface resources

14 RANGE

a Provlde for long-term rangeland productivity for fishenes, mldlife, soil, water, timber, and livestock forage values

b Revise allotment management plans as necessary to meet management direction and vegetative management goals.

c Establish Forest standards for vegetative utilization until site specific utilization standards are in place.

d Manage ripanan areas forest-wide to reach natural or achievable site potential and desired ecological conditions Desired future conditions, where site potential exists, are late seral communities in good or better condition.

15. RECREATION

a Provlde a wide range of outdoor recreation opportunities to meet public demand by furnishing different levels of access, service, facilities, and information

b Provide interpretive services and facilities to inform the public about Forest resources and management

c. Provlde diverse opportunities for off-highway vehicle recreation

d Provide diverse opportunities for winter sports

e. Manage recreational residences as components of the overall National Forest recreation program Work in partnership with the holders of recreation residence permits

to utilize the recreational benefits of these residences

f Continue pnvate operation of National Forest developed recreation sites where it best serves public recreation needs.

g Work in partnership with local communities to expand recreational facilities, programs and trails on both public and private land.

16. SENSITIVE PLANTS

a. Maintain habitat and vlable populations to contribute to eventual de-lustng of Sensitive plants that are found on the Forest

b Manage Sensitive plants to insure that species do not become Threatened or Endangered because of Forest Service actions

17. SOILS

a Prevent irreversible losses of soil productivity

b. Restore all substantial areas of significantly degraded soil.

18. SPECIAL AREAS

a Protect areas of outstanding scientific, scenic, botanic or geologic value as Research Natural Areas (RNAs) or Special Interest Areas (SIA's)

19. TIMBER

a. Provide a sustained quantity of forest products by selecting silvicultural practices from the full range available on an indimdual stand basis, with consideration of biologxal requirements, economic efficiency, and Forest Goals for other resources. Prefer even-aged management where all of these criteria can be met

20. VEGETATIONANDDIWRSITY

a Provide vegetative diversity to maintain scenic quality, viable populations of plants and wildlife. and to minimize loss from wildfire

21. VISUAL RESOURCES

a Throughout the Forest, maintam vlsual quality commensurate with other resource needs Adopt and apply specific Visual Quality Objectives (VQO's) for all areas of the Forest.

b Where past management actinties do not meet adopted visual quality objectives, use visual rehabilitation to return visual quality to an acceptable level.

22. WATERANDRIPARIANAREXS

a. Provide water of sufficient quality and quantity to meet current needs. Meet additional future demand where compatible with other resource needs

b. Limit indindual project impacts as needed to avoid significant cumulative effects on water quality and fishenes

c Comply with Federal, State, regional, and local water quality regulations requirements and standards

d. Maintain or improve ripanan-dependent resources in and around wetlands, stream corndors (including ephemeral and intermittent streams), lakes, seeps, spnngs, and wet meadows.

e Evaluate riparian zones forest-wide and manage to reach natural or achievable site potential and desirable future conditions. Desired future conditions, where site potential exists, are late seral communities in good or better condition

23. WILD AND SCENIC RIVERS

a Recommend eligible, suitable rivers for federal Wild and Scenic River designation

b Protect and enhance outstandingly remarkable values and the free-flowing condition of recommended and designated Wild and Scenic Rivers

24. WILDERNESS AND FURTHER PLANNING AREAS

a Protect mlderness character in designated and recommended mlderness

25. WILDLIFE

a Assist in recovery efforts for Threatened and Endangered species

b Provide for viable populations of spotted owls and goshawks through coordinated management of an established network of nesting territories in appropriate habitat.

c Contribute toward the population viability of marten and fisher through coordinated management of established habitat management areas in appropnate habitat

d Create desirable habitat size, shape, and distribution to provlde both forage and cover for deer populations

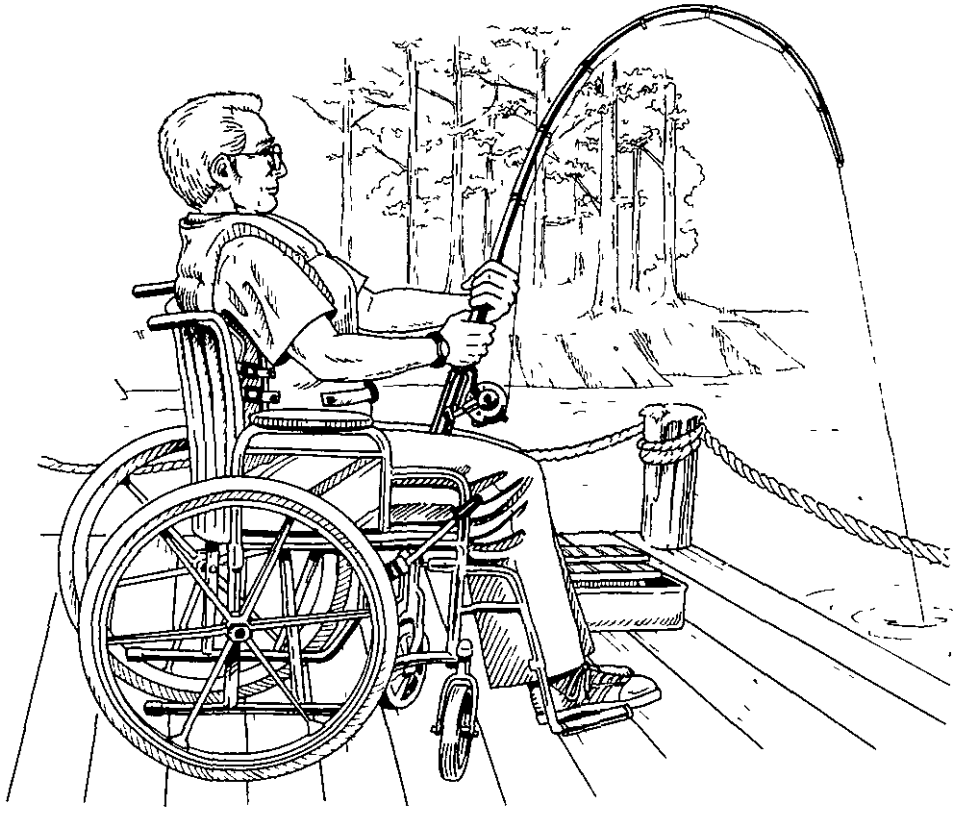
e. Provide sufficient habitat for species dependent on snags, nest cavities, and dead and down wood

f. Enhance ecotones and provide other special habitat elements to maintain or increase species diversity

g Cooperate with Federal, State, and local agencies in improvlng wildlife habitat for all species

h Coordinate wildlife management programs with other resource management programs to meet habitat or population objectives established for "Management Indicator Species" (see Glossary in FEIS)

i Manage habitat for Sensitive wildlife species to insure that these species do not become Threatened or Endangered due to Forest Service actions.



D. FOREST OBJECTIVES

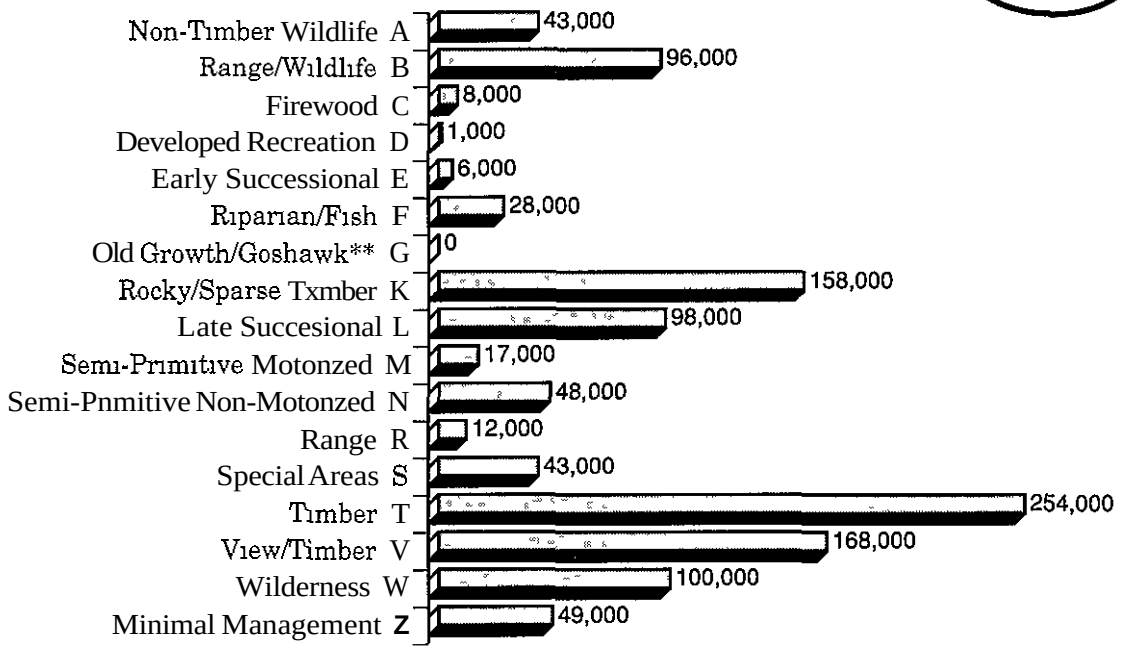
The following tables show the land-use allocations and target commodity outputs, resource management actinties, and operating costs that would accomplish or be compatible with Forest Goals

Figure **4-2** shows the acres of the Forest allocated to each Management Prescription. Table 4-1 lists the target commodity outputs and resource-management actinties for the ten year planning penod along with potential outputs and activities for the following **40** years Table 4-2 lists additional objectives for timber management on an annual basis. Wildlife habitat objectives for the planning period are shown on page **4-13**

Figure 4-2

Acreage Allocation **by** Prescription*

PRF



* Prescriptions represent general management intent Final land allocations will be done at the project level, after a site-specific envlronmental analysis has been completed Prescnption maps do not generally display areas smaller than 200 acres More than one prescnption may apply to an area See Prescnption Application Priority in the Plan Chapter **4,** section F, for a listing of which prescnptions take precedence

** G Prescnption acres were modeled, hut not field venfied They do not appear on present prescnption maps When mapped, the number of acres in this bar mll change, representing acres not allocated to more restnctive prescnptions Other prescnption acreages may be reduced when G acreage is adjusted

Table 4-1
Average Annual Outputs by Decade for PRF Alternative

Output/Activity	Base Year 1982	1980 RPA Goals 1990	1980 RPA Goals 2030	Decade 1	Decade 2	Decade 3	Decade 4	Decade 5
ECONOMIC								
Total Budget (MM $)	139	17.9	193	163	192	21.4	257	301
Total Cost (MM $)	145			175	20 5	22.8	27.1	314
BIOMASS a/								
Biomass Available (M O.D. Tons)	148			165	165	165	179	187
FACILITES								
Roads & Trails (mles)								
Trail Construction/ Reconstruction	0	3	3	35	35	3.5	3.5	3.5
Road Construction	15			16	7	6	5	4
Road Reconstruction	80			50	46	56	60	55
Road Mamtenance b/	2,862			3,552	3,667	3,732	3,787	3,832
Dams & Reservoirs (number)								
Forest Service	8			i0	11	11	16	16
Other Federal	0			0	0	0	0	0
Other State/Local	7			7	7	7	7	7
Private	2			2	2	2	2	2
Administrative Sites (number)								
Forest Service Owned	12			11	11	11	11	11
Leased	4			1	1	1	1	1
FIRE *AND* FUELS								
Fuel Treatment (total acres)	11,630			6,050	5,950	5,950	5,750	5,650
Fire-Related Treatment	1,000			1,150	1,150	1,150	1,150	1,150
Timber-Related Treatment	8,990			3,600	3,500	3,500	3,300	3,200
Range/Wildlife Fuel Treatment	1,640			1,300	1,300	1,300	1,300	1,300
Expected Acres Burned by Wildfire								
Intensity Class 1	328			380	410	436	450	439
Intensity Class 2	74			91	98	105	108	105
Intensity Class 3	6			8	8	9	9	9
Intensity Class 4	113			228	246	262	269	263
Intensity Class 5	6			8	8	9	9	9
Intensity Class 6	39			45	92	52	54	53
Total	566			760	862	873	899	878

Table 4-1 (continued)
Average Annual Outputs by Decade for PRF Alternative

Output/Activity	Base Year 1982	1980 RPA Goals 1990	1980 RPA Goals 2030	Decade 1	Decade 2	Decade 3	Decade 4	Decade 5
FIREWOOD								
Firewood (Thousand Cords)	70			69	69	70	79	83
FISH								
Resident Fish (M pounds)	48	53	57	51	52	54	54	54
Anadromous Fish-Commercial Harvest (M pounds)	100	100	103	100	100	101	101	101
Anadromous Fish-Sport (M pounds)	39	39	40	39	39	39	39	39
Total WFUDs	18,750			19,400	19,400	19,400	19,400	19,400
Direct Habitat Improvement (WFUD's)								
Resident Fish	300			2,000	3,700	4,000	4,000	4,000
Anadromous Fish-Sport	115			1,000	1,000	1,000	1,000	1,000
Direct Habitat Improvement (acres/structures)								
Resident Fish	1.5/10			3/30	3/15	111	111	1/1
Anadromous Fish-Commercial & Sport	1/10			3/20	.5/1	5/1	.5/1	.5/1
LANDS								
Land Acqmsition (acres) c/	1,600	0	0	2,000	2,000	200	200	200
Minerals (plans & permits)	58	51	65					
Locatable Minerals	6			6	6	6	6	6
Mineral Materials	52			46	49	50	52	54
Leasable Minerals	0			2	4	6	8	10
RANGE								
Grazing (M AUMs)	49 7	50.5	53 2	48 5	48.5	48 5	48.5	48.5
RECREATION								
Developed Public (M RVD)	591	639	930	629	726	810	886	997
Developed Private (M RVD)	190	202	294	190	190	190	190	190
Dispersed (M RVD) (including mldemess use, excluding WFUD's)	312	336	448	402	451	493	533	589

Table 4-1 (continued)

Average Annual Outputs by Decade for PRF Alternative

Output/Activity	Base Year 1982	1980 RPA Goals 1990	1980 RPA Goals 2030	Decade 1	Decade 2	Decade 3	Decade 4	Decade 5
RECREATION (continued)								
Open Usable OHV Areas, Summer (M acres)	961			763	763	763	763	763
Open Usable OHV Areas, Winter (M acres)	961			763	763	763	763	763
Roads & Trails Open to OHV Use, Summer (mi)	2,240			2,301	2,422	2,542'	2,662	2,782
Roads & Trails Open to OHV Use, Winter (mi)	3,070			3,132	3,252	3,372	3,492	3,612
SPECIAL AREAS	(number of areas/M acres)							
Research Natural Areas	214 4			8/14 3	81143	8114.3	8/14 3	81143
National Natural Landmarks	0			0/0	0/0	0/0	0/0	0/0
Special Interest Areas	0			712.3	7/2 3	712.3	712 3	712 3
TIMBER								
Allowable Sale Quantity								
MMCF	27	28	29	15	15	15	17	18
MMBF	171	176	187	96	96	96	108	113
Long Term Sustained Yield								
MMCF	30			22	22	22	22	22
MMBF	195			139	139	139	139	139
Reforestation (acres)	600	606	707	3,600	3,500	3,500	3,300	3,200
Timber Stand Improvement (acres)	2,200	2,586	2,637	4,700	4,700	4,700	5,700	7,000
VISUAL RESOURCE								
Visual Quality Index	57			56	56	55	55	54
WATER								
Quality (M acre-feet @ standards)	1,308	2,102	2,124	1,304	1,299	1,299	1,300	1,301
Quantity (M acre-feet) d/	1,308			1,304	1,299	1,299	1,300	1,301
Increased Quantity (M acre-feet)				-4	-9	-9	-8	-7
Watershed Improvement (acres)	15	170	200	75	75	5	5	5
Ripanan Area Improvement (acres)	5			20	20	20	20	20

Table 4-1 (continued)
Average Annual Outputs by Decade for PRF Alternative

Output/Activity	Base Year 1982	1980 RPA Goals 1990	2030	Decade 1	2	3	4	5
WILD & SCENIC RIVERS	Miles Recommended							
Wild	0			485	485	485	485	485
Scenic	0			10.0	10.0	10.0	10.0	10.0
Recreational	0			175	17.5	175	175	17.5
WILDERNESS								
Wilderness Acres	78,060			99,644	99,644	99,644	99,644	99,644
Wilderness Units	3			7	7	7	7	7
Wilderness Use (M RVD) e/	20.4			374	411	453	498	548
WILDLIFE								
Threatened & Endangered Species								
Bald Eagle (pairs)	14			16	19	19	19	19
Northern Spotted Owl/HCA	Unmanaged			1	1	1	1	1
Peregrine Falcon (pairs)	1			3	5	5	5	5
Other Wildlife								
Deer (animals)	49,000	54,800	54,800	45,600	46,000	46,400	46,800	47,200
California Spotted Owl Habitat Areas	Unmanaged			40	40	40	40	40
Goshawk Management Areas	Unmanaged			113	113	113	113	113
Total WFUD's	62,400			58,100	58,600	59,100	59,600	60,100
Direct Habitat Improvement (WFUD's)								
Deer	400			540	540	540	400	400
Small Game and Non-Game	800			800	800	700	600	600
Wildlife Habitat Improvement (acres)								
Deer	2,000			1,300	1,300	1,300	1,300	1,300
Small Game and Non-game	50			80	80	80	80	80

a/ Excludes matenal <4" diameter, precommercial thinning, firewood.
b/ Mileages shown are mid-decade averages for new construction
c/ Five-year average
d/ Flow figures do not include runoff contributed from pnvate lands, while the RPA figures were based on entire watershed areas
e/ 1982 base year includes RVD's for Canbou and Thousand Lakes Wilderness Areas

Note Decade 2-5 potential outputs are shown for purpose of long-range comparison of alternatives

Table 4-2

Timber Management Outputs and Activities

Annual Average Acreage in Plan Period 1:

Management Practice	Acres/Year	Allowable Sale Quantity	
		MMCF/ year	MMBF/ year
1. Regeneration Harvest			
a By Forest Type.			
Mixed Conifer	**3,000**	**9.9**	**63**
Eastside Pine	**600**	**1.5**	10
Red Fir	**300**	2.2	14
Lodgepole Pine	**100**	**.6**	**4**
Total for Forest Types	**4,000**	14.2	91
b By Cutting Methods			
Clearcut	**1,600**	6.4	41
Shelterwood	1,000	**3.5**	22
Overstory Removal/Stand Mamtenance	**900**	2.4	**14**
Group Selection	**500**	1 9	14
Total Cutting Methods	4,000	14 2	91
2. Intermediate Harvest/Other Products	**5,500**	.9	5
3. Total Harvest	**9,500**	15 1	96
4. Other Practices			
Timber Stand Improvement	4,700		
Reforestation 1/	**3,600**		

1/ Approximately **3,600** out of 4,000 acres of regeneration harvest will be planted. The remaining acres will be reforested by natural seed fall or already have advanced natural regeneration.

Fish and Wildlife Habitat Management Objectives

The follomng are minimum management objectives to be achieved dunng the planning period. Annual acreages are averages for the period and are not necessarily annual targets.

Bald Eagle Maintainsuitabilityofhabitat at 14 bald eagle territones known to be occupied Maintain five additional suitable terntones that are not occupied This will provlde a choice of areas for new pairs to select, so that the Forest's recovery population objective of 16 pairs may be reached as soon as possible Protect all significant winter roost habitat at major lakes and reservoirs

Peregrine Falcon Maintain suitability of habitat at one known peregnne breeding terntory that is currently occupied. Maintain four potential territones that are currently unoccupied, to achieve the recovery population of three pairs. Supporteffortstoincreasethepopulationthrough artificial enhancement measures

Shasta Crayfish Protect known populations and habitat of Shasta crayfish where they occur Cooperate with the U S. Fish and Wildlife Service in any future recovery efforts

Northern Spotted Owl Provlde the Forest's contnbution to a viable population by managmg one Habitat Conservation Area and all present and potential northern spotted owl habitat as specified by the U S Fish and Wildlife Semce.

California Spotted Owl Provide the Forest's contnbution to a viable population of California spotted owls. Maintain a minimum of 1,000 acres of suitable habitat and 650 acres of replacement habitat in spotted owl habitat areas (SOHA's) distributed across the Forest within the range of the California spotted owl If 1,000 acres is not currently available, manage the forest to create 1,000 acres of suitable habitat as soon as possible.

Goshawk Prowde the Forest's contribution to a wable goshawk population by maintaining a network of 113 goshawk management areas (GMA's) Each GMA should consist of a minimum of 50 acres of mature forest in one or two stands

Great Gray Owl Maintain suitability of habitat of known great gray owl locations There are two reported sightings of great gray owls on the Forest Support efforts to inventory new locations Protect large snags along meadow edges for potential nest locations

Willow Flycatcher Maintain currently suitable willow flycatcher habitat by preventing degradation of willow/riparian communities Manage nparian areas to enhance willow reproduction and sumval to create additional habitat suitable for nesting willow flycatchers.

Marten Manage a system of 19 marten habitat management areas, each a minimum of 2,100 acres in size, connected by comdors 600 feet wide This will provide late seral habitat in sufficient quantity and spatial arrangement to maintain the Lassen's contribution to population viability for the species on the National Forests

Fisher Manage a system of five fisher habitat management areas, each with approximately 9,800 acres of suitable habitat and connected by comdors 600 feet wide, to provide for the Lassen's contnbution to a viable population of this species

Deer Habitat treatments for deer include regenerating 4,000 acres per year In addition, 600 acres per year will be regenerated under the Early Successional Prescnption. Approxlmately 1,300 acres per year of non-timber vegetation in deer winter and summer ranges will be prescribed burn

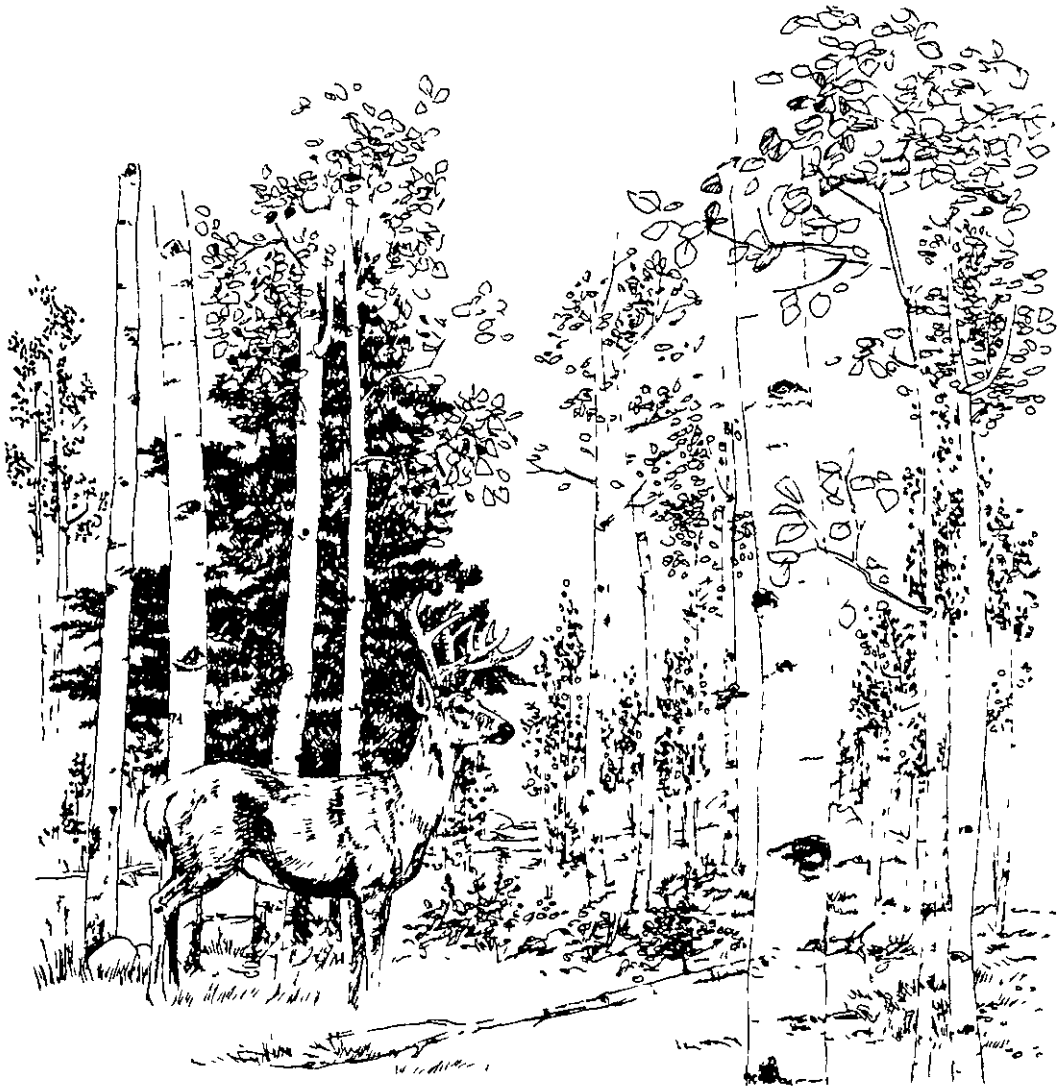
Wetlands Improve at least 100 acres per year **for** waterfowl and other waterbirds by construction of water-control structures, nesting islands, and fences if needed to exclude domestic live**stock.**

Riparian and Meadow Improve at least 20 acres of ripanan and meadow habitat per year by silviculturally treating aspen and other hardwoods; removing lodgepole from meadows; seeding; other vegetative treatments; and constructingfences, check dams, and nprap for soil protection and bank stabilization

Hardwoods Improve at least 50 acres of hardwood habitat per year by silvicultural treatment (thinning, removal of encroaching conifers, regeneration) and prescnbed burning.

Anadromous Fish Where potential spawning streams are longer than 0.5 miles, remove migrational barriers to fish Improve three acres of stream channel and install 20 habitat improvement structures in decade 1by fencing, modifying debns, planting nparian vegetation, and placing combinations of boulder and logs.

Resident Fish Improve three acres of habitat and install 30 habitat improvement structures (fencing, log weirs, boulder dusters, plantings, manipulated debns) in decade 1



E. FOREST STANDARDS AND GUIDELINES

The Forest Standards and Guidelines apply to the entire Forest. They expand the Forest Goals into more specific management direction for each resource To maintain the close link between these two levels of direction, the pnmary direction statements (a, b, c, etc) of the Forest Standards and Guidelines are identical to the statements of the Forest Goals listed above

The two additional levels of direction below the Forest Standards and Guidelines--Management Prescnptions and Management Area Direction — are consistent with, but more location-specific than these Standards and Guidelines.

1. AIR QUALITY

a Maintam air quality to meet or exceed legal requirements of appropriate levels of government

(1) Comply with the Federal Clean Air Act, as amended, and State and local air quality regulations.

b. Minimize encroachment of smoke from prescnhed fires into the Sacramento Valley, Lake Almanor basin, Fall River Valley, Eagle Lake basin, Burney basin, and Honey Lake Valley

(1) Cooperate with local Air Pollution Control Distncts dunng burning activities to minimize the total contannnation occumng at any one time

(2) Conduct burning activlties on designated "burn" days when atmospheric conditions result in acceptable wildfire hazard and provlde for rapid dispersion of pollutants. Only in rare cases will variances be requested

(3) Design each burn plan so that air quality standards will be met or exceeded

2. BIOMASS

a Provlde for the use of biomass that is surplus to ecologxal, silvicultural, and personal firewood gathering needs.

(1) Provlde hiding and thermal cover for deer in biomass treatment areas

b Consistent with (a) above, sell biomass from thinnings in both plantations and wild stands to offset the costs of Forest Timber Stand Improvement programs.

3. CULTURAL RESOURCES

a Protect, preserve, and complete the inventory of cultural properties on the Forest in the first decade This shall be accomplished by a combination of general inventories and those required for resource-use projects Determine the eligibility of 20 percent of the properties for inclusion in the National Register of Histonc Places per decade

(1) Within the first decade, identify and inventory cultural properties

(2) Develop and implement agreements with the State Histonc Preservation Officer and the Advisory Council on Historic Preservation for the management of cultural properties on or eligible for inclusion on the National Register

(3) Protect cultural properties listed or eligible for inclusion on the National Register from detenoration or destruction

(4) Where protection of cultural properties is not feasible, recover the values that result in their eligibility for inclusion on the National Register

(5) Allow the scientific study of cultural properties

b. Insure that Forest actions are not detrimental to traditional Native Amencan religious rights and practices

(1) Identify areas used in the practice of traditional Native Amencan religion and determine present use for religious purposes

(a) Determine the probable effect of any Forest action on these areas and resources

(b) Per the Amencan Indian Religious Freedom Act of 1978, seek to insure that Forest actions do not restrict the practice of traditional Native American religion by Native Americans.

c. Provlde information about cultural resources for public education and enjoyment

(1) Increase public awareness of cultural resources by distributing information from scientific studies, prepanng exhibits, and interpreting sites that will not be degraded by such use

(2) Designate and preserve segments of emigrant trail routes and associated features that significantly characterize these routes and contnbute to trail interpretation

4. ENERGY

a Provlde energy-efficient facilities through state-of-the-art design for both new construction and upgrading emsting facilities.

(1) To meet the requirements of the National Energy Conservation Policy Act (NECPA), audit energy use and retrofit Forest-owned or leased buildings as appropnate Prioritize retrofit projects on the basis of highest ratio of energy cost saving to retrofit investment cost

b. Encourage energy-efficient vehicle fleet operations through the use of fuel efficient vehicles

(1) Conduct sufficient vehicle travel and utilization studies to insure efficiency and conservation in vehicle use

(2) Obtain, within procurement regulations, fuel efficient vehicles for the Forest fleet

5. FACILITIES

a Provlde a stable and cost-efficient road system through appropnate construction, reconstruction, and/or maintenance

(1) Maintain each Forest road to a specified maintenance level as defined in Appendur ***G***

(2) Maintain all roads and related structures to a) protect resources of adjacent areas; b) meet contractual and legal obligations, and c) provlde **an** efficient transportation system

(3) Modify or obliterate portions of the Forest Development Road System as needed to meet changmg traffic demands or other management direction herein

(4) Construct or reconstruct each road to satisfy envlronmental and economc cnteria identified in the Road Development Guidelines of Appendix F

(5) In streams supporting a fishery, use stream crossings that permit fish passage. Forexample, use archculverts or bndges when needed and where suitable foundation conditions exist

(6) Areas with road densities of 2 mles per square mile or higher wlll be evaluated for habitat effectiveness Roads and travel networks will be assessed for existing and future needs. Roads no longer needed for administrative purposes will be closed to enhance wildlife habitat, and to protect water quality and soil productivlty Some roads may be obliterated and the land restored to a near natural gradient

b Cooperate with Federal and State agencies, counties, andpnvate entities to obtain needed modifications of roads under their junsdictions

(1) Renew locatiqn and design specifications for roads built under permit or license, and require protection of all resources

c Provide a stable and cost-efficient trail system through appropriate construction, reconstruction, and/or maintenance

(1) Complete management plans for the Pacific Crest Scenic Trail, Spencer Meadows National Recreation Trail, Lassen Emigrant Trail, and Noble's Emigrant Trail, as required by the National Trails System Act of 1968 Meet current objectives for trail management and use of all designated hiking, equestrian, off-highway vehicle, and over-snow trails.

(2) Maintain all trails and related structures to· a) protect the recreation amenities of adjacent areas, b) provide reasonable access, c) be an efficient transportation system; and d) provide various experience levels according to type and volume of use

(3) Modify parts of the Forest Development Trail System as needed to meet changmg use demands

(4) Construct, reconstruct, and maintain each trail to satisfy reasonable environmental and economic critena

(5) When constructing or reconstructing a trailhead, provide for equestrian vehicle parking where feasible.

(6) Look for opportunities to convert roads that are no longer needed to equestrian, mountain bike and/or pedestrian trails

d. Provide administrative sites and facilities that effectively and cost-efficiently serve the public and the Forest Semce workforce

(1) Maintain all dams on National Forest land to: a) protect human life and downstream property; b) protect adjacent resources, c) meet contractual and legal obligations; and d) function efficiently

(2) Maintain all buildings and related facilities to· a) preserve the facility's design-life, b) function efficiently, and c) exhibit a pleasant appearance to the public and the workforce Maintain facilities to meet codes applicable at the time of construction, unless otherwise required by law

(3) In all remodeling, new construction, or building leasing, comply with an approved Administrative Site Development Plan to provide functional, aesthetically-pleasing, energy-efficient, and cost-effective facilities. Comply with all applicable Federal, State, and local building codes.

(4) Remove those buildings and related facilities no longer meeting the needs of managmg the Forest, subject to requirements of cultural resource protection.

6. FIREANDFUELS

a Rely on fuel reduction and an effective fire protection organization to minimize mldfire losses Maintain a Fire Management Ef-

fectiveness Index (FMEI) of 154 (see Appendix H)

(1) Suppress all wildfires using confinement, containment, and/or control strategies as specified in the applicable prescnption of this chapter.

(2) Take presuppression and suppression actions that protect life and property, and mininnze resource degradation

(3) Avoid fire line construction with bulldozers on slopes steeper than 40 percent or soils with an Erosion Hazard Rating of "high

(4) Cooperate with other agencies, and utilize the "closest forces" concept for fire suppression

(5) Assign a Forest Semce representative to all fires larger than 10 acres with potential to become larger in Management Areas under non-Forest Semce protection

(6) Within the planning penod identify project areas where fire from naturally occumng unplanned ignition may be allowed to safely burn mthin a predetermined prescnption.

(7) Complete prescnbed burning plans for mlderness areas (see Appendix **A)**

b Promote fire prevention commensurate with resource values at risk.

(1) Design prevention efforts to minimize human-caused wildfires and unacceptahle resource value change

c Reduce fuels by prescnbing fire and allowing biomass use, while maintaining soil and water quality

(1) Modify or maintain activlty and natural fuels to levels that result in the most cost-efficient fire protection program to meet land and resource management goals and objectives

(2) Whenever management activlty creates a fuel hazard greater than would exist without the activity, an analysis is required to determine the level of treatment appropnate. to meet land and resource objectives.

(3) Dispose of all site preparation fuels (piles, windrows, culls, etc) that are not needed for wildlife or soil protection purposes

(4) Plan and conduct fuels management in compliance with Best Management Practices

(5) In areas used by livestock, apply fuels management that facilitates forage production and ease of livestock movement, if compatible with other resource objectives

(6) Encourage and cooperate with other agencies and adjacent landowners to treat fuel accumulations that threaten public lands

(7) Use prescnbed under-burning to minimize fuels, prevent invasion of sagebrush and rabbit brush, and promote native grasses and forbs

(8) Govern each prescnbed burn by a prescribed burn plan containing specific resource objectives and prescriptions

7. FIREWOOD

a. Provlde a sustained supply of firewood, giving pnority to personal use

(1) Give preference to personal use over industrial use of firewood

(2) Limit firewood removal as needed to assure viability of cavity- and snag-dependent mldhfe populations

(3) Use timber sale contract provlsions to provide accessible matenal smtable for firewood

(4) Keep designated roads open for a sufficient penod of time after loggmg is complete to allow firewood utilization

(5) Designate free-use areas to utilize less desirable species, meet fuel treatment prionties, encourage firewood gathering in less accessible areas, or meet other management objectives

(6) Designate where no woodcutting is allowed by signing trees or areas important for wildlife

(7) Restnct cuttingofstandmghardwoods (dead or alive) for firewood except to meet specifiedmanagement objectives

8. FISH

a. Maintain or improve habitat for all native species and compatible non-native species

(1) Apply the Riparian/Fish Prescription to ail perennial, intermittent and ephemeral streams (as needed), lakeshore areas, wetlands, and around seeps, springs, and wet meadows.

(2) Provide habitats required by Management Indicator Species as specified in suitable Fish Habitat Capability Models.

(3) Where site potential exlsts, provlde high habitat capability, as defined in appropnate Habitat Capability Models, for species emphasized in the Management Area Direction.

(4) Identify and inventory pnmary watersheds to assess existing habitat conditions utilizing the Region 5 Fish Habitat Assessment Handbook (FSH **2609** 23)

(5) Coordinate with the California Department of Fish and Game and other concerned agencies to update the statewide California Fish and Wildlife Management Plan (Sikes Act Plan)

(6) Continue cooperation with California Department of Fish and Game for fish stocking in desired mlderness lakes and other lakes

(7) Cooperate with the California Department of Fish and Game in projects to enhance natural populations of anadromous fish

(8) Approve water developments only if potential adverse impacts on fisheries can be avoided or mitigated.

(9) Evaluate all proposed projects for potential impacts to the fishery resource, particularly projects that may affect anadromous fishenes

9. FORESTHEALTH

a Reduce impacts of forest pests on all resources to acceptable levels through integrated pest management

(1) Use an integrated pest management (IPM) approach to managmg pests during the planning and implementation of all activities that influence vegetation Consider a full range of pest management alternatives for each project Select treatment methods through anenvlronmental analysis process that considers the envlronmental effects, treatment efficacy, and cost effectiveness of each alternative Determine monitonng and enforcement plans dunng this site-specific process Also use pest detection, surveillance, evaluation, prevention, suppression and post-action evaluation as integral components of this IPM approach

(2) Coordinate actions to control significant animal damage with the Cahfornia Department of Fish and Game, the U S Fish and Wildlife Service, and other agencies and cooperators

(3) Cooperate with the State and counties in control of noxious weeds and predation

(4) Perform direct rodent control (trapping or fumigation) within or adjacent to developed recreation sites as necessary to protect public health

(5) Coordinate control of public health problems with the California Department of Health Services and appropnate local health agencies.

10. GEOLOGYAND GROUNDWATER

a. Conduct geologic inventones needed for assessments of proposed projects.

(1) Conduct a Forest-wide Geologic Resources Inventory of a sufficiently specific nature to allow for the delineation of potential geologic resources (rock aggregate, water bearing gravels, etc.) and the delineation of geologic constraints (landslide hazard, high volcanic hazard, etc) within the planning penod

(2) Pnor to any site development, perform a Geologic Resources Inventory allowing classification of soils, surface deposits, and rock matenals and identifying engineering properties of soil and rock matenals as may be relevant to the project.

(3) Consider volcanic, earthquake, and avalanche hazards when planning facility locations.

11. LANDS

a Initiate land ownership adjustments to achieve ownership patterns facilitating Forest management and minimizing administrative costs.

b Survey, mark and post property boundaries adjacent to pnvate lands, wilderness and wild and scenic rivers prior to Forest activity adjacent to them

c Acquire nghts-of-way needed to efficiently manage Forest resources and provide public access

(1) When analyzing a proposed right-of-way, evaluate the need for full public access vs limited use (administrative and commercial hauling only), considenng

(a) proportion of public ownership,

(b) road maintenance responsibilities,

(c) alternate public access,

(d) need for closures for resource management

(2) Participate in cost-shanng agreements with adjacent landowners

d. Pursue land withdrawals from mineral entry or disposal when needed to protect Forest improvements and areas of special significance.

(1) Confine withdrawal applications to cntical lands vulnerable to mineral or hydropower development that are

(a) occupied by permanent improvements (e g. developed recreation sites, admnistrative facilities), or

(b) mthout improvements, but with significant values that may be threatened (e g Research Natural Areas, Expenmental Forests).

(2) Review all existing withdrawals with the Department of the Intenor before October 1993, to determine whether each mthdrawal should continue and for how long. Renew withdrawals from mineral entry first and withdrawals from sale and disposal (including power sites) second.

e Issue special use permts, in conformance with Management Area Direction if a net public benefit will result

(1) Do not approve special use applications if a similar use can reasonably be made of pnvate land

(2) Inventory and set aside within the planning penod those electronic sites appropnate for the use of the Forest Service and private pernuttees

(3) Bury new telephone lines, and new or reconstructed power lines less than 33 KV, unless (a) Visual Quality Objectives can be met mthout burying; (b) geologic conditions make burying infeasible, or (c) burying would produce greater long-term site disturbance.

(4) To evaluate special use applications for an infrastructure serving a proposed subdivision within the National Forest boundary

(a) consider impacts generated by the long-term needs of the pnvate development, including utilities, fire stations, solidwaste disposal sites, etc

(b) generally confine to private land those facilities that are essential to the development.

(c) allow only one access route per subdivision or parcel, unless public safety warrants alternate escape routes in cases of fire or other natural disaster

(5) For a proposed hydroelectric project requiring a Federal Energy Regulatory Commssion (FERC) license, evaluate likely environmental impacts and prepare a 4(e) letter to FERC listing mitigation requirements (see Chapter 8, Glossary, in the **FEIS)** When the FERC license is issued, prepare a special use permit including mitigation requirements for those facilities on Forest land.

(6) For an emsting hydroelectric facility licensed hy FERC, regulate in cooperation with other agencies

f. Avoid the proliferation of separate utility nghts-of-way

g Resolve all unauthorized occupancies on National Forest lands

(1) Resolve unauthonzed use on National Forest lands by removing the occupancy, issuing special use permits, or adjusting land ownership (including use of the Small Tracts Act)

h. Continue to coordinate with concerned agencies to preserve unique resources in the Eagle Lake, Lake Britton, and Lassen Volcanic National Park areas

i Designate the following as multi-user electronic sites: Turner Mountain, Hamilton Mountain, Morgan Summit, Keddie Ridge, Colby Mountain, and Hall's Flat

12. LAW ENFORCEMENT

a Protect Forest resources to insure public safety and retain resource values.

(1) Maintain the Forest resource protection plan and conduct law enforcement according to the following pnonties

(a) take action in any situation that threatens injury to the public or an employee

(b) investigate and apprehend trespassers engaged in resource destruction or illegal drug activity

(c) takeappropnate action in response to property theft, property damage, or civil disorder

(d) investigate and prosecute all other felony trespass.

(e) investigate and prosecute misdemeanor violations, especially those involving repeat offenders, fraudulent practices, or high visibility.

(f) investigate and document cases that could possibly lead to tort claims

(g) in advance of needed action with cooperating agencies, identify responsibilities and procedures for search and rescue and other law enforcement

13. MINERALS

a Provide for mineral exploration and development while protecting surface resources.

(1) In actively producing sites, or in areas containing known mineral reserves, undertake only those Forest activities that are Compatible with mineral activity Consider exceptions if unique resource values are present

(2) Avoid or minimize capital investments in or adjacent to areas with known reserves and alienated mineral rights (those held by other parties on National Forest land).

(3) In plans of operations, require reclamation of lands disturbed by mining compatible with Management Area Direction

(4) Recommend denial of mineral lease applications in areas proposed for land exchange, or in areas in where the Forest Service **or** U S Fish and Wildlife Service has concluded that mining would jeopardize the survival or recovery of a Federally-listed Threatened or Endangered species.

(5) Evaluate and minimize potential impacts to Lassen Volcanic National Park when processing mineral lease applications

(6) When consenting to mineral leasing, recommend special stipulations if needed to protect surface resources and uses, as guided by the mineral lease stipulation criteria in Appendix I

(7) Maintain an inventory of mineral materials sites, specifying which are available for public and/or Forest Service use

(8) Prepare a site development and rehabilitation plan before development and use of a mineral materials site

(9) Within areas withdrawn from mineral entry, have a Forest Service mineral examiner verify any claimed valid existing rights prior to authorization of any surface-disturbing mineral or access development activities

(10) Restrict access and development in specially designated areas (and in areas withdrawn from mineral entry where valid existing rights may be exercised) to the extent needed to protect those values for which the area was created or withdrawn

14. RANGE

a. Provide for long-term rangeland productivity for fisheries, wildlife, soil, water, timber, and livestock forage values Emphasize managing rangelands to meet desired ecological conditions

(1) Manage grazing to achieve desired vegetative conditions on all rangelands Desired vegetative conditions means all rangelands are in satisfactory or better ecologic condition with stable or upward trends

(2) On perennial grass rangelands, base forage utilization on existing ecologic condition and trend, plant community sensitivity, desired future condition and grazing management system Proper use standards will be followed as explained in the Region 5 Range Analysis Handbook (FSH 2209.21) On annual grass rangelands, leave a minimum of 1,000 pounds of current year's herbaceous production per acre to protect the soil and to maintain an adequate germination seedbed.

(3) Implement livestock management systems and cost-effective range improvements to protect resource values and to meet vegetative management goals

(4) Structural and non-structural range improvements will provide for the needs of wildlife and other resource values, as well as livestock

(5) Where recommended, allow no livestock grazing on perennial grass range for two growing seasons after pre-

scnbed or natural fires and planting or seeding forage species to allow desirable plants to establish

(6) Take advantage of non-use for personal convenience by not filling in with temporary grazing permits, or allowing pernutted livestock from other allotments, until unsatisfactory resource conditions improve or proper mitigation has been implemented

(7) Analyze resource conditions on allotments, and make management changes as necessary to correct any unsatisfactory conditions.

b. Revise allotment management plans, as necessary, to meet management direction and vegetative management goals

(1) Coordinate allotment management planmng and activities with other resources including water, soils, fish, wldlife, timber, and npanan. A list of the allotments on the Forest, ranked by current pnonty for revision, is found in Appendix V This list will be revised as resource conditions and/or management priorities change

(2) Forage utilization standards will be based on vegetative type and condition, and will be incorporated into allotment management plans Allotment management plans may include utilization standards which are lower or occasionally higher than specified in the Forest Plan Higher utilization standards will be acceptable when they are designed to meet resource objectives and desired future conditions for a gwen management area.

(3) Develop a management plan for the Brushy Mountain Wild Horse Territory

c Establish Forest standards for vegetation utilization until site specific utilization standards are in place Site specific utilization standards will be identified in allotment management plans and annual operating plans of use for each allotment Implement these standards so that they are in practice for all livestock grazing by the end of the first decade

Generally, those allotments with management strategies that provlde for improved plant physiological vigor and protection of npanan dependent resources will have higher acceptable levels of proper use of forage species

(1) ***Upland Rangelands*** Allow ***50*** percent utilization ***of*** perennial rangeland vegetation that is in at least fair condition with stable trend and not associated with riparian zones Decrease utilization to 0-49 percent on perennial vegetation where rangeland condition is in less than fair condition or has a downward trend Utilization is based upon current annual year's growth (actual percent by weight)

(2) ***Riparian Zones*** Site potential and desired future condition will be defined **for** specific areas Standards will be developed to achieve these conditions Until site specific standards are in place, the following will be used to maintain or improve nparian condition

(a) Streamsides

Stubble *Height* - Retain **4-6** inches on streamside vegetative biomass at end of the grazing season. This standard may be modified depending upon stream condition and grazing system

Bank *Stability* - Apply management strategies to achieve at least 80 percent of naturally occurring streambank stability Stability will be measured in linear feet by stream reach

*Utilization** - Do not exceed **45** percent use of streamside herbaceous veg-

* Utilization is based upon current annual year's growth, actual percent by weight

etation with no reduction in ground cover for streamside zones in good condition (Utilization may exceed **45** percent when intensive systems are used to restore streamside zones to good condition or to maintain riparian zones already in good condition) For streamside zones in poor condition, utilization may be 0-25 percent until restored to fair condition

(b) *Riparian Areas*

Other Riparian areas (wetlands, meadows, lakeshores) Other riparian areas will be treated as special situations Desired future condition will be descnbed for each of these areas. Management standards will be designed to achieve these desired conditions

d Manage streamsides and other ripanan areas forest-wide to reach natural or achievable site potential and desired ecologcal conditions Desired future conditions, where site potential exists, are late seral communities in good or better condition. (Refer to npanan condition classifications in the Water and Riparian Areas Standards and Guidelines.)

(1) Witlnn grazing allotments, design grazing systems and manage livestock to achieve good or better ecological condition with stable or upward trends in nparian areas

(2) Allow no salting or livestock supplement stations within **1/4** mile of water developments, streams or other nparian areas

(3) Modify grazing schedules, institute or modify grazing systems, reduce numbers, or eliminate livestock as necessary to prevent or correct damage to nparian vegetation or streambanks.

15. RECREATION

a. Provlde a wide range of outdoor recreation opportunities to meet public demand by furnishing different levels of access, service, facilities. and information.

(1) Provlde a choice of developed recreation opportunities ranging from remote and pnmitive to accessible and highly developed (development levels **1-4** as defined in Appendix **K** of this Plan)

(2) Improve access for persons with disabilities at recreation sites

(3) Manage recreation according to the Recreation Opportunity Spectrum (ROS) classes descnbed in the ROS User's Guide, as specified in Appendix **J,** and the Management Prescnptions Refer to the separate ROS Map for the distnbution of ROS classes throughout the Forest.

(4) Remove hazard trees in developed recreation sites, and along roads and trails

(5) Inventory dispersed recreation use and impacts within the planning period

(6) Prepare a Recreation Opportunity Guide (ROG) mthin the planning penod to increase public awareness of, and participation in, dispersed recreation

(7) Provlde and maintain adequate directional signs to all recreational facilities

(8) Provlde adequate off-road parking at trailheads to accommodate acceptable levels of use

(9) Maintain trailhead mformation sites that provide safety directions and effective recreation use mformation

(10) Protect recreation amenities around areas of concentrated use.

(11) Dunng project analyses, identify dispersed campsites Near those identified, maintain natural-appeanng timber stands meeting a vlsual quality objective of Partial Retention

(12) Use available technology to provlde odor-free, cost effective toilet facilities where demand warrants their placement Sanitary facilities will be blended to retain the line, form, color and texture of the surrounding area wherever possible

(13) Periodically, plant native trees in developed campground to assure continued tree cover for the future

(14) When railroad lines through the Forest are scheduled for abandonment, assess the need for their use as multipurpose recreation trails. File for railbanking appropnate lines with the Interstate Commerce Commission

b Provide interpretive services and facilities to inform the public about Forest resources and management

(1) Promote public awareness by providing information on forest management practices such as dispersed recreation opportunities, selected cultural resource areas, timber harvesting and reforestation, Threatened, Endangered and Sensitive species, scenic areas, and geological and botanical special interest areas

(2) Cooperate with other public agencies and educational/scientific institutions to provide a full range of natural resource information to the public.

(3) Cooperate with citizens' groups and volunteers to help staff and finance exhibits and publications

(4) Provlde recreation vlsitor maps and other publications at all Forest offices, developed recreation sites, and unstaffed vlsitor information stations

(5) Construct Forest entrance stations and new interpretive facilities.

(6) Cooperate in the planning, design, construction, and maintenance of a joint Lassen National Forest/Lassen Volcanic National Park (LVNP) Visitor's Center on National Forest land near the north entrance to LVNP

(7) Inventory and recommend qualifying roads in the Forest for the Scenic Byways program

c. Provlde diverse opportunities for off-highway vehicle (OHV) recreation

(1) Mountainbike and OHV use is allowed in all areas not specifically closed to protect other resource values.

(2) Use State of California OHV (Greensticker) grant monies to help finance design, construction, and maintenance of ***OHV*** stagmg areas, trailheads, and trails

(3) In consultation with local and Statewide user groups, plan and provide *OHV* facilities such as staging areas, trailheads with cleared parking, sanitation facilities, information signing, and trails

(4) Cooperate with the State, other agencies, and user groups to identify and develop segments of *OHV* trails that contnbute to a Statewide OHV Trail System connecting use areas and allowing long-distance trail tounng

(5) Encourage ***OHV*** groups to participate in the Adopt-a-Trail program

d. Provide diverse opportunities for winter sports.

(1) Continue to implement the preferred alternative of the 1989 Winter OHV Management Plan, for the construction of trailheads and trail networks for winter recreation

(2) Cooperate with the State of California to identify locations where snow removal is needed to accommodate safe, off-highway parking for dispersed winter use

(3) Designate and mark trails needed for additional dispersed winter recreation

(4) Designate and sign cross-country ski trails

(5) Accommodate snowmobile use over most of the Forest where not in conflict with other uses or resources Due to the dispersed nature of the activities, do not provide regular patrols Provide first aid services only as Forest personnel happen to be available

(6) Minimize user conflicts by specifying allowable winter use on certain roads and trails (for example cross-country ski trails, snowmobile-only trails or winter 4-wheel drive only)

(7) Prohibit snow removal on designated snowmobile and cross-country ski trails between specified dates

(8) Areas for snow play will not be designated

e Manage recreation residences as components of the overall National Forest recreation program Work in partnership with the holders of recreation residence permits to utilize the recreational benefits of these residences

(1) Issue 20-year term permits and review them every 10 years Give permit holders at least 10 years advance written notice if the use is not to be continued

(2) Evaluate continuation of recreation residence permits with public use and recreational demand for the area When considering non-renewal of a recreation residence use in favor of an alternative use, insure the weight of the evidence favors the alternate use before deciding on non-renewal

(3) Prevent unauthorized full-time residence use by enforcing the terms of the special use permit

f Continue private operation of National Forest developed recreation sites where it best serves public recreation needs

(1) Work in partnership with holders of resort special use permits to maximize the recreation benefits of these resorts Eliminate resorts under special use permit if future use determinations indicate removal is in the public interest.

(2) Continue to operate the developed campgrounds through use of concessionaires where the quality of public service can be sustained or improved

(3) Continue to provide for private sector organization camps, limit acreages to those clearly needed

g. Work in partnership with local communities to expand recreational facilities, programs, and trails on both public and private land

1 Include rural development considerations in resource decisions to assist impact counties in achieving long-term, diversified economic development and improved quality of life.

2 Actively participate in planning and implementing community-based rural development activities

3. Develop and provide timely and current research and resource information on rural development opportunities

4 Communicate to Forest employees and the public that rural development is part of the agency's mission.

16. SENSITIVE PLANTS

a. Maintain habitat and viable populations to contribute to eventual de-listing of Sensitive plants that are found on the Forest.

(1) Identify, preserve, or enhance Sensitive plant populations

(2) Restrict vegetative or soil disturbance in areas occupied by Sensitive plants, unless manipulation is needed to perpetuate the species

(3) Within the planning period, develop Species Management Guides for Sen-

sitive plants that identify population goals and compatible management activities

b Manage Sensitive plants to insure that species do not become Threatened or Endangered because of Forest Service actions

(1) Evaluate all proposed projects for potential Sensitive plant habitat. Conduct surveys at the correct time of year for species identification if potential habitat exists in a project area.

(2) If Sensitive plants are found in a proposed project, modify the project or take mitigative action as necessary to protect the habitat

17. SOILS

a Prevent irreversible losses of soil productivity.

(1) Assess impacts of proposed projects on the soil resource, and take appropriate mitigative action

(a) The areal extent of detrimental soil disturbance (DSD) will not exceed **15** percent of the area dedicated to growing vegetation

(b) Soil cover is sufficient to prevent the rate of accelerated soil erosion from exceeding the rate of soil formation

(c) Soil porosity and bulk density are at least 90 percent of the measurements found under undisturbed or natural conditions.

(d) Organic matter is present in amounts sufficient to prevent significant short or long-term nutrient cycle deficits

1. Soil organic matter in the upper 12 inches of soil is at least **85** percent of the total soil organic matter found under undisturbed or natural conditions.

2 Litter and duff occurs on at least 50 percent of the area.

3 Large woody material, when occurring in the forested area, is at least 5 logs per acre in contact with the soil surface, and represents the total range of decomposition

(2) Field-verify existing reconnaissance soil resource inventory data (Order **3** surveys) for each land-disturbing project

(3) Conduct detailed soil surveys (usually Order 2) for all project areas that have an erosion hazard rating of "high" or "very high (according to the R-5 rating system), landslides or unstable areas, potential revegetation or regeneration problems, active erosion, or a significant potential to contribute to cumulative degradation of water quality

(4) Assess each proposed regeneration harvest area to assure the soil is capable of supporting the establishment of trees within five years.

(5) Assess each proposed revegetation area to assure the soil is capable of supporting the establishment of grass or brush within two years

b. Restore all substantial areas of significantly degraded soil

(1) Identify, evaluate, and establish treatment priority for areas of significantly degraded soils Treat within two decades

18. SPECIAL AREAS

a Protect areas of outstanding scientific, scenic, botanic or geologic value as Research Natural Areas (RNA's), or Special Interest Areas (SIA's)

(1) Establish Research Natural Areas for baseline ecological study, protection of gene pools, and habitat preservation for Forest-listed Sensitive plant spe-

cies Recommend to the Chief of the Forest Service RNA designation of the following areas:

Green Island Lake	*1,210 acres*
Indian Creek	*3,890 acres*
Soda Ridge	*1,295 acres*
Tcmbered Crater	*1,777 acres*
Mayfield	*980 acres*
Graham Pinery	*660 acres*

(2) Upon approval of this Forest Plan, the followng areas are classified as Special Interest Areas pursuant to Title **36,** Code of Federal Regulations, Section 294.1(a) and authonty vested in the Regional Forester by the Chief of the Forest Service

Black Rock Geologccal Area	*15 acres*
Crater Lake Geological Area	*200 acres*
Deep Hole Geologic Area	*100 acres*
Homer/Deerheart Scenic Area	*1,480 acres*
Montgomery Creek Grove Botanical Area	*20 acres*
Murken Botanical Area	*380 acres*
Willow Lake Bog Botanical Area	*110 acres*

(3) Prior to formal classification (or designation), protect the identified values of all of the above recommended areas.

(4) Protect and preserve the values of each special area as identified in an establishment report **or** area management plan, in conformance with the Special Areas Prescription and Management Area direction.

(5) Continue to inventory and recommend additional qualifying special areas throughout the planning period

19. TIMBER

a Provlde a sustained quantity of forest products by selecting silvicultural practices from the full range available on an indivldual stand basis, in accordance with biological requirements, economic efficiency, and Forest Goals for other resources.

(1) Timber harvesting shall occur on lands classified as suitable for timber production Harvesting will also occur on non-suitable lands where necessary to meet other multiple use objectives or to protect resource values if the Forest Plan establishes that such actions are appropnate.

(2) Apply both even-aged and uneven-aged timber management for timber production Apply uneven-aged management where necessary to protect or enhance other emphasized resources, as stated in the Management Prescnptions and Management Area direction

(3) Manage the landscape to provlde a mosaic of even-aged and uneven-aged timber stands

(4) Where recommended, emphasize uneven-aged timber management in three Management Areas (MA's) to test the feasibility of that system over large areas of land MA #14 Eagle (eastside pine), MA #17 Lost (mured conifer), and MA #28 Feather River (mixed conifer and red fir) Apply elsewhere in the Forest where appropnate.

(5) Implement even-aged silvicultural treatments that will allow groups of saplings and poles to be retained where

(a) retention will not add significantly to logging cost;

(b) the groups will be fully stocked with crop trees free of dwarf mistletoe and capable of normal growth (releasable);

(c) the groups will not be excessively damaged by site preparation activities and future harvesting,

(d) effects on vlsual quality and wildlife habitat can be mitigated by leavlng advanced regeneration or a partial overstory,

(e) effects on soils and water quality can be mitigated by leaving islands of undisturbed areas or near natural conditions

(6) Choose loggmg systems based on sale area character, sale objectives, resource protection, and costs. Alternatives include, but are not limited to, tractor, cable, and helicopter systems

(7) Avoid tractor skidding on slopes greater than **35** percent and on soils with an erosion hazard rating greater than 9

(8) On cinder cones with a shallow (less than 20 inches) soil mantle, avoid tractor skidding on slopes greater than 20 percent

(9) Design the size, shape, and distribution of openings to meet objectives for visual quality, recreation, fire management, and mldlife habitat stated herein and to permit efficient harvest.

(10) Select clearcutting only when it is the optimum silvlcultural method and supported by site specific analysis Mitigate resource impacts from clearcutting b y

(a) avoiding clearcuts greater than 20 acres in size,

(b) designing clearcuts to maintain visual quality objectives , provlde continuity of wildlife habitat and travel corndors, and protect soil productivity;

(c) dispersing clearcut units, if possible so that a logical future harvest unit of at least five acres separates them,

(d) pre-designating landings and skid trails to minimize the areal extent of detrimental soil disturbance (DSD),

(e) establishing streamside management zones of sufficient width to protect water quality, fish and wildlife habitat, and other riparian values;

(f) designing clearcut units to save advanced natural regeneration where possible;

(g) designing fuel treatments and site preparation activities to minimize soil compaction, loss of organic matter and soil nutnents;

(h) leavmg acceptable levels of large and small woody debris for soil cover, nutnent recycling, and wildlife habitat,

(1) reforesting clearcut units to maintain the vegetative composition of natural stands where appropriate.

(11) Obtain Forest Supervisor approval for proposed clearcuts larger than 20 acres Obtain Regional Forester approval for proposed clearcuts larger than 40 acres

(12) On a case by case basis, allow up to fifteen percent of a clearcut penmeter to be in common with other "openings" A clearcut will be considered an opening until

(a) minimum stocking levels are met,

(b) an average true height of 4 **5** feet is attained, and

(c) the stocking is free to grow

Young conifers are Considered free to grow if they have the growth potential to meet yield table projections mthout further treatment of competing vegetation **or** other forest pests

(13) Regenerate harvested lands to achieve minimum stocking standards within five years of final harvest, unless a different period is needed to achieve wildlife, visual, or other resource objectives stated in this Plan For minimum and desired stocking levels, see Appendix C

(14) When artificially regenerating harvested lands, maintain a mix of tree species approximating the composition of natural stands where recommended

(15) Strive to maintain a tree seed collection that meets the "Base Level Program" described in "Tree Improvement Plan for the California Region", 1976, and that provides reserves for 10 years of planting

(16) Where vegetation competition will substantially inhibit tree survival and growth, analyze a full range of available vegetative management techniques Select the best method for each project through site-specific environmental analysis that reflects the relative effectiveness of these techniques and the guidance of the applicable prescriptions and Management Area direction Develop monitoring and enforcement provisions through the environmental analysis, and include them in the project plans.

(17) Permit personal-use Christmas tree cutting Provide commercial Christmas tree sales to utilize trees that would otherwise be destroyed during sawtimber harvest and in areas where timber productivity will be maintained or enhanced.

(18) Provide a diversity of tree species and mix of size classes when commercial thinning uneven-aged stands.

(19) Conduct an active program of salvage/sanitation harvesting while meeting specified snag levels as stated in the Forest-wide Standards and Guidelines, Management Prescriptions, and Management Area direction

(20) Conduct a plantation inventory in conjunction with the next timber inventory This inventory will determine if growth goals assumed in the Forest yields tables are being achieved

(21) Continue the seed collection and planting program for sugar pine to develop seedlings with genetic resistance to white pine blister rust

(22) Use grazing as an option to reduce vegetative competition with seedlings in plantations.

20. VEGETATION AND DIVERSITY

a. Provide vegetative diversity to maintain scenic quality, viable populations of plants and wildlife, and to minimize loss from wildfire

(1) Provide a mosaic of chaparral age and size classes to meet Management Area direction

(2) When treating chaparral near private lands or lands administered by other agencies, coordinate with private landowners, the California Department of Forestry, the Bureau of Land Management, and other agencies

(3) Provide at least five percent of the acreage of each vegetation type that occurs in a Management Area in each seral stage The vegetation types are mixed conifer, eastside pine, red fir, hardwoods, and chaparral. Seral stages are defined in Appendix U The required minimum acreages per seral stage for each Management Area are given in the "Desired State for Diversity" sections of the Management Area Direction

(4) Where five percent of each vegetative type and seral stage is currently not available, plan to correct the deficit

(5) For each Management Area, determine the arrangement of vegetation types and seral stages needed to maintain viability of all wildlife species, based on accepted habitat capability models and other information

(6) Maintain late seral stage acreage in old growth retention areas designated in each Management Area Old growth retention areas are chosen based on stand suitability and inclusion or prox-

imity to areas reserved from timber management It can be assumed that early and mid-seral stages are adequately represented, based on past and current management Limited timber management may take place in old growth retention areas, but only where necessary to enhance the desirable charactenstics of old growth stands Where this occurs, Standards and Guidelines in the G Prescription will be followed

(7) Replace old growth retention areas that are lost due to fires or other natural catastrophes with suitable late seral habitat in the Management Area

(8) As a part of timber stand regeneration, plant or otherwise encourage all native commercial tree species in naturally occurnng proportions across the entire Forest

21. VISUAL RESOURCES

a Throughout the Forest, maintain vlsual quality commensurate with other resource needs Adopt and apply specific Visual Quality Objectives (VQO's) for all areas of the Forest

(1) Meet or exceed VQO's identified on the "Adopted Visual Quality Objective Map" or in the prescriptions and Management Area Direction Refer to Appendix N for VQO definitions To meet Retention and Partial Retention VQO's, use additional guidelines listed in the View/Timber Prescnption To meet Modification and Maximum Modification VQO's, use additional guidelines gwen in the Timber Prescnption.

(2) Keep Visual Quality Objectives compatible with Recreation Opportunity Spectrum classes as specified in Appendix J.

(3) Vegetative treatments should be designed to blend as much as possible with the charactenstic landscape

(4) Buildings or other structures owned by the Forest Service, or under special use p e n t , should be shaped and colored to blend with the natural landscape

(5) Road construction and other earthwork should be designed to minimize cuts and fills Areas of bare soil should be revegetated by natural or artificial methods.

b Where past management actinties do not meet adopted vlsual quality objectives, use visual rehabilitation to return vlsual quality to an acceptable level

(1) If Adopted VQO's cannot be met for management activities in response to fire, insect and disease attack, or other catastrophic event, then assess and document any such devlation in a site-specific envlronmental analysis

22. WATER AND RIPARIAN AREXS

a. Provlde water of sufficient quality and quantity to meet current needs Meet additional future demand where compatible with other resource needs.

(1) Implement Best Management Practices (BMP's) (Appendix Q) to meet water quality objectives stated in 22 c below, and maintain and improve the quality of surface waters on the Forest Identify methods for applying the BMP's during envlronmental analysis of proposed projects, and incorporate them into project planning documents.

(2) Provlde water for Forest uses by filing for and maintaining all water nghts needed for such uses Deny special use permit applications and protest other parties' water rights applications that jeopardize Forest uses or fish and wildlife needs

(3) Observe the following pnority for use of lakes and reservoirs (1) fish and wildlife habitat, (2) livestock water, (3) fire suppression, and (4) road watering Priority use for stockponds is livestock water

(4) If a lake, reservoir, or stock pond is depleted by fire suppression, replenish it if possible

(5) When a lake, reservoir, or stock pond is used for road watering (dust abatement), do not deplete it below one-half capacity unless authorized by the District Ranger after considering all resource needs.

b Limit individual project impacts as needed to avoid adverse cumulative impacts on water quality and fisheries

(1) Consider third-order watershed areas when analyzing a proposed project's effects

(2) Use a quantitative method to assess project effects, consistent with the Regional Best Management Practice to mitigate cumulative effects

(3) Give priority to analysis of projects that may affect anadromous fisheries, domestic uses, other Class I streams (see FEIS Glossary under "stream class") or Eagle Lake

(4) Conduct formal cumulative watershed effects analysis in accordance with R5 FSH 2509.22, Chapter 20. Adjust project impacts and/or timing to keep disturbance below the appropriate threshold of concern (TOC) in all affected subbasins and watersheds.

(5) Where formal analysis of a project's cumulative watershed effects is not necessary or feasible, document the reasons and limit disturbance to five percent per decade in sensitive areas, per Land Management Planning Direction for the Pacific Southwest Region (4-1H 2.b(2)) (Sensitive areas are watershed acres that have high erosion potential, steep slopes, or high instability See FEIS Glossary under "sensitive watershed lands")

(6) Where appropriate, protect water quality and aquatic resources by prohibiting or restricting use of internal combustion boat motors on small lakes

c Comply with Federal, State, regional and local water quality regulations, requirements and standards

(1) Comply with discharge requirements of the Clean Water Act, State drinking water and sanitary regulations, and State and Regional Water Quality Control Board basin plans and rulings.

(2) Take immediate remedial action if activities under Forest Service management violate water quality standards

(3) Coordinate with appropriate federal, State, and local agencies and nearby downstream water users when water quality may be affected by Forest projects.

(4) Participate in cooperative hydrology projects, such as snow surveys and Eagle Lake water quality monitoring

(5) Restrict operations in flood plains and wetlands to comply with current Executive Orders

(6) Plan and administer all projects in the Eagle Lake Basin, or in the area tributary to Eagle Lake, to protect the water quality of the lake

d Maintain or improve riparian-dependent resources in and around wetlands, stream corridors (including ephemeral and intermittent streams), lakes, seeps, springs, and wet meadows.

(1) Where uses conflict, favor protection of riparian-dependent resources (water, fish, vegetation, wildlife, and aesthetics) over other resources

(2) As directed in Management Area Direction, apply the Riparian/Fish Prescription to all areas bordering perennial, intermittent and ephemeral streams (as needed), lakes, wetlands, seeps, springs, and wet meadows At a minimum, apply the prescription to lands within 100 feet of lakes, to streamside management zones (SMZ's) in accordance with the guidelines detailed in Appendix R, and within 50 feet of other areas mentioned above Analyze and document any deviations from these standards in the environmental analysis for proposed projects

(3) Analyze environmental effects of proposed projects mthin nparian areas m a NEPA document

(4) Prepare and adhere to a project implementation plan for any activity within a nparian area, and include at least the following

(a) objectives for vegetative management based upon the needs of riparian-dependent resources,

(b) maximum amount of vegetation manipulation, and manipulation procedures,

(c) the limit of soil exposure, and erosion control or other mitigation measures;

(d) analysis of areas having slopes greater than **60** percent, very high erosion potential, or high instability, and procedures to limit disturbance of these areas; and

(e) opportumties and procedures for restoration of any deteriorated area.

e Evaluate all riparian areas forest-wide and manage to reach natural or achievable site potential and desired ecological conditions Desired future conditions shall be determined for each riparian area to meet site specific management objectives

(1) Site Potential Site Potential is defined as the condition or state that existed prior to disturbance (natural site potential) or a condition or state that can be obtained where natural site potential cannot be restored (achievable site potential)

(2) **Condition Classification**

(a) Good – At least 80 percent of streambanks are stable and well vegetated Bank sloughing and erosion are uncommon The stream channel is graded relative to the floodplain The stream overflows onto the floodplain during peak flows Overhanging banks are common Ripanan vegetative communities are at or near natural or achievable site potential

(b) *Fair* – Less than 80 percent of streambanks are stable and well vegetated, The stream channel is graded relative to the floodplain The stream overflows onto floodplain dunng peak flows Overhanging banks are not common Ripanan vegetative communities are near natural or achievable site potential

(c) ***Poor*** – Less than 80 percent of streambanks are stable and well vegetated. The stream channel is incised or overbroadened Incised banks are unstable, actively eroding and not well vegetated Peak flows are contained within channels that are incised and seldom overflow onto floodplains Banks of overbroadened channels have nearly horizontal angles Riparian vegetative communities are early seral and are much less than site potential

23. WILD AND SCENIC RIVERS

a Recommend eligible, suitable nvers for federal Wild and Scenic River designation.

(1) Recommend Antelope, Deer and Mill Creeks for Wild and Scenic River designation Classification for recommended segments are shown in Table **4-3**

These recommendations are preliminary administrative recommendations that will receive review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President Congress has reserved the authonty to make final decisions on designating rivers to the National Wild and Scenic Rivers System Therefore, these recommenda-

Table 4-3

Recommended Wild and Scenic Rivers

	Segment	Classification	Approximate Location
Antelope Creek	1	Wild	North Fork below Ponderosa Way to McClure Place.
	2	Wild	North Fork from McClure Place to Forest boundary.
	3	Wild	South Fork below Ponderosa Way to North Fork.
Deer Creek	3	Recreational	Elam Campground to Deer Creek-Hwy. 32 junction.
	4	Scenic	Hwy. 32 junction to Sec. 26, T.27N., R.3E.
	5	Wild	Sec. 26, T 27N , R.3E to Beaver Creek
	6	Scenic	Beaver Creek to Ishi Wilderness.
	7	Wild	Ishi Wilderness to western forest boundary
Mill Creek	1	Recreational	Lassen National Park boundary to Hwy 36.
	2	Recreational	Hwy 36 to below Hole-In-the-Ground
	3a	Scenic	Below Hole-In-Ground to below Big Bend.
	3b	Wild	Below Big Bend to Black Rock.
	4	Scenic	Black Rock to Ishi Wilderness.
	5	Wild	Ishi Wilderness to Forest boundarv.

tions are not appealable under the agency's administrative appeal procedures

b Protect and enhance outstandingly remarkable values and the free-flowing condition of recommended and designated Wild and Scenic Rivers

(1) Administer river corridors commensurate with their proposed Wild and Scenic designations, as provided in the Wild and Scenic Rivers Act, the Special Areas Prescription, and Management Area direction

(2) Submit a legislative environmental impact statement (Appendix E of the FEIS) and prepare river management plans as provided in the Special Areas Prescription

24. WILDERNESS *AND* FURTHER PLANNING AREAS

a Protect wilderness character in designated and recommended wilderness

(1) Conduct management activities according to the Wilderness Act of 1964, the Wilderness Prescription in this Plan, and any applicable wilderness plan

(2) Recommend for wilderness Heart Lake, and portions of Mill Creek, Trail Lake B, and Wild Cattle Mountain (northern 3,900 acres) RARE II further planning areas (These recommendations are preliminary administrative recommendations that will receive review and possible modification by the Chief of the Forest Service, the Secretary of Agriculture, and the President. Congress has reserved the authority to make final decisions on Wilderness designation. Therefore, these recommendations are not appealable under the agency's administrative appeal procedures.)

(3) Protect wilderness qualities in recommended wilderness until a final decision is made by Congress

(4) Define and implement Limits of Acceptable Change (see Glossary) for each wilderness and incorporate into the wilderness plans

25. WILDLIFE

a Assist in recovery efforts for Threatened and Endangered species

(1) Provide suitable habitat for all nesting pairs of bald eagles and peregrine falcons needed to meet the Forest's share of Threatened and Endangered species recovery goals Manage newly-occupied areas to help meet species recovery goals

(2) Limited timber management may occur in bald eagle and peregrine falcon habitat Where harvesting is proposed, apply the Standards and Guidelines for the G Prescription. Seasonal restrictions may apply during the nesting season

(3) Pending enactment of new legislation, any applicable action by the Endangered Species Committee, adoption of a recovery plan by the Fish and Wildlife Service, or the results of further biological consultation, conduct timber management activities in northern spotted owl habitat in a manner not inconsistent with the Interagency Scientific Committee recommendations

(4) Conduct no scheduled timber harvesting within the HCA Determine the suitability of thinning or salvage harvesting through the NEPA process and a biological evaluation to insure that the quality of habitat will be maintained

(5) Use biological and silvicultural expertise in developing an HCA management plan

(6) Inventory and protect suitable habitat for the Shasta Crayfish

b Provlde for viable populations of California spotted owls and goshawks through coordinated management of an established network of nesting territories in appropnate habitat.

California Spotted Owls -

(1) Establish and maintain a network of 40 spotted owl habitat areas (SOHA's).

(2) In each spotted owl habitat area, maintain a minimum of 1,000 acres of suitable base habitat and 650 acres of replacement habitat. Where 1,000 acres currently do not exlst, manage the SOHA to create it as soon as possible

(3) SOHA's will be managed under a no scheduled timber harvest prescnption Determine the suitability of thinning or salvage harvesting through the NEPA process and a biological evaluation to insure the quality of habitat is maintained or enhanced

(4) Use biological and silvlcultural expertise in developing individual SOHA management plans

(5) Until habitat requirements within SOHA's are met and nesting pairs are found in all of them, protect 125 acres for non-network owl pairs to insure that 39 reproductive spotted owl pairs will provide for species viability throughout the planning period

(6) Manage SOHA's by applymg the Standards and Guidelines in the L Prescnption

Goshawks -

(7) Establish and maintain a habitat network of 113 goshawk nesting territories

(8) In each goshawk territory, provide at least 50 acres of suitable mature-tree nesting habitat, including a nest stand and an alternate nest stand

(9) Limited timber management may occur in goshawk territories. Apply the Standards and Guidelines for the G Prescription.

c. Contribute toward the population viability of marten and fisher through coordinated management of established habitat management areas in appropriate habitat.

Marten and Fisher -

(1) Estabhsh and maintain 19 habitat management areas (HMA's) for marten and 5 HMA's for fisher

(2) In each marten HMA, maintain 2,100 acres of suitable habitat Where 2,100 acres currently do not exlst, manage the HMA to create it as soon as possible

(3) In each fisher HMA, maintain approximately 9,800 acres of suitable habitat. Where 9,800 acres currently do not exist, manage the HMA to create it as soon as possible

(4) Corridors linking marten and fisher habitat management areas ulll be a minimum 600 feet wide honzontal distance

(5) Manage habitat areas by applying the Standards and Guidelines in the L Prescnption These Standards and Guidelines are based, in part, on current habitat capability models found in Appendix O

(6) Conduct no scheduled timber harvesting in marten and fisher HMA's Determine the suitability of thinning or salvage harvesting through the NEPA process and a biological evaluation to insure that the quality of habitat is maintained or enhanced.

(7) No new roads will be constructed in marten or fisher management areas until a biological evaluation determines that they ulll not degrade habitat quality for these species.

(8) New management activities will not be permitted in habitat management areas unless supported by a biological evaluation

(9) Establish the location of HMA's by December 1992, pending additional management direction and field review of tentatively selected areas

(10) Use biological and silvicultural expertise in developing habitat management plans for each HMA, if needed for management activities to occur

d Create desirable habitat size, shape, and distribution to provide both forage and cover for deer populations

(1) Maintain summer range to provide at least 20 percent forage and 20 percent thermal cover in 500 to 1,000 acre blocks See Glossary for definition of hiding and thermal cover

(2) Timber harvesting, thinning or biomass operations should provide hiding and thermal cover in all treatment areas as specified in the habitat capability model in Appendix O

(3) A restricted operating period may be imposed in identified deer fawning areas

e Provide sufficient habitat for species dependent on snags, nest cavities, and dead and down wood

(1) Where necessary to insure sufficiency of snags, identify, sign, and protect future snag replacement trees

(2) To the extent possible, maintain an average of at least 15 snags per acre on forested land units comprised of 1,000-5,000 acres each Meet the snag characteristics shown for "medium" habitat capability in the wildlife habitat capability models (see Appendix O) Green culls can be substituted for snags down to the level of at least one remaining snag/acre A green cull is defined as being at least 30 feet tall and having at least one of the following charactenstics Spike tops on the top 1/4 of the tree, broken tops, large dead limbs, existing cavities or defects in the bole that could become cavities

(3) Where possible, provide snags in groups along meadow edges, in brushfields, near streams and lakes, and in riparian areas.

(4) Where firewood or biomass removal may create a deficit in snag density, designate snags in inaccessible areas and maintain the inaccessibility Close areas to encourage natural snag recruitment

(5) Provide at least the following densities of downed logs by vegetation type on lands comprised of 50 to 200 acres In unmanaged stands, accept naturally occurring densities of down logs

Vegetation Type	Density (logs/acre)
Oak woodland, eastside pine	15
Mixed conifer, lodgepole pine	3
True fir, mountain hemlock	4

(6) For purposes of number (5) above, consider a log to be at least 15 feet long with a large-end diameter of at least 15 inches Count short log segments greater than 15 inches in diameter in proportion to their length

f Enhance ecotones and provide other special habitat elements to maintain or increase species diversity For each project

(1) Develop objectives for management of natural openings larger than five acres

(2) Develop objectives for ecotones that provide for retention or recruitment of snags, mature trees, and hiding cover

(3) Perpetuate and improve existing hardwood components

(4) Regenerate deteriorating stands to maintain existing aspen and cottonwood vegetation

(5) When harvesting in stands that contain oaks, maintain or increase to provide an average of 25 square feet of oak composition basal area per acre During regeneration harvests, retain 10 square feet of oaks per acre, and allow sprouting of cut trees to achieve **25** square feet per acre within 20 years

g Cooperate with Federal, State, and local agencies in impronng wildlife habitat for all species.

(1) Coordinate with California Department of Fish and Game, U S Fish and Wildlife Service, and other concerned agencies in the preparation and implementation of Federal and State Endangered Species recovery plans, the California Fish and Wildlife Management Plan (Sikes Act Plan), and species habitat plans

(2) Permit scientific investigations, monitoring, and artificial propagation as needed to reach population recovery levels for Threatened, Endangered and Sensitive species

h Coordinate wildlife management programs with other resource management programs to meet habitat or population objectives established for Management Indicator Species.

(1) Provide habitat for Management Indicator Species as directed in the Prescnptions or Management Area direction, according to specifications in the wildlife habitat capability models in Appendix **O**

(2) For species emphasized in the Management Area direction, provlde at least "medium" or better habitat capability, as defined in accepted habitat capability models (See Appendix **O**)

(3) Where pronghorn antelope passage is currently or potentially restricted, modify emsting fences and design new fences to permit free movement,

i Manage habitat for Sensitive wildlife species to insure that these species do not become Threatened or Endangered due to Forest Servlce actions

(1) Management activities mthin habitat occupied by Sensitive species, or where potential habitat exists, will not be permitted unless supported by a biological evaluation

F. MANAGEMENT PRESCRIPTIONS

INTRODUCTION

The Management Prescnptions apply a theme for management of specific land areas Within the general framework of the Forest Standards and Guidelines, they identify the specific activities that are to be emphasized or permitted on each type of land Management Prescnptions consist of five parts

A. Purpose This describes the management objective of the prescnption

B. Management Practices There are two types of management practices emphasized and permitted

Emphasized Practices These are to be implemented as an integral part of the prescription The Management Practices are defined in Appendix E "Emphasized" means that the Forest Service will use some or all of these practices whenever it implements the prescription

Permitted Practices These are permitted in the implementation of the prescnption, but are not necessarily emphasized "Permitted" means the Forest Service will occasionally use the practices, but they are incidental activities Management Practices not listed either as emphasized or permitted are incompatible under that gwen prescription

C. Application Areas This descnbes the type of land to which the prescription is applied

D. Prescription Standards and Guidelines These give further guidance on specifically how to implement the prescription

This plan is based on 17 Management Prescriptions They range from emphasizing full timber management, to emphasizing wilderness character, to minimal management Any given acre of National Forest has one, and only one, prescription The "Forest Objectives" and "Management Area direction" sections D and G of this chapter show the Forest acreage assigned to each prescnption in each Management Area

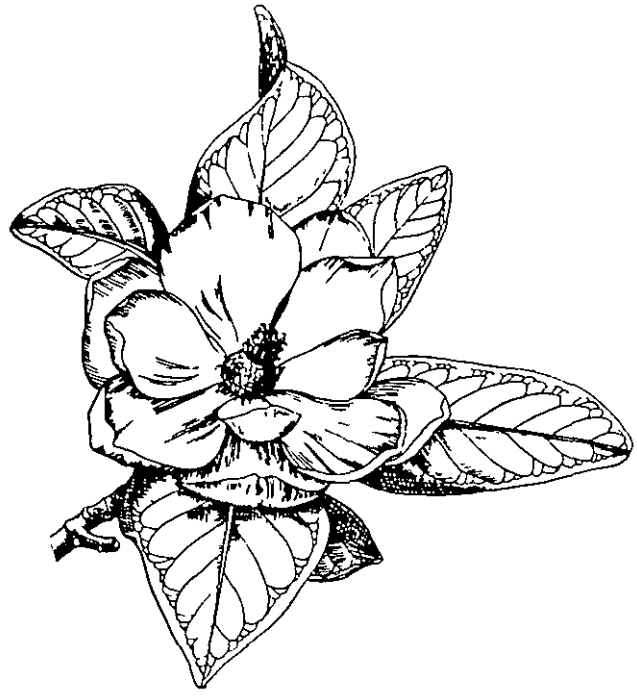
WILDLIFE HABITAT CAPABILITY

The Forest Service has legal authority to manage wildlife habitat, but not the wildlife populations directly Wildlife habitats are descnbed in the prescnption Standards and Guidelines according to their potential or capability to support animal populations. The Standards and Guidelines list the relative Capabilities of habitats to be provided for various Management Indicator Species that are emphasized under the prescription The conditions necessary to achieve relative habitat capabilities are defined in Wildlife Habitat Capability Models (Shimamoto and Airola 1981) Examples of habitat capability models for Management Indicator Species are found in Appendix O

PRESCRIPTION APPLICATION PRIORITY

Only one prescription can apply to a gwen acre of land Where two or more prescriptions could apply to an area of land, a prescription priority is needed (for example, a research natural area mthin mlderness, or a riparian area within a timber area) The pnority is shown above

Prescription Letter	Application Priority	Prescription Name
W	1	Wilderness
S	2	Special Areas
Z	3	Minimal Management
L	4	Late Successional
F	5	Riparian/Fish
A	6	Non-Timber Wildlife
B	7	Range/Wildlife
N	8	Semi-Primitive Non-Motorized Recreation
M	9	Semi-Pnmitive Motorized Recreation
R	10	Range
D	11	Developed Recreation
G	12	Old Growth/Goshawk
K		Rocky/Sparse Timber
E	14	Early Successional
C	15	Firewood
V	16	View/Timber
T	17	Timber



A NON-TIMBER WILDLIFE PRESCRIPTION

A. PURPOSE

The purpose ofthis prescnption is to maintain or improve habitat for species that are at least partially dependent on non-forest or non-commercial forests The prescnption will provlde high habitat capabilityfor deer, blackbear, pronghorn antelope, hairy woodpecker, and ground squirrel The prescnption is based on active habitat manipulation and modification of other resource actinties to enhance the habitat quality for wildlife and fish Snag, nparian, and hardwood habitat will be managed to produce medium to high habitat capability. Where conflicts occur over forage, wildlife will have pnonty over livestock No timber harvest will be scheduled under this prescnption.

B. MANAGEMENT PRACTICES

Emphasized:

Fuels Management
Fire Management
Range Administration and Management
Visual Resource Management
Wildlife Habitat Management - Threatened and Endangered Species
Wildlife Management - Harvest Species
Wildlife Habitat Management - Other Management Indicator Species and Special Habitats
Fish Habitat Management

Permitted:

Facility Construction/Reconstruction
Road Maintenance
Road Closure
Road Obliteration
Restricted Off-Highway Vehicle Use
Minerals Management
Range Structural Improvement and Maintenance
Range Nonstructural Improvement
Interpretive Facilities and Servlces
Watershed Restoration and Improvement

C. APPLICATION AREAS

This prescnption applies to lands that are not sutable for commercial timber production, but have high potential for wildlife habitat improvement through vegetation manipulation. Mappable application areas are marked "A" on the Management Area maps.

D. STANDARDSAND GUIDELINES

Facilities

1 Relocate roads where necessary to protect significant wildlife habitat

2. Seasonally close roads where necessary to protect wildlife during critical periods

Fire and Fuels

1 Protect snags dunng fire suppression wherever safety considerations allow

2. Manage fuels to improve habitat and forage production for wildlife.

3 Use prescnbed fire to increase wildlife habitat diversity while retaining important habitats

4. When underburning in the eastside pine forest, use a burning prescnption that provides for desired quality and quantity of bitterbrush

Range

1. Modify existing and planned range improvements to meet habitat needs of wildlife.

2. Through allotment management plans, provide habitat for emphasized mldlife species listed in the Management Area direction

Recreation

1 Provide opportunities for mewing wildlife, hunting, gathenng forest products, and vehicle camping

2 Manage recreation according to the specified Recreation Opportunity Spectrum classes (See Forest Standards and Guidelines)

Soils

1 Retain ground-covering litter, duff, andlor vegetation on at least 90 percent of nonrocky ripanan areas, except when removal is needed to improve vegetative diversity or wildlife habitat

Timber

1 Harvest timber only to support wildlife or fishery values

Visual Resources

l In areas with an adopted visual quality objective of Retention or Partial Retention, visually blend vegetation manipulation (such as prescnbed burns) into the surrounding landscape

Wildlife

1 Maximize the sustainable carrying capacity of winter deer range by directly improving habitat and coordinating resource use activities Where feasible, provide a continual supply of forage, and maintain at least 40 percent of the area as cover

2 Uniformly distribute escape cover in 10 to 40 acre units throughout the area, giving priority to areas adjacent to meadows and openings

3 Where water is desired, but not available, develop it if feasible

4 Where habitat is capable, maintain high habitat capability for species dependent on snags and hardwoods, such as hairy and pileated woodpeckers and gray squirrels (see Appendix O under snags)

B RANGE/WILDLIFE PRESCRIPTION

A. PURPOSE

The purpose of this prescnption is to prowde forage for livestock and wildlife, and to improve soil and vegetative conditions. Plant and soil conditions are to be improved through direct vegetation and soil restoration, improved livestock management, and regulation of other resourceuses Investment m improvements will be moderate, benefiting livestock, watershed, and wildlife. Forage utilization will be managed to provide for both livestock and wildlife needs No timber harvest will be scheduled under this prescription

B. MANAGEMENT PRACTICES

Emphasized:

Fuels Management
Fire Management
Range Administration and Management
Range Structural Improvement and Maintenance
Range Nonstructural Improvement
Visual Resource Management
Watershed Restoration and Improvement
Wildlife Habitat Management - Threatened and Endangered Species
Wildlife Habitat Management - Harvest Species
Wildlife Habitat Management - Other Management Indicator Species and Special Habitats
Fish Habitat Management

Permitted:

Facility Construction/Reconstruction
Road Maintenance
Road Closure
Road Obliteration
Minerals Management
Interpretive Facilities and Servlces
Restricted Off-Highway Vehicle Use
Limited Timber Management

C. APPLICATION AREAS

This prescription applies to lands that are not suitable for commercial timber production, but are suitable for domestic livestock grazing and wildlife habitat Mappable application areas are marked " B on the Management Area maps

D. STANDARDS AND GUIDELINES

Fire and Fuels

1 Dunng fuels treatment, maintain natural barners to livestock movement (for example, windrows, brushfields, thickets) where the barriers meet grazing plan requirements and do not result in conflicts with other management objectives.

2 Protect important forage vegetation from fire dunng penods when severe damage could occur

3 Use prescnbed fire from planned and unplanned ignitions to improve forage for livestock and wildlife

4. Consider limiting or excluding grazing by domestic livestock from burned areas to allow establishment of desirable forage species

Range

1 Through allotment management plans, enhance range productiwty and utilization, and provlde at least medium habitat capability for wildlife species emphasized in the Management Area direction Maintain or enhance satisfactory ecological condition

Recreation

1 Manage recreation according to the specified Recreation Opportunity Spectrum class, which is primanly Roaded Natural

Timber

1 Harvest timber only to protect **or** enhance range and wildlife values

Visual Resource

1. **In** areas with a visual quality objective of Retention or Partial Retention, visually blend vegetation manipulation (such as prescnbed burns) into the surrounding landscape

Wildlife

1 Through allotment management practices, provlde sufficient quantities of suitable forage, cover and water for wildlife needs

C FIREWOOD PRESCRIPTION

A. PURPOSE

The purpose of this prescription is to make firewood available for personal and commercial use. All timber management practices and most other resource actinties are compatible, but sawlog production is not intended **No** timber harvest will be scheduled in this prescnption. This prescnption provides for maintenance of wildlife habitat and species viability, significant cultural resources, and water quality

B. MANAGEMENT PRACTICES

Emphasized:

Facility Constructiofleconstruction
Road Maintenance
Fuels Management
Fire Management
Modified Timber Management

Permitted:

Road Closure
Road Obliteration
Minerals Management
Range Administration and Management
Range Structural Improvement and Maintenance
Range Nonstructural Improvement
Visual Resource Management
Interpretive Facilities and Services
Restricted Off-Highway Vehicle Use
Limited Timber Management
Watershed Restoration and Improvement
Wildlife Habitat Management - Threatened and Endangered Species
Wildlife Habitat Management - Harvest Species
Wildlife Habitat Management - Other Management Indicator Species and Special Habitats
Fish Habitat Management

C. APPLICATION AREAS

This prescnption applies to lands supporting lodgepole pine that are specifically designated for commercial and personal uses of firewood. Mappable application areas are marked "C" on the Management Area maps.

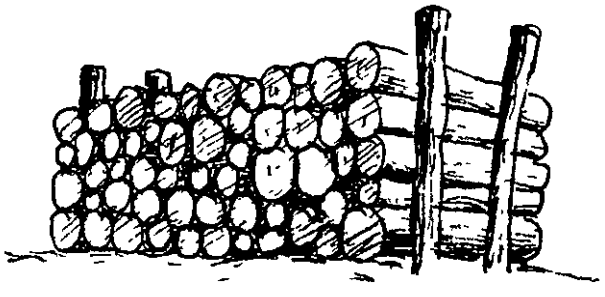
D. STANDARDSAND GUIDELINES

Recreation

1. Manage recreation according to Recreation Opportunity Spectrum class of Roaded Natural (see Forest Standards and Guidelines)

Wildlife

1 Personal use firewood permits will consider the need for leaving large snags for wildlife



D DEVELOPED RECREATION PRESCRIPTION

A. PURPOSE

The purpose of this prescription is to facilitate quality recreation experiences at campgrounds, picnic areas, trailheads, visitor information stations, and water-based facilities, whether they are Forest Service sites or recreation sites operated by the pnvate sector under special use permits It applies to existing sites and designated future sites (see Appendix L) Recreation amenities in and adjacent to future sites are to be conserved

Development levels (see Appendix K) range from 1 to 4 and correspond to the five Recreation Opportunity Spectrum classes Support systems, such as water and sanitation facilities, roads, trails, and signs, may be dominant, but must harmonize with the natural setting

Vegetative management may be necessary to maintain the health of the vegetation and to protect the users, but no timber harvesting will be scheduled under this prescnption Livestock grazing is to be excluded from development level 3 and 4 campgrounds, day-use sites, and developed lakefront sites. All sites are to be recommended for withdrawal from locatable mineral entry.

B. MANAGEMENT PRACTICES

Emphasized:

Facility ConstructionReconstruction
Road Maintenance
Fuels Management
Fire Management
Visual Resource Management
Interpretive Facilities and Servlces
Restricted Off-Highway Vehicle Use

Permitted:

Road Closure
Road Obliteration
Range Administration and Management
Limited Timber Management
Watershed Restoration and Improvement
Fish Habitat Management

C. APPLICATION AREAS

This prescnption applies to all developed recreation sites as described above Areas of application extend up to 1/2 mile beyond site penmeters so as to include areas seen as foreground from the sites Mappable application areas are too small to appear on the Management Area maps, but are represented by the recreation sites shown thereon.

D. STANDARDSAND GUIDELINES

Facilities

1 For roads providing pnmary access to or within developed recreation facilities, set road maintenance levels commensurate with the recreation development level and any unrelated additional traffic needs

Fire and Fuels

1 In areas seen as foreground from the recreation sites, dispose of all fuels from resource management activities within one year of the activlty Consider campfire use as a means of disposal

2 Use only planned ignitions for prescribed fire

Forest Health

1 Do not use chemical forms of animal control within or immediately adjacent to a site, unless the animals pose a significant hazard to human health (for example, bubonic plague in squirrels)

Range

1. Manage livestock, forage utilization, and range improvements to complement recreational experiences.

2 Prevent livestock concentration around developed recreation sites

3 Install natural-appearing fences and cattleguards at entrances to development level **3** and **4** campgrounds, day-use sites, and lakefront developed sites where needed to exclude cattle

Recreation

1 Design and construct facilities and access to protect the recreation site, allow efficient maintenance, and promote user convenience Use partnerships and volunteers to the maximum extent

a Construct at least one new campground of approximately 125 people-at-one-time capacity per decade Refer to Appendix L for a prioritized list of development projects

b Where feasible, locate campsites and toilets at least 200 feet from streams and lakes Where such separation is not feasible, design facilities to create the least possible impact on banks, shorelines, and water quality.

c Make portions of most developed sites accessible to the physically challenged

d Construct nature trails, photo blinds, and interpretive sites where they enhance the recreation experience

e Rehabilitate existing developed sites when conditions reach below-standard levels

f When planning for rehabilitation of sites, plan for multiple **or** small group units

g. Replace facilities when rehabilitation costs exceed 50 percent of replacement costs or when the facilities are no longer compatible with the Recreation Opportunity Spectrum classification

2 Operate and maintain facilities and access to protect natural site conditions and promote user convenience

a Maintam developed recreation sites in a satisfactory condition

b. Inspect sites for fire and tree hazards at the start of the recreation season and thereafter as appropnate Restrict use until unsafe conditions are corrected

c. Perform other resource management activities in or adjacent to recreation sites only during the off-season, unless a critical resource objective cannot be met. Close a site only as a last resort

d Provlde attendants or volunteer hosts at some development level **3** sites and all development level 4 sites to discourage vandalism, encourage appropnate site use, and provide public contact.

e Close campsites that are temporarily wet from high water table or flooded (e g Merrill Campground, due to the rising of Eagle Lake) until the entire site has dry, firm soil Obliterate campsites that are consistently flooded or wet after July 4th

f Manage recreation use to designated capacities

g Consider campground rest-rotation strategies in the preparation of vegetative management plans for recreation sites (see Timber below)

Soil

1 Design campgrounds to encourage users to stay on designated pathways, parking spurs, and campsites

2 Prevent surface drainage from recreational roads, parking areas, and campsites directly into streams or lakes, especially in the Eagle Lake basin

3. Useappropnate control measures to prevent compaction of wet soils, particularly on low-lymgsites dunng rainy weather or snowmelt

Timber

1. Prepare a vegetative management plan for each developed recreation site providing for short- and long-term vlsual quality; vegetation health, vigor, and diversity both on site and mthin foregrounds seen from the site, protection from fire, insects, disease, and other pests, vegetation replacement, hazardous tree control, and appropriate monitoring

2 Harvest timber only to support recreational values

Visual Resources

1 Meet a visual quality objective of Retention in that portion of the sites seen as foreground from roads and trails Employ the guidelines for Retention listed in the View/Timber Prescnption, Visual Resources Section

Wildlife

1 Improve wildlife habitat adjacent to developed sites to increase the number and diversity of wildlife sightings.

E EARLY SUCCESSIONAL

A. PURPOSE

The purpose of this prescription is to maintain or improve forage to provide high habitat capability for wildlife species that are partially dependent on young vegetation (early successional) stages of forest types It is also intended to provlde transitory range for livestock and to improve plant and animal diversity. Livestock use will be compatible with wildlife needs Early successional stage wldlife species include black bear, deer, and pronghorn antelope

Timber harvest will be scheduled under this prescnption Treatment of forest vegetation to provlde desired wildlife habitat charactenstics is the pnmary method to achieve the habitat goals Cutting unit sizes and locations, timing of stand entnes, and the intensity of site preparation, release, and thinning are modified from normal silvicultural practices to perpetuate desirable wildlife forage and cover conditions

B. MANAGEMENT PRACTICES

Emphasized:

Facility ConstructionReconstruction
Road Maintenance
Restricted Off-Highway Vehicle Use
Fuels Management
Fire Management
Range Administration and Management
Range Structural Improvement and Maintenance
Range Nonstructural Improvement
Modified Timber Management
Wildlife Habitat Management - Harvest Species

Permitted:

Road Closure
Road Obliteration
Minerals Management
Visual Resource Management
Interpretive Facilities and Services
Watershed Restoration and Improvement
Limited Timber Management
Wildlife Habitat Management - Threatened and Endangered Species
Wildlife Habitat Management - Other Management Indicator Species and Special Habitats
Fish Habitat Management

C. APPLICATION AREAS

This prescnption applies to lands that are suitable for timber production Mappable application areas are not marked on the Management Area maps because many are too small to show, and their exact locations can only be determined after site-specific project planning for timber sales However, the total acres receivmg this prescriptionin each Management Area are shown in the Management Area direction

D. STANDARDSAND GUIDELINES

Facilities

1. Emphasize screening of important forage areas, resting and escape cover, water sources, and travel routes for deer when locating and designing roads

2 Close roads to motorized vehicles as appropriate to meet the needs of deer, black bear, and other emphasized species listed in the Management Area direction

Fire and Fuels

1. Use prescnbed fire as a part of silvlcultural activity to maintain or enhance forage

Range

1 Construct or modify range improvements to accommodate utilization of early seral forage by both livestock and wldlife

Recreation

1 Manage recreation according to the Recreation Opportunity Spectrum class of Roaded Natural (see Forest Standards and Guidelines)

Timber

1 Design release practices for young conifer plantations to perpetuate grass, forb, and shrub cover as long as possible

2 Design the use of herbicides to provide usable forage for livestock and wildlife

3 Design grazing schedules for livestock to allow establishment of timber seedlings

Visual Resources

1 Meet visual quality objectives of Modification and Maximum Modification where specified on the Adopted Visual Quality Objective Map Employ the Visual Resources guidelines of the Timber Prescnption

Wildlife

1 Uniformly distribute 10 to **40** acre escape cover units, giving priority to ecotone areas adjacent to meadows and openings Implement at the rate of 600 acres/year

F RIPARIAN/FISH PRESCRIPTION

A. PURPOSE

The purpose of this prescnption is to maintain and improve riparian-dependent resources, including (1) water quality, (2) fish habitat, especially for anadromous fish, (3) wildlife habitat, (4) water-associated aesthetics, (5) nparian hardwoods and other vegetation Limited timber harvest is scheduled under this prescnption only when riparian values can be maintained. No more than **2** 5 percent of the standing inventory may be harvested in any one decade.

B. MANAGEMENT PRACTICES

Emphasized:

Road Obliteration
Fuels Management
Limited Timber Management
Visual Resource Management
Watershed Restoration and Improvement
Wildlife Habitat Management - Threatened and Endangered Species
Wildlife Habitat Management - Other Management Indicator Species and Special Habitats
Fish Habitat Management
Dispersed Recreation Activities

Permitted:

Facility Construction/Reconstruction
Range Administration and Management
Road Maintenance
Road Closure
Restricted Off Highway Vehicle Use
Fire Management
Minerals Management
Range Structural Improvement and Maintenance
Range Nonstructural Improvement
Interpretive Facilities and Services
Wildlife Habitat Management - Harvest Species
Trail Construction
Developed Recreation at Designated Sites

C. APPLICATION AREAS

This prescnption applies to all lands in and adjacent to lakes, streams, ephemeral and perennial wetlands, bogs, seeps, and pothole lakes

It applies to perennial and intermittent streams and, as needed, to ephemeral channels It always applies to nparian vegetation bordenng lakes and other bodies of water Mappable application areas are all bodies of water on the Forest, marked "F" on the Management Area maps, unless contained in an area allocated to a higher priority prescnption, such as wilderness, semi-primitive area, etc Ripanan areas too small to map will also receive this prescription

D. STANDARDS AND GUIDELINES

Facilities

1 Limit stream crossings to stable rock or gravel areas or where streambank damage will be minimal Where this is not feasible, develop crossings that minimize disturbance to riparian-dependent resources Crossings will be as near right angles as possible.

2 Disperse flows from ditches or culverts to keep upland area runoff from reaching riparian zones.

3. Route roadside drainage through armored ditches or culverts across erodible areas

4. Minimize short-term degradation of water quality from channel-altenng projects by installing flow deflectors or riprap; building stream crossings, dams, and weirs; excavating pools, and placement of boulders

5 Before installing fish passage improvements, refer to the Forest Service publications "Fish Passage Through Culverts" (November, 1990) and "Planning Forest Roads to Protect Salmon Habitat" (PNW-109, June 1980)

6 Outslope roads to minimize collection water.

7. When directly drafting water from streams for dust abatement, maintain a mmimum flow of two cubic feet per second (cfs) downstream from drafting points

Fire and Fuels

1. Minimize disturbance from fire suppression Allow low intensity fires to burn where they will cause less disturbance than suppression activlties

2 Avoid the use of bulldozers in stream channels dunng fire suppression.

3 Avoid application of fire retardant chemicals to streams, other bodies of water, and nparian zones, unless necessary to protect human life

4 Avoid locating fire camps and other facilities in npanan areas Where this is not feasible, locate sanitary facilities at least 100 feet (slope distance) from streams, lakes, or meadows.

5. Rehabilitate intensely burned areas promptly.

6 Set fuel loading standards to meet npanan zone needs

7. Within normal high water zones, remove all timber harvest slash not needed for soil protection or fish and wildlife habitat Yard unmerchantable material

8 Dispose of chipped, crushed, or lopped matenal so it will not eventually enter stream courses

9 Do not locate burn piles within the normal high water area of drainage or stream courses

10 Minimize soil disturbance during fuel treatment'

a. Hand pile and burn, or limit broadcast burning to low intensity fire (less than 2 foot flame length)

b Retain natural amounts of duff and fine fuels to serve as sediment filters

11. Limit prescnbed burning in and adjacent to npanan areas to protect ripanan and aquatic values Use prescribed fire to improve wildlife habitat, pnmanly by stimulating aspen and willow regeneration

Fish

1 Where site Capability permits, provide "high" habitat capability for chinook salmon, steelhead, and rainbow trout in areas where these species can occur.

2. Management Areas where fish are emphasis species and site capability permits, provide sufficient streamside cover to shade at least 70 percent of all stream surfaces from 10 a m. to 4 p.m dunng the summer months (June 1 to September 30)

3. Where natural conditions permit, achieve or mamtain stable channel conditions over at least 80 percent of the total linear distance of stream channels

4 Where site capability permits, improve stream channel conditions to achieve desired frequency of pool to riffle ratios (between 40 60 and 60.40) to insure reanng, spawning, and food producing areas are well distributed

5 Provlde woody debris for instream structural diversity by maintaining natural recruitment of trees from adjacent riparian areas

Range

1 Manage livestock as needed to protect or enhance riparian areas.

a. Allow no salting or livestock supplement stations within 1/4 mile of water developments, streams, or other ripanan areas

b Modify grazing schedules, institute or modify grazing systems, reduce numbers, or eliminate livestock, as necessary to prevent or correct damage to ripanan vegetation or streamhanks

c In updating or initiating new allotment plans, give priority to allotments with degraded riparian areas (e g. tributanes to Eagle Lake, especially Pine Creek, and anadromous fish streams such as Deer Creek, Mill Creek, and Antelope Creek) Within those allotments, give pnority to ripanan rehabilitation

d Strongly consider not filling in behind termgrazing permits approved for personal convenience non-use to reduce administration costs and to encourage recovery of vegetative conditions

e. Fence critical riparian areas where none of the measures above result in improved ripanan area condition.

2 In streams and lake nparian areas, determine grazing use through allotment management plans

3. Coordinate with grazing permittees and other interested parties in developingmanagement strategies or actions that may affect riparian areas

Recreation

1 Place all new structures (except docks, boat ramps, and bridges) at least 100 feet from lakeshores and streams, and beyond the 100 year floodplains

2. Where recreation is encouraged, locate most facilities outside of nparian areas Where heavy fishing use has resulted in multiple paths, build a single trail that will better protect water quality

3 Confine off-highway vehicles, except oversnow vehicles, to designated roads, trails, and stream crossings in nparian areas

4 Coordinate with the California Department of Fish and Game during planning of recreational facilities that could affect fish and wildlife populations or local demand for planted trout

Soils

1. Occasionally, small openings in the nparian canopy created by wind thrown trees, tree mortality due to insects and disease, or harvesting may require tree planting to assure future canopy cover When prepanng these openings for planting, limit ground disturbing actinties to the minimum needed for tree establishment Use handscalping to clear small areas (usually less than *4* square feet per tree) of vegetation and duff for planting indimdual trees Hand pile debris (slash) as needed instead of tractor piling or brush raking.

2. Keepground-covering litter, duff, and/or vegetation on at least **90** percent of non-rocky npanan areas.

3. Manage for reduced soil exposure, erosion, and sedimentation, and minimize cutbanks and hank sloughing

Timber

1 Limit tree harvest to individual tree selection, except as noted in Item 2 below

2 Other tree harvest prescriptions may he applied to benefit npanan dependent resources

3 Keep skid trails and roads away from lakeshores and out of stream corndors, except for stream crossings

4 Minimize timber harvest effects in stream corridors by designating skid trail crossings and using directional felling, stage felling, and endlining.

5 Locate landings and log decks well away from streamside management zones (BMP 18, Appendix Q) and from npanan areas (BMP 112)

Vegetation and Diversity

1 Manage riparian areas to enhance the riparian vegetative community by maintaining or improvingexisting species and age diversity, and distnbution

2 Maintain or improve stream channel stability by retaining or establishing vegetation in stream corndors Where appropnate, retain or establish late seral ripanan vegetation

Visual Resources

1. Meet a vlsual quality objective of Retention or Partial Retention wıthın the foreground as vıewed from Sensitivlty Level 1 streams and lakeshores, as designated on the Adopted Visual Quality Objective Map

2 Employ the guidelines for these vlsual quality objectives as listed in the Vıew/Tımber Prescription, Visual Resources Section

Water and Riparian Areas

1 Protect perennial, intermittent, and ephemeral streams within project areas by using Best Management Practices (see Appendix Q) to limit adverse effects of loggmg road construction, maintenance, and other actıvıties

2 Restnct operations in floodplains and wetlands in compliance with Executive Orders

3 In degraded nparian areas identified during project planning or watershed monitoring and inventory, adjust grazing systems, reduce livestock numbers, lımıt public use, and/or plant ripanan vegetation as necessary to rehabilitate each area

4 Manage designated ephemeral stream channels by mnimizing ground disturbance and soil compaction within SMZ's from roads, timber harvesting, fuel removal, and site preparation activities

Wildlife

1 Where site productivity permits, provide "high" habitat capability for ripanan, hardwood, and snag-dependent species

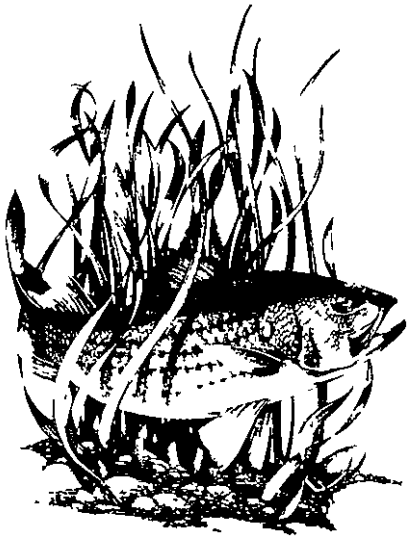
2 Promote diversity of vegetation and favor species and age classes that best meet wildlife and fishery needs Favor ripanan areas when designating old growth stands, connecting corndors, or wildlife nesting trees

3 Enhance vegetation and ground cover around seeps, bogs, and spnngs

4 Maintain or improve n p a n a n hardwood communities

5 Where beavers create adverse effects to stream channels and riparian areas, manage populations as needed to meet and maintain desired ecologıcal conditions

6 In all management activities, protect or enhance suitable habitat for the Endangered Shasta crayfish in the Pit River and Hat Creek drainages



G OLD GROWTH/GOSHAWK PRESCRIPTION

A. PURPOSE

The purpose of this prescnption is to pronde for vegetative diversity through maintenance of old growth ecosystems, and to maintain or improve high habitat capability for goshawks and bald eagles The maintenance of visual quality is also compatible with this prescription Timber management will focus on long rotations with a range of size classes and proper spatial distnbution of stands to provide desired habitat conditions Treatment through timber harvesting may he needed to achieve this

Limited timber management is expected to occur Salvage harvesting may be appropnate in certain circumstances to remove heavy concentrations of insect or drought killed timber, and to protect stands against catastrophic wildfire losses In goshawk territories or bald eagle areas, no timber harvesting will occur unless a biological evaluation and NEPA analysis determine that timber management will maintain or enhance the quality of their habitat Management activities will not be visually evident, and natural-appeanng landscapes will be maintained

B. MANAGEMENT PRACTICES

Emphasized:

Road Maintenance
Fuels Management
Fire Management
Visual Resource Management
Limited Timber Management
Restricted Off-Highway Vehicle Use
Wildlife Habitat Management - Threatened and Endangered Species
Wildlife Habitat Management - Other
Management of Indicator Species and Special Habitats

Permitted:

Facility Construction Reconstruction
Road Closure
Road Obliteration
Mineral Management
Range Administration and Management
Range Structural Improvement and Maintenance
Interpretive Facilities and Servlces
Watershed Restoration and Improvement
Wildlife Habitat Management - Harvest Species
Fish Habitat Management

C. APPLICATION AREAS

This prescription applies to lands identified as needed for old growth habitat, bald eagle areas, and goshawk terntones Application areas will be marked "G" on the Management Area maps pending field verification of tentatively identified habitat and final selection Currently active nest sites will take preference in the delineation of a habitat network for goshawks. Some bald eagle areas are large enough to be displayed The number of areas to be mapped are listed under section D Wildlife Habitat Allocations for each Management Area

D. STANDARDS AND GUIDELINES

Facilities

1 Locate and design roads to avoid important wildlife hiding and escape cover, watering sources, and travel routes

2 In cooperation wlth the California Department of Fish and Game, close roads to motorized vehicles as appropriate Coordinate road closure and motorized vehicle access needs with the Department to meet the needs of deer, black hear, and other wildlife emphasis species listed in the Management Area direction

Fire and Fuels

1 Use prescnbed tire for silvlcultural purposes

Recreation

1. Manage recreation according to the Recreation Opportunity Spectrum classes of Semi-Pnmitive Non-Motorized, Semi-Primitive Motonzed, or Roaded Natural (see Forest Standards and Guidelines).

Timber

1 Schedule silvlcultural treatments to continually maintain large trees over 24 dbh Maintain the minimum size of habitat units based on the needs of the emphasis species listed in the Management Area direction.

2 Harvest timber to protect or enhance vegetative structure and diversity

Wildlife

1 Provlde at least the following densities of down logs by vegetation type on lands compnsed of 50 to 200 acres.

Vegetation Type	Density (logs/acre)
Eastside pine	4
Mixed conifer, lodgepole pine	8
True fir, mountain hemlock	10

2 In unmanaged stands, accept naturally occurring densities of down logs.

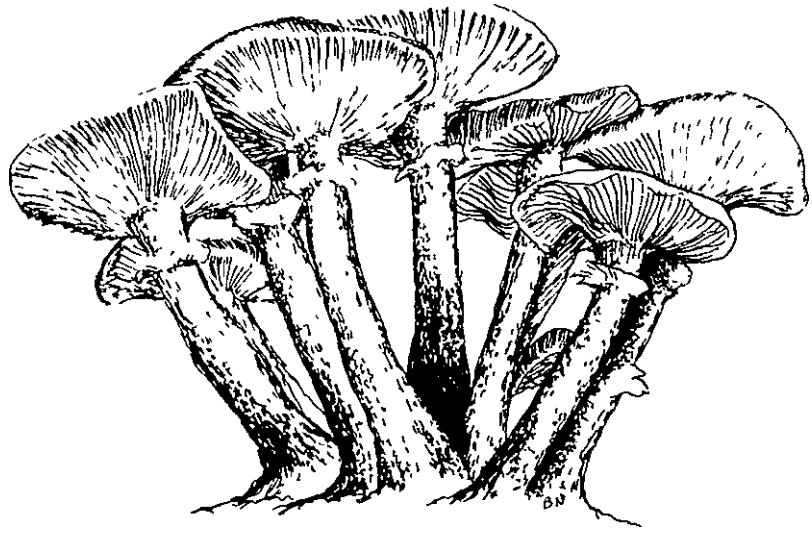
3 For purposes of number 1 above, consider a log to be at least 15 feet long with a large-end diameter of at least 20 inches. Count short log segments greater than 20 inches in diameter in proportion to their length

4 Maintain habitat Capability for late successional species by maintaining the following snag guidelines on land units compnsed of 50 to 200 acres each:

Snag DBH High Habitat Capability (required)	Average Density
24	> 5/acre
>15-24	>3/acre
Total	>3 5/acre

5 Accept naturally occurring snag densities until high habitat capability requirements are met

6 A seasonal restriction to exclude timber harvesting mthin occupied bald eagle and goshawk nest stands dunng nesting seasons will be imposed



K ROCKY/SPARSE TIMBER PRESCRIPTION

A. PURPOSE

The purpose of this prescnption is to maintain timber stands on rocky, unplantable (by artificial means) land and on lands with sparse to poorly stocked eastside pine Investments will be made in reforestation in the form of site preparation and release for naturally regenerated stands, stand improvements, and resource protection. Timber harvest will be scheduled under this prescnption. This prescnption is compatible with the maintenance of forest ecosystems at the medium habitat capability level for species that are at least partially dependent on larger diameter trees in sparsely stocked stands with high snag densities The maintenance of visual quality is also a compatible purpose with this prescription

B. MANAGEMENT PRACTICES

Emphasized:

Visual Resource Management
Limited Timber Management
Wildlife Habitat Management Threatened and Endangered Species
Wildlife Habitat Management Harvest Species
Wildlife Habitat Management Other Management Indicator Species and Special Habitats
Fish Habitat Management

Permitted:

Facility Construction/Reconstruction
Road Maintenance
Road Closure
Road Obliteration
Fuels Management
Fire Management
Minerals Management
Modified Timber Management
Range Nonstructural Improvement
Range Administration and Management
Range Structural Improvements and Maintenance
Interpretive Facilities and Services
Restricted Off Highway Vehicle Use
Watershed Restoration and Improvement

C. APPLICATION AREAS

This prescription applies to lands that are suitable for timber production Because of physical site charactenstics, artificial regeneration within five years is not certain. Mappable application areas are marked **"K"** on the Management Area maps Areas too small to map are found mthin other prescriptions.

D. STANDARDSAND GUIDELINES

Fire and Fuels

1 Use prescribed fire for silvicultural purposes

Recreation

1 Manage recreation according to the Recreation Opportunity Spectrum classes of Semi-Pnmitive Nan-Motorized and Roaded Natural (see Forest Standards and Guidelines)

Timber

1 Schedule silvicultural treatments to continually maintain large trees over *2 4* dbh. Management will emphasize uneven-aged harvest methods, pnmanly indindual tree selection. Base the minimum sizes of habitat units on the needs of emphasis species listed in the Management Area direction.

2. Whenever feasible, design silvlculturaltreatments to provlde corndors and islands of cover linking larger units of old-growth timber

Wildlife

1 Provide at least the following densities of downed logs by vegetation type on land comprised of 50 to 200 acres

Vegetation Type	Density (logs/acre)
Eastside pine	4
Mixed conifer, lodgepole pine	8
True fir, mountain hemlock	10

2. In unmanaged stands, accept naturally occurring densities of down logs

3 Where habitat is available, maintain high habitat capability for snag dependent species such as hairy and pileated woodpeckers, and gray squirrels. (See Appendix O under snags.)

4 Maintain habitat capability for late successional species by maintaining the following snag guidelines on land units comprised of 50 to 200 acres each

Snag DBH High Habitat Capability (required)	Average Density
24"	> 5/acre
>15" - 2 4	>3/acre
Total	>3 5/acre

5 Accept naturally occurring snag densities until high habitat capability requirements are met

L LATE SUCCESSIONAL PRESCRIPTION

A. PURPOSE

The purpose of this prescription is to provide for vegetative diversity through maintenance of old growth ecosystems, and to maintain or improve habitat to provide high habitat capability for species that are at least partially dependent on old (late successional) timber stands with large diameter trees and obvious stand decadence These species include spotted owl, pileated and hairy woodpeckers, marten, and fisher Timber management will focus on long rotations with a range of size classes and proper spatial distribution of stands to provide desired habitat conditions

No timber harvesting will be scheduled within spotted owl habitat areas (SOHA's), the Habitat Conservation Area (HCA) and furbearer habitat management areas Salvage activities or thinningmay be appropnate in certain circumstances to remove heavy concentrations of insect or drought killed timber, to protect stands against catastrophic wildfire losses, and to reduce stockinglevels for habitat enhancement SOHA's and furbearer habitat comprise most of the areas receiving this prescnption

B. MANAGEMENT PRACTICES

Emphasized:

Fuels Management
Fire Management
Road Maintenance
Road Closure
Road Obliteration
Visual Resource Management
Wildlife Habitat Management - Threatened and Endangered Species
Wildlife Habitat Management - Other Management Indicator Species and Special Habitats

Permitted:

Interpretive Facilities and Services
Facility ConstructionReconstruction
Restricted Off Highway Vehicle Use
Minerals Management
Range Administration and Management
Range Structural Improvement and Maintenance
Range Nonstructural Improvement
Limited Timber Management
Watershed Restoration and Improvement
Wildlife Habitat Management - Harvest Species
Fish Habitat Management

C. APPLICATION AREAS

This prescription applies to lands identified as needed for wildlife species that prefer old growth wildlife habitat Most of these areas are suitable for timber production Application areas are marked "L" on the Management Area maps Habitat for marten and fisher areas was not placed on Management Area maps pending field verification of tentatively selected management areas

D. STANDARDSAND GUIDELINES

Facilities

1 Locate and design roads to avoid important wildlife hiding and escape cover, watermg sources, travel routes, nesting sites and foragmg areas

2 In cooperation with the California Department of Fish and Game, close roads to motorized vehicles as appropnate Coordinate road closure and motorized vehicle access needs with the Department to meet the needs of deer, black bear, and other wildlife emphasis species listed in the Management Area direction

Fire and Fuels

1 Use prescnbed fire for silvicultural purposes

Recreation

1. Manage recreation according to the Recreation Opportunity Spectrum classes of Semi-Primitive Non-Motorized, Semi-Primitive Motonzed, or Roaded Natural (see Forest Standards and Guidelines)

Timber

1. **A** no scheduled timber harvest prescription will be applied to all SOHA's, HCA's and marten/fisher habitat management areas (HMA's).

2 No vegetative treatments will be implemented within the SOHA network unless NEPA analysis and a biological evaluation indicate harvesting would maintain the quality of owl habitat

3. No vegetative treatments will be planned mthin marten and fisher habitat areas, or their connecting corndors, unless NEPA analysis and a biologxal evaluation determine timber management is needed to maintam the quality of habitat for these species

4 Design vegetative treatments to continually maintain large trees over **24'** dbh

Wildlife

1 Provlde at least the followng densities of down logs by vegetation type on lands compnsed of 50 to ***200*** acres.

Vegetation Type	Density (logs/acre)
Eastside pine	**4**
Mixed conifer, lodgepole pine	8
True fir, mountain hemlock	10

2 In unmanaged stands, accept naturally occurnng densities of down logs

3 For purposes **of** number 1 above, consider a log to be at least 15 feet long with a large-end diameter of at least 20 inches. Count short log segments greater than 20 inches in diameter in proportion to their length

4 Maintain habitat Capability for late successional species by maintaining the followng snag guidelines on land units comprised of 50 to **200** acres each

Snag DBH High Habitat Capability (required)	Average Density
2 4	> 5/acre
>15" - 24"	>3/acre
Total	>3 5/acre

5. Accept naturally occurnng snag densities until high habitat capability requirements are met.

6 Through NEPA analysis and biological evaluations, address the needs **of** wildlife, timber, and other resources mthin spotted owl, marten and fisher habitat areas, before starting management activlties that might change their special vegetative characteristics.

M SEMI-PRIMITIVE MOTORIZED RECREATION PRESCRIPTION

A. PURPOSE

This prescnption is derived from the Recreation Opportunity Spectrum (ROS) class of Semi-Primitive Motorized (SPM) (see Appendix J for **the** definition of this class). It is intended to facilitate dispersed, motorized recreation, such as snowmobiling, four-wheel dnvlng, and motorcycling, in areas essentially undisturbed except for the presence of four-wheel dnve roads and trails Non-motorized activlties such as hilung, fishing, hunting, picnicking, and cross-country skiing are also possible Motonzed travel may be seasonally prohibited or restricted to designated routes to protect other resources.

Although timber harvest will not be scheduled in these areas, timber may be selectively removed to protect recreational values Management activities are not to be visually evident, and natural-appearing landscapes are to be maintained. The prescnption will provlde high habitat capability for species that are at least partially dependent on snags, dead and down wood, and late successional stands

B. MANAGEMENT PRACTICES

Emphasized:

Road Maintenance
Road Closure
Fuels Management
Fire Management
Range Administration and Management
Visual Resource Management
Interpretive Facilities and Services
Restricted Off-Highway Vehicle Use
Wildlife Habitat Management - Threatened and Endangered Species
Wildlife Habitat Management - Harvest Species
Wildlife Habitat Management - Other Management Indicator Species and Special Habitats
Fish Habitat Management

Permitted:

Facility Construction/Reconstruction
Road Obliteration
Minerals Management
Range Structural Improvement and Maintenance
Range Nonstructural Improvement
Limited Timber Management
Watershed Restoration and Improvement

C. APPLICATION AREAS

This prescription applies pnmarily to the High Lakes and Ishi **B** areas as shown on the Management Area maps and the Forest Plan Prescription Maps Mappable application areas are marked "M" on the Management Area maps

D. STANDARDS AND GUIDELINES

Site-specific standards and guidelines are given in the Management Area direction The following standards and guidelines apply throughout the SPM areas

Facilities

1 Design motonzed routes to take advantage of recreation and scenic opportunities, in**sure** successful rehabilitation of soil and vegetation, and provlde motonzed recreation challenges.

2 Prohibit road upgrading that would detract from motonzed recreation opportunities.

3 Close specific areas or travel routes seasonally *or* year-round as needed to facilitate management of adjacent areas, prevent damage to other resources, prevent **use** conflicts, and avoid unnecessary costs

4 Construct facilities with native matenals whenever possible

Fire and Fuels

1 Avoid or minimize ground disturbance during fire suppression activlty

2 Use prescribed fire according to approved plans to perpetuate natural forest ecosystems, return ecosystems to natural conditions, reduceunacceptable damage from wildtire, or protect adjacent resources

3 Limit rehabilitation of areas burned by wildfire to restoration of natural conditions and protection of resource values.

Recreation

1 Within the planning penod, determine access, sanitation, trail, and trailhead needs of each area as needed to facilitate motorized recreation

2 Provide foot and horse trails in areas not needed or appropnate for motonzed routes.

3 Monitor andlimitvlsitor use through aquota permit system when other resources are damaged or recreation expenences are reduced

4 Develop water sources where appropnate

5 Limit recreation facilities to those of Development Level 2 Primitive toilets, campfire rings, recreational stock control devices, trails, and trailheads Keep all signing to a minimum

Fish

1 Coordinate with the California Department of Fish and Game for enhancing fishenes habitat and stocking of fish in lakes and streams

Soils

1 Rehahilitate areas of significant soil degradation caused by OHV's. Close trails and areas to motonzed use ifnecessary to protect soils

Timber

1 Harvest only dead or high nsk trees Harvest timber only if needed to maintain or enhance semi-primitive values (forexample, to allow construction of motorized routes or to control insects or disease)

2 Use the "limited timber management" practice (see Appendix E) only in response to catastrophic occurrences such as wildfire or insect epidemic

Visual Resources

1 Meet the visual quality objective of Retention to protect or enhance the semi-pnmitive landscape Apply the guidelines for Retention listed in the View/Timber Prescription, Visual Resources section. Allow pnmitive roads to meet the vlsual quality objective of Partial Retention where necessary

2 Rehabilitate areas where the visual quality objective of Partial Retention is not currently met

Wildlife

1 Provide "high" habitat capability for harvest species and other species that have a relatively low tolerance to human activlty

2. Let natural vegetative succession occur, unless specific vegetation treatments are necessary to meet fish and wildlife objectives

3 When treating vegetation in non-forest areas, favor the use of prescribed fire

4 Where water is desired, but not available, develop it if feasible

5. Provlde at least the following densities of down logs by vegetation type on lands comprised of 50 to 200 acres

Vegetation Type	Density (logs/acre)
Eastside pine	4
Mixed conifer, lodgepole pine	8
True fir, mountain hemlock	10

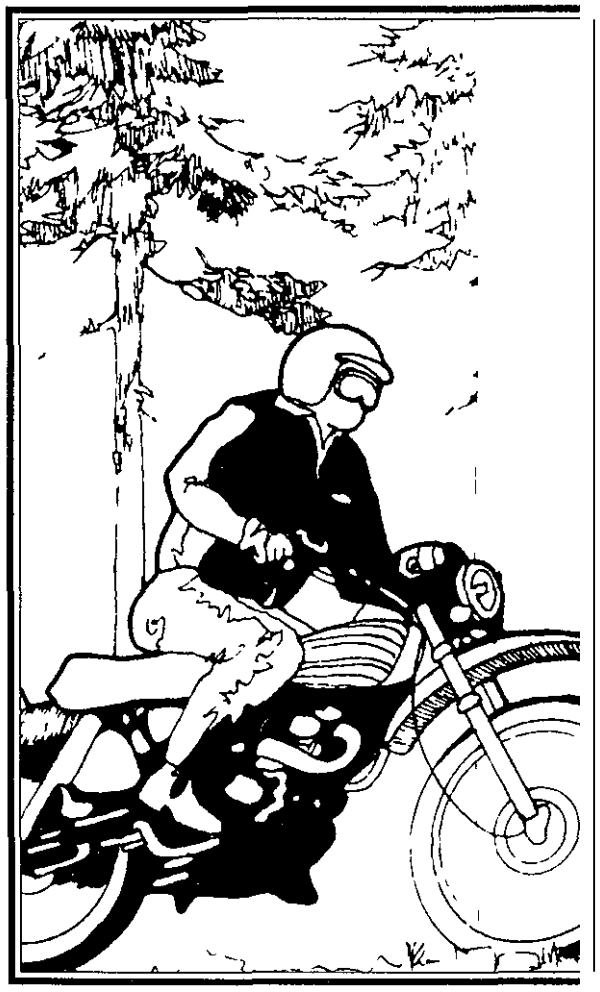
6 In unmanaged stands, accept naturally occurring densities of down logs

7 For purposes of number 1 above, consider a log to be at least 15 feet long with a large-end diameter of at least 20 inches Count short log segments greater than 20 inches in diameter in proportion to their length

8 Maintain habitat capability for late successional species by maintaining the following snag guidelines on land units compnsed of 50 to 200 acres each

Snag DBH High Habitat Capability (required)	Average Density
24"	> 5/acre
>15" - 2 4	>3/acre
Total	>3 5/acre

9 Accept naturally occurnng snag densities until high habitat capability requirements are met



N SEMI-PRIMITIVE NON-MOTORIZED RECREATION PRESCRIPTION

A. PURPOSE

This prescnption is denved from the Recreation Opportunity Spectrum (ROS) classofSemi-Primitive Non-Motonzed (SPNM) See Appendix J for the definition of this class It is intended to facilitate dispersed recreation such as hilung, mountain bicycling, horseback riding, huntmg, and cross-country skiing in unroaded, essentially undisturbed areas outside of existing and proposed mlderness areas Motonzed recreation is prohibited

Although timber harvest will not be scheduled in these areas, timber may be selectively removed to protect semi-primitive recreational values Management actinties are not to be visually evident, and natural appearing landscapes are to be maintained The prescnption will provide high habitat capability for species which are intolerant of human disturbance and are at least partially dependent on snags, dead and down wood, and late successional stands. Recreation, vlsual, wildlife, fisheries, and npanan resource values are emphasized

B. MANAGEMENT PRACTICES

Emphasized:

Range Administration and Management
Road Closure
Road Obliteration
Restncted Off-Highway Vehicle Use
Fire Management
Interpretive Facilities and Servlces
Visual Resource Management
Wildlife Habitat Management - Threatened and Endangered Species
Wildlife Habitat Management - Harvest Species
Wildlife Habitat Management - Other Management Indicator Species and Special Habitats
Fish Habitat Management

Permitted:

Facility ConstructionReconstruction
Road Maintenance
Fuels Management
Minerals Management
Range Structural Improvements and Maintenance
Range Nonstructural Improvement
Limited Timber Management
Watershed Restoration and Improvement

C. APPLICATION AREAS

This prescnption applies to the Chips Creek, Cinder Butte, Ishi B, Keddie Ridge, Onion Spnngs, Prospect, Polk Spnngs, and Snow Mountain areas, as marked with "N" on the Management Area maps.

D. STANDARDSAND GUIDELINES

Site specific standards and guidelines are gwen in the Management Area direction. The following Standards and Guidelines apply throughout the SPNM areas

Facilities

1 Permit no upgrading of existing roads Close roads permanently to public motonzed use Allow the continuation of existing access for the maintenance and operation of utility facilities Convert to trails those roads not needed for authorized activities

2 Construct no new permanent roads

3 Approve new temporary roads only for such purposes as salvage logging, access to valid mining claims or utility operations, based on environmental analysis for specific projects

4 Obliterate and revegetate temporary roads after use

5. Locate, design, construct, and maintain trails suitable for foot and horseback travel

6 Allow mountain bicycles on trails where not otherwise restricted.

7 Construct facilities with native materials whenever possible

Fire and Fuels

1 Avoid or minimize ground disturbance during fire suppression activity

2 Use prescribed fire according to approved plans to perpetuate natural forest ecosystems, return ecosystems to natural conditions, reduce unacceptable damage from wildfire or protect adjacent resources

3. Limit rehabilitation of areas burned by wildfire to restoration of natural conditions and protection of resource values.

Fish

1 Coordinate with the California Department of Fish and Game for enhancing fisheries habitat and stocking fish in lakes and streams to help disperse recreation use

Recreation

1 Within the planning period, determine access, sanitation, trail, and trailhead needs of each area as needed to facilitate hiking, horseback riding, mountain bicycling, and cross-country skiing.

2 Design trails to take advantage of recreation attributes such as vistas, streams, lakes, and areas of geologic interest

3 Monitor and limit visitor use when other resources are damaged or recreation experiences are reduced

4 Develop water sources where appropriate to enhance semi-primitive related values

5 Generally limit facilities to those of Development Level 1 primitive toilets, campfire rings, recreational stock control devices, trails, and trailheads. Keep all signing to a minimum. Provide developed sites exceeding Development Level 1 standards if necessary for protection of other resources

6. Prohibit motorized recreation, including four-wheel driving, motorcycling, and snowmobiling.

Timber

1. Plan no scheduled timber harvest

2 Harvest only dead or high risk trees Harvest timber only if needed to maintain or enhance semi-primitive recreational values (for example. to allow trail construction)

3. Use low-impact logging methods. Construct only temporary roads and obliterate them immediately following any project

4. Use the "limited timber management" practice (see Appendix E) only in response to catastrophic occurrences, such as wildfire or insect epidemic

Visual Resources

1. Meet or exceed a visual quality objective of Retention to enhance or protect the semi-primitive landscape. Apply the guidelines for Retention listed in the View/Timber Prescription, Visual Resources section.

2 Rehabilitate areas where the visual quality objective of Retention is not currently met

Wildlife

1 Provide "high" habitat capability for harvest species and other species that have a relatively low tolerance to human activity.

2. Let natural vegetative succession occur unless specific vegetation treatments are necessary to meet fish and wildlife objectives

3 When treating vegetation in non-forest areas, favor the use of prescribed fire

4 Where water is desired, but not available, develop it if feasible

5 Provide at least the following densities of down logs by vegetation type on lands compnsed of 50 to 200 acres

Vegetation Type	Density (logs/acre)
Eastside pine	4
Mixed conifer, lodgepole pine	8
True fir, mountain hemlock	10

6 In unmanaged stands, accept naturally occurnng densities of down logs

7 For purposes of number 1 above, consider a log to be at least 15 feet long with a large-end diameter of at least 20 inches Count short log segments greater than 20 inches in diameter in proportion to their length

8 Maintain habitat capability for late successional species by maintaining the following snag guidelines on land units comprised of 50 to 200 acres each

Snag DBH High Habitat Capability (required)	Average Density
24"	> 5/acre
>15" - 2 4	>3/acre
Total	>3 5/acre

9 Accept naturally occurring snag densities until high habitat capability requirements are met

R RANGE PRESCRIPTION

A. PURPOSE

The purpose of this prescnption is to provlde rangelands that are managed to meet vegetative management objectives, desirable wildlife habitat, clean water, healthy nparian ecosystems, stable soils and forage for domestic livestock The goal is to maintain rangeland condition at or above satisfactory levels, with stable or upward trends Rangeland condition is to be maintained or enhanced through forage improvements, livestock management and coordination with other resource uses Investment in range improvements will be moderate to high No timber harvest will be scheduled under this prescription

B. MANAGEMENT PRACTICES

Emphasized:

Fuels Management
Fire Management
Range Administration and Management
Range Structural Improvement and Maintenance
Range Nonstructural Improvement
Visual Resource Management

Permitted:

Facility ConstructionReconstruction
Road Maintenance
Road Closure
Road Obliteration
Minerals Management
Interpretive Facilities and Services
Restricted Off-Highway Vehicle Use
Limited Timber Management
Watershed Restoration and Improvement
Wildlife Habitat Management - Threatened and Endangered Species
Wildlife Habitat Management - Harvest Species
Wildlife Habitat Management - Other Management Indicator Species and Special Habitats
Fish Habitat Management

C. APPLICATION AREAS

This prescription applies to lands that are not suitable for commercial timber production, but are suitable for domestic livestock grazing Mappable application areas are marked "R" on the Management Area maps

D. STANDARDSAND GUIDELINES

Fire and Fuels

1 Suppress wildfire that threatens livestock, range improvements, or long-term soil productivity or forage production

2 Use prescribed fire to increase the amount of palatable forage

3 Where recommended, exclude grazing by domestic livestock for at least 2 years on perennial grass range following burning to allow for re-establishment of desirable forage species

Range

1 Develop, update, and implement allotment management plans utilizing the interdisciplinary team approach to provide for satisfactory ecological range conditions with stable or upward trends

2 Through allotment management plans, provide suitable habitat for emphasis wildlife species listed in the Management Area direction

3 Refer to Forest Standards and Guidelines for more specific direction regarding range management in these areas

Recreation

1. Manage recreation according to the specified Recreation Opportunity Spectrum class which is primanly Roaded Natural (see Forest Standards and Guidelines)

Timber

1 Harvest timber only to support the range or range-associated resource

Visual Resources

1 Meet the visual quality objectives as shown on the Adopted Visual Quality Objective Map

2 Invisually sensitive areas, design structural improvements to minimize contrast with the surrounding landscape

Water and Riparian

I See the Range, and Water and Riparian Areas Standards and Guidelines for detailed npanan zone management standards

Wildlife

1 Allotment management practices will provide sufficient quantities of suitable forage species for mldhfe needs

S SPECIAL AREAS PRESCRIPTION

A. PURPOSE

The purpose of this prescnption is to preserve areas with unusual historical, geological, botanical, zoological, paleontological, or other special charactenstics for public enjoyment or research Expenmental Forests, Research Natural Areas (RNA's), Special Interest Areas (SIA's), and Wild and Scenic Rivers are included. These areas are managed primarily to produce benefits other than timber, range, forage, minerals, and other commodities Timber harvest will not be scheduled under this prescnption.

B. MANAGEMENT PRACTICES

For Research Natural Areas

Emphasized:

Fire Management
Visual Resource Management

Permitted:

Road Closure
Road Obliteration

For all other types of special areas, the above Emphasized and Permitted Practices apply, as well as the followmg:

Permitted:

Facility Construction/Reconstruction
Interpretive Facilities and Services
Road Maintenance
Minerals Management
Range Administration and Management
Range Structural Improvement and Maintenance
Range Nonstructural Improvement
Restricted Off-Highway Vehicle Use
Limited Timber Management
Modified Timber Management
Watershed Restoration and Improvement
Wildlife Habitat Management - Threatened and Endangered Species
Wildlife Habitat Management - Harvest Species
Wildlife Habitat Management - Other Management Indicator Species and Special Habitats
Fish Habitat Management

C. APPLICATION AREAS

This prescnption applies to any area designated or recommended for special classification, except wlderness It applies to the Blacks Mountain and Swain Mountain Expenmental Forests, the Blacks Mountain and Cub Creek RNA's; the Green Island Lake, Indian Creek, Soda Ridge, Timbered Crater, Mayfield and Graham Pinery candidate RNA's; the established Black Rock, Crater Lake, Deep Hole, Homer/Deerheart, Montgomery Creek Grove, Murken, and Willow Lake Bog Special Interest Areas, the proposed Antelope Creek, Deer Creek, and Mill Creek Wild and Scenic Rivers Areas are marked "S" on the Management Area maps

D. STANDARDS AND GUIDELINES

Management specific to each area is descnbed in the Management Area direction The followmg standards and guidelines apply to all of the areas

General

1. Unless specified otherwise in the Management Area direction, mthin the planning penod develop a plan for managmg each special area, conforming to the followmg direction and to the applicable Management Area direction.

Fire and Fuels

1 Use suppression methods that minimize or avoid mechanical disturbance of special areas or that are compatible with research projects in Expenmental Forests

2. With the exception of Experimental Forests, avoid use of fire retardant chemicals unless they are necessary to protect life, property, and research values, or unless otherwise specified and justified in the area management plan

3. In Expenmental Forests, conduct only those prescnbed burning and fire hazard reduction projects specified in adopted research plans

Minerals

1 Upon classification of a new special area by the Chief or Regional Forester, recommend its withdrawal from mineral entry and/or mineral leasing if necessary to protect the values for which the area was designated

Recreation

1. Manage recreation according to the designated Recreation Opportunity Spectrum classes (see Forest Standards and Guidelines)

2. Prohibit motorized vehicles within Research Natural Areas

Special Areas

1. Continue to implement the long-range plan for the Black's Mountain Expenmental Forest (1980)and Swain Mountain Experimental Forest.

2 Continue to comply with the provisions of Establishment Reports forthe Blacks Mountain and Cub Creek Research Natural Areas (RNA's) Prepare or review draft Estabhshment Records and Designation Orders for recommended RNA's, and comply with the Designation Order upon establishment of each RNA by the Chief of the Forest Service

3. Protect each recommended RNA as if it were an approved RNA until completion of Establishment Records and final decision by the Chief of the Forest Service

Timber

1 In Research Natural Areas, allow no timber harvesting

2 In a Special Interest Area, harvest timber only if it would not detract from the natural values for which the area was designated and only after preparation of an area plan that authorizes such harvest

3 In a proposed Wild and Scenic River corridor, harvest timber only in compliance with the Wild and Scenic Rivers Act, the establishment act for recommended nvers, and the management plans for designated rivers (See FEIS Table E-17 for further guidelines on appropnate activlties.)

4 In Expenmental Forests, harvest timber in compliancemth management plans forthese areas

Visual Resources

1 Meet the followng visual quality objectives

a. *Research Natural Areas:* Preservation

h *Proposed Wild and Scenic Rivers*

1 Wild Segment: Preservation
2 Scenic Segment: Retention
3 Recreation Segment Partial Retention

c *Special Interest Areas. As* shown on the Adopted Visual Quality Objective Map.

d. *Experimental Forests* As shown *on* the Adopted Visual Quality Objectives Map

Wild and Scenic Rivers

1. Allow public recreation and other resource use activlty based on the recommended category of each nver segment.

2. Do not expand developed recreation site capacity or existing access until river plans are adopted

3. Permit resource uses that are compatible with the river's outstandingly remarkable values.

4 Prepare and implement a Wild and Scenic River plan (including final segment classifications and boundary descnptions) for each river within one year of designation by Congress.

5 Until action by Congress and implementation of a nver management plan, administer nver segments commensurate with their proposed wild, scenic, or recreational classification.

a Allow no degradation of free-flowing condition, outstandingly remarkable values or qualifying features for the proposed classification

b To the extent of Forest Service authority, permit no development of hydroelectric power facilities

c. Manage segments in accordance with the direction in the USDA-USDI Guidelines for Eligibility, Classification, and Management of River Areas (1982); and Forest Servlce Handbook 1909 12, section 8 12 and 8 2 (This direction is summanzed in FEIS Appendix E, Table E-17)

6 Within designated wilderness, manage Wild and Scenic Rivers in accordance with the above guidelines or the applicable wilderness implementation plan, whichever is more restnctive

T TIMBER PRESCRIPTION

A. PURPOSE

This prescnption emphasizes wood production and utilization while maintaining other resource values Timber harvesting is scheduled under this prescnption. Investments will be made in road construction, fuels management, reforestation, vegetative management, and timber stand improvement Vegetative management may include biologcal, chemical, mechanical, and/or hand treatment methods Timber management practices must be compatible with Forest Standards and Guidelines, Management Area direction, and the provlsions of this prescnption

B. MANAGEMENT PRACTICES

Emphasized:

Facility Constructiofleconstruction
Road Maintenance
Fuels Management
Fire Management
Full Timber Management

Permitted:

Road Closure
Road Obliteration
Minerals Management
Range Administration and Management
Range Structural Improvement and Maintenance
Range Nonstructural Improvement
Visual Resource Management
Interpretive Facilities and Servlces
Restncted Off-Highway Vehicle Use
Modified Timber Management
Watershed Restoration and Improvement
Wildlife Habitat Management - Threatened and Endangered Species
Wildlife Habitat Management - Harvest Species
Wildlife Habitat Management - Other Management Indicator Species and Special Habitats
Fish Habitat Management

C. APPLICATION *AREAS*

This prescnption applies to lands that are suitable for full timber management (see Appendix E). It does not apply to rocky, unplantable land or to eastside pine stands that are poorly stocked due to envlronmental conditions Mappable application areas are marked "T" on the Management Area maps.

D. STANDARDS AND GUIDELINES

Fire and Fuels

1 Use prescribed fire for silvicultural purposes

Forest Health

1. To control gophers that damage timber crops, use direct methods such as trapping and poisoning, and indirect methods of habitat modification

Range

1. Manage livestock grazing within plantations as needed to prevent unacceptable damage to seedlings.

2. Implement range management techniques to utilize transitory range while protecting tree seedlings

Timber

1. Develop sale area improvement plans to produce timber and improve range, wildlife, recreation, soil, and water resources.

Visual Resources

1 Meet vlsual quality objectives of at least Modification and Maximum Modification, as specified on the Adopted Visual Quality Objective Map

2. Apply these guidelines to meet the msual quality objective of Modification

   a. Management activities may dominate the charactenstic landscape

   b vegetative alterations will be wlthin the scale of the surrounding area or charactenstic landscape

   c. Vegetation alterations wlll borrow from natural form, line, color, or texture so completely that it resembles the surrounding area or charactenstic landscape

   d. Design openings to avoid straight, geometric lines and to borrow form and size from natural openings

   e. Avoid disruption of the continuous skyline

3 Apply these guidelines to meet the msual quality objective of Maximum Modification

   a Management actimties may dominate the charactenstic landscape

   b. Vegetative alterations may be out of scale with their surrounding natural landscape when viewed as foreground or middleground

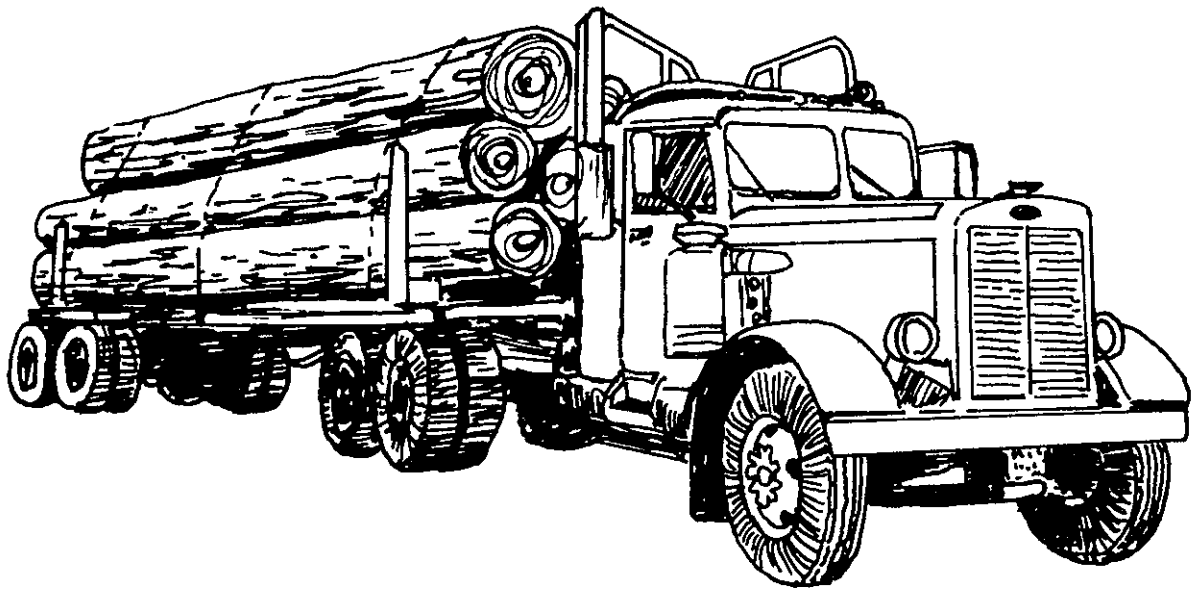
   c. Vegetative alterations may not completely borrow from natural form line, color, or texture when mewed as foreground or middleground. However, when mewed as background they must resemble the surrounding area or charactenstic landscape

   d Design openings to avoid straight geometric lines and shapes

   e Avoid disruption of the continuous skyline.

Wildlife

1 Provlde at least "medium" sutable habitat as identified in the Habitat Capability Models for emphasized wildlife species listed in the Management Area direction



V VIEW/TIMBER PRESCRIPTION

A. PURPOSE

The purpose of this prescription is to provide scheduled timber harvests while maintaining and enhancing scenic qualities in areas that are visually sensitive or have high scenic value Highway or trail corridor plans or special vegetative management plans may need to be developed to implement this prescription Timber management and transportation development meeting the adopted visual quality objectives are permitted The vlsual quality objectives are Retention and Partial Retention (distnbuted as shown on the Adopted Visual Quality Objective Map)

B. MANAGEMENT PRACTICES

Emphasized:

Road Obliteration
Fuels Management
Fire Management
Range Administration and Management
Visual Resource Management
Interpretive Facilities and Semces
Limited Timber Management
Modified Timber Management

Permitted:

Facility Constructiofleconstruction
Road Maintenance
Road Closure
Minerals Management
Range Structural Improvement and Maintenance
Range Nonstructural Improvement
Restricted Off-Highway Vehicle Use
Watershed Restoration and Improvement
Wildlife Habitat Management - Threatened and Endangered Species
Wildlife Habitat Management - Harvest Species
Wildlife Habitat Management - Other Management Indicator Species and Special Habitats
Fish Habitat Management

C. APPLICATION AREAS

This prescnption applies to suitable timberlands in areas seen from high-use roads, trails, lakes, developed recreation sites, and communities It also applies to areas of exceptional scenic quality Mappable application areas are marked "V" on the Management Area maps

D. STANDARDSAND GUIDELINES

Range

1 To the extent possible, build fences and other range structural improvements with natural-appearing materials

2. Prevent livestock concentration around developed recreation sites

Recreation

1 Manage recreation according to the Recreation Opportunity Spectrum (ROS) class of Roaded Natural or Rural (see Forest Standards and Guidelines).

Timber

1 Along major highway corndors (State Highways 89, 299, 44, 32, and 36), use the full range of silvicultural practices if the visual quality objective of Retention or Partial Retention can be met

Visual Resources

1 Within the planning period, develop corndor plans that identify key visual elements of Sensitivity Level 1 viewsheds and define desirable long-term landscape character to guide project planning Where recommended in the Plan, include retention of trees over 30" diameter in foreground areas for their attractive old growth Characteristics

2 ***Retention*** in ***the Foreground*** - Apply these guidelines to meet a visual quality objective of Retention in the foreground as viewed from designated Sensitivlty Level 1 roads, trails, streams, lakes and other recreation use areas

a Manage vegetation to maintain or increase the diversity of tree, shrub, forb and/or grass species common to the area Manage timber stands to achieve a range of age and size classes up to 48" dbh in multi-storied stands Tree spacmg should be irregular to retain the appearance of unmanaged timber stands

h. Emphasize the Limited Timber Management practice (Appendix E), using uneven-aged silvicultural methods (group and indimdual tree selection) for sanitation or salvage of high nsk trees

c Apply the Modified Timber Management practice (Appendix E) where appropriate to enhance or maintain visual quality or vegetative diversity

d. Treat slash to restore aesthetic values within one year of project completion Require slash cleanup of up to 100 percent Examples of the expected cleanup level are in "Photo Series For Quantifying Forest Residues in the Sierra Mixed Conifer Type and Sierra True Fir Type" (PNW-95, 1979), Photos 1-MC-4-PC, 1-MC-3-PC, 3-MC-3-PC, 4-MC-3-PC, and 6-MC-3-PC Treat slash in visible areas up to 400 feet or within view, whichever is less, along Sensitivity Level 1 roads and trails Treat slash up to 150 feet or within new, whichever is less, along Sensitivity Level 2 roads and trails.

e Assure that buildings and structures meet a vlsual quality objective of Retention as seen from public travel routes or recreation use areas, except those constructed for public use and situated in the foreground

3 ***Retention*** in ***the Middleground*** - Apply these guidelines to meet a visual quality objective of Retention in the middleground when viewed from designated Sensitivity Level 1 roads, trails, streams, lakes and other recreation use areas

a Manage vegetation to provide diverse, natural-appearing landscapes Retain the appearance of continuous forest cover in timber stands

b Apply the Limited Timber Management practice (Appendix E), using uneven-aged silmcultural methods

c. Apply the Modified Timber Management practice (Appendix E) where appropnate to enhance or maintain visual quality or vegetative diversity

d Treat slash to restore aesthetic values within one year of project completion

4 ***Partial Retentaon in the Foreground*** - Apply these guidelines to meet a visual quality objective of Partial Retention in the foreground as mewed from designated Sensitivity Level 1 and 2 roads, trails, streams, lakes, and other recreation use areas

a Manage vegetation to maintain the diversity of tree, shrub, forb and/or grass species common to the area Manage timber stands to achieve a range of age and size classes up to 36"+ dbh mmulti-storied stands Tree spacing should be irregular to retain the appearance **of** unmanaged timber stands

b Treat slash to restore aesthetic values within one year of project completion Examples of the expected cleanup level are in the "Photo Series for Quantifying Forest Residues in the Sierra Mixed Conifer Type and Sierra True Fir Type" (PNW-95, 1979), Photos 1-MC-4-RC, 2-MC-4-PC, 5-MC-4-PC, 7-MC-4-PC, 7-MC-4-PC, 7-MC-3-PC, 2-TF-4-RC, and 4-TF-4-RC

c. Apply the Modified Timber Management practice (Appendix E), using both even-aged and uneven-aged silvicultural methods.

d Design harvest units to have natural-appearing, irregular shapes and edges, such as those found in the natural landscape

5 ***Partial Retentton in the Middleground*** - Apply these guidelines to meet a visual quality objective of Partial Retention in the middleground as mewed from designated Sensitivity Level 1 and 2 roads, trails, streams, lakes and other recreation use areas.

a Manage timber stands to provlde a range of age and size classes over time using Modified Timber Management practices. Retain the appearance of irregular, naturally shaped openings in the forest cover.

b. Design and construct roads so that they are visually subordinate to the natural landscape character

c The effects of management activities may be noticeable, but should not attract attention. The cumulative effects of openings should remain visually subordinate *to* the characteristic landscape

d Treat slash to restore aesthetic values within one year of project completion.

Wildlife

1. Promde at least "medium" suitable habitat as identified in the Habitat Capability Models for emphasized wildlife species listed in the Management Area direction.

W WILDERNESS PRESCRIPTION

A. PURPOSE

The purpose of this prescnption is to protect natural landscapes, plant and animal communities, and natural biological processes, and to facilitate compatible public use in designated or recommended wildernesses.

The prescription specifies management direction in accordance with the Wilderness Act of 1964, assuring no permanent or long-lasting evidence of human use. Motorized and mechanized equipment is prohibited No timber harvest is allowed In each wilderness, the provisions of this prescription will be implemented through a specific mlderness implementation plan.

B. MANAGEMENT PRACTICES

Emphasized:

Fire Management
Visual Resource Management

Permitted:

Facility Construction/Reconstruction
Fuels Management
Road Obliteration
Range Administration and Management
Range Structural Improvement and Maintenance
Range Nonstructural Improvement
Wildlife Habitat Management - Threatened and Endangered Species

C. APPLICATION AREAS

This prescription applies to designated wildernesses and areas recommended for mldemess designation in this Plan, as shown on the Management Area maps These areas include the Caribou, Ishi, and Thousand Lakes Wildernesses and the proposed Heart Lake, Trail Lake B, Mill Creek, and Wild Cattle Mountain Wildernesses

D. STANDARDSAND GUIDELINES

General

1 Revise the Canbou and Thousand Lakes Wilderness Management Plans as needed for conformance with this prescription and Management Area direction Implement the 1989 Ishi Wilderness Implementation Plan; prepare a supplement for management of grazing and inholder access Prepare wilderness implementation plans for new areas subsequently designated by Congress.

2. Determine the Limits of Acceptable Change (see Glossary) for each wilderness and incorporate into mlderness implementation plans.

3 Prohbit motorized vehicles except where authonzed for emergencies or for other purposes, based on environmental analysis.

Air Quality

1. Develop Air Quality Related Values for each Class I area within the planning penod.

2. Monitor Air Quality Related Values to evaluate changes compared to limits of acceptable change in each Class I wilderness (Canbou and Thousand Lakes)

Energy

1 Do not permit hydroelectric development in recommended Wilderness.

Facilities

1 Permit natural-appearing structural improvements (such as plank treads or trails) so as to insure protection of the wilderness resource. Construct these only to the standard necessary to accommodate anticipated use

2 Provide rustic directional signs and interpretive signs at trailheads to facilitate use in designated or recommended wilderness

3 Construct or reconstruct those trails specified in the mlderness implementation plans

4 Conduct regular trail maintenance to keep trails in a stable or improving condition

5 Allow non-motorized, mechanized access for users with medically approved appliances

Fire and Fuels

1 Until approval of mlderness fire management plans, use "Contain" and/or "Control" strategies for all mlderness fires.

2 Favor indirect attack by using natural barriers and low-impact suppression techniques Use direct attack only when necessary to protect life and property in adjoining areas

3 Use existing trails, natural barners, and water in preference to constructed handlines

4 Prohibit construction of helispots

5 Avoid use of fire retardant chemicals unless necessary to protect life, property, and ad-Joining land

6 Use bulldozers for fire suppression only with Regional Forester approval

7 Locate fire camps, stagmg areas, and other facilities outside of Wilderness

8. Use prescribed fire in accordance with approved wilderness fire management plans

Fish

1 Consistent with natural selection and survival, protect fisheries from human-caused conditions that could lead to species listing as Threatened or Endangered (e g spring-run chinook salmon)

2 Permit aerial fish stocking of lakes and streams where such practices are desirable

3 Permit scientific studies that do not compromise wilderness values or expenences.

Forest Health

1. With Regional Forester approval, use measures to control insects and plant diseases whennecessary to prevent (a) unnatural loss ofthemldemessresource duetoexoticpests, and (b) unacceptable damage to resources on adjacent lands

2 Dunng any control activities, use measures that have the least adverse impact on the wilderness resource and are compatible with the Wilderness Act and management policy herein

Lands

1 Require access into private inholdings to minimize impacts to mlderness character

Minerals

1 Minimize impacts on the wilderness character dunng the exercise of valid existing mineral rights (Subject to valid rights then existing, effective January 1, 1984, wilderness areas are withdrawn from all forms of appropnation under the mining laws and from disposition under all laws pertaining to mineral leasing)

Range

1 Confine grazing to areas presently used, and manage livestock to prevent damage to streamside areas, lakeshores, meadows, and wilderness charactenstics in general

2 Prohibit new structures such as corrals, fences, or water developments, unless essential to control existing livestock use

3 Phase out all range improvements not essential to maintaining existing livestock use, and maintain essential improvements at current levels

Recreation

1 Manage each wilderness to provlde primitive recreation opportunities consistent with natural processes, pnmitive conditions, and solitude

2 Limit the amount of on-site regimentation, such as signs, barners, or fences

3 Restore areas damaged by human use to the natural condition, as identified in approved wlderness implementation plans

4 Where terrain permits, prohibit recreational stock animals within **200** feet *of* lakeshores and streambanks, except for watenng and stream crossing.

5 Inform vlsitors about rules and regulations, minimum impact camping, and alternative areas to disperse use

6 Assess capacity, monitor use, and implement use-management measures, including a quota permit system if necessary, to keep wilderness conditions within the established Limits of Acceptable Change

Visual Resources

1 Meet a visual quality objective of Preservation.

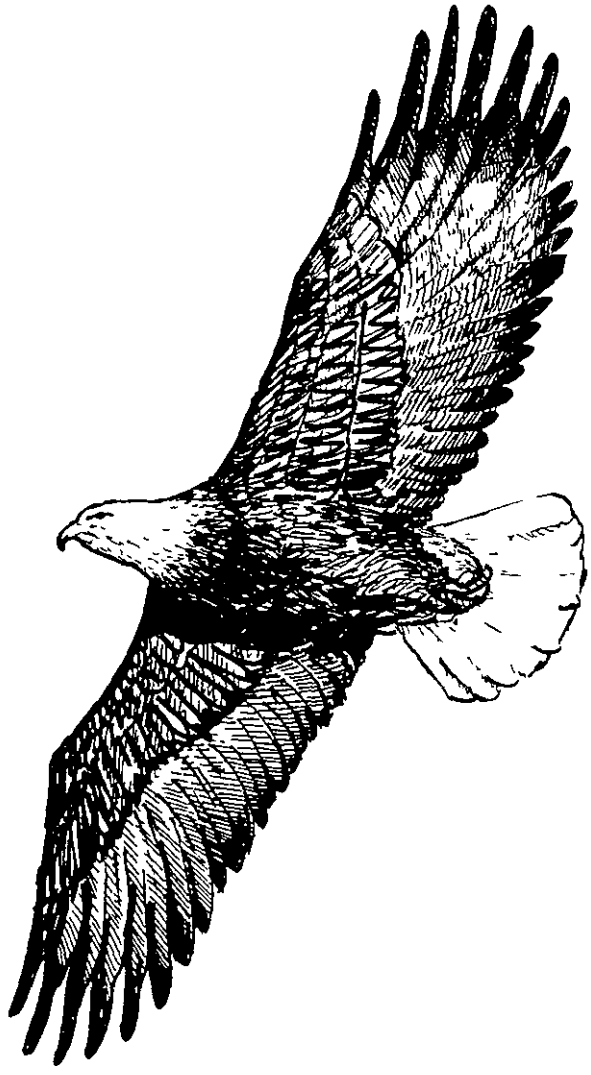
2 Where occupancy for other resource use is specifically authonzed by legislation, require a visual quality objective of Retention to be met.

Wildlife

1 Protect Threatened, Endangered and Sensitive species and their habitats Implement recovery plans as directed by the U S Fish and Wildlife Service for Threatened and Endangered species

2 Restnct predator control activities unless specifically needed to protect Threatened and Endangered species, protect public health and safety, or prevent serious losses of domestic livestock Obtain Regional Forester approval **for** each proposed action

3. Permit scientific studies that do not compromise mlderness values or experiences



Z MINIMAL MANAGEMENT PRESCRIPTION

A. PURPOSE

The purpose of this prescnption is to protect and mamtain existing charactenstics of certain lands through low intensity management Timber harvest will not be scheduled under the prescnption

B. MANAGEMENT PRACTICES

Emphasized:

None

Permitted:

Fuels Management
Fire Management
Minerals Management
Range Administration and Management
Limited Timber Management
Visual Resource Management
Watershed Restoration and Improvement
Wildlife Habitat Management - Threatened and Endangered Species
Wildlife Habitat Management - Harvest Species
Wildlife Habitat Management - Other Management Indicator Species and Special Habitats
Fish Habitat Management

C. APPLICATION AREAS

This prescnption applies to certain non-forested lands and non-productive forested lands, and to that part of Butt Mountain studied for possible ski development Mappable application areas are marked "Z" on the Management Area maps.

D. STANDARDS & GUIDELINES

Range

1. Maintain the active allotments Do not re-initiate use of vacant allotments or create new allotments

Timber

1 Allow harvest of timber, fuelwood, or other products only if

(a) long-term forest growth can be maintained,
(b) soil and geologic instability will not be aggravated,
(c) catastrophic damage such as wildfire, insect epidemic or disease epidemic has occurred.

G. MANAGEMENT AREA DIRECTION

INTRODUCTION

A Management Area is a contiguous unit of land of manageable proportions, often a tributary watershed Each area averages 25,000 acres of National Forest land, often intermingled with pnvate lands The following descnptions and management direction apply only to the National Forest land, not to private land or other pubhc agency land The Lassen National Forest has been divided into 48 Management Areas, which are aggregations of the pre-existing timber compartments Although based somewhat on administrative units, Management Areas often have relatively homogeneous physical and biological charactenstics, and similar issues and concerns. Management Areas by Ranger District are shown in Table **4-4**

Each Management Area will be managed in conformance with the Forest Goals stated in Section C. Forest Standards and Guidehnes gwen in Section E are applicable wherever relevant. The direction given in this section conforms to the Forest Goals and supplements the Forest Standards and Gmdelines to reflect the unique character of each Management Area

The management direction for each Management Area includes

Management Area Map Shows the Management Area boundary and the location mthin the Forest, general geographic features, public and private land, the road system, and developed recreation sites The red lines and letters overlying the basic map information show the prescription allocations

Due to the map scale, the boundaries of the prescription allocations are not meant to be precise Some boundanes were formally established by Congress or by previous Forest Service action (for example wilderness, experimental forests) Some boundanes are easily located on the ground, (for example campgrounds, edges of meadows), but other boundaries are purposely generalized boundaries (for example range/wildlife and minimal management prescnption boundaries) These generalized boundaries will insure that while identified values are protected, the boundanes can be adjusted somewhat in the future as detailed project planning results in better information

Also due to map scale, some small areas of prescnption allocations are not shown, but the allocations based on the defined "Application Area" gwen for each prescription in Section F still apply For example, some areas shown as the Rocky/Sparse Prescnption (K) actually contain small patches of the Timber Prescnption (T), and vice-versa Application areas for the G Prescnption (eagle and goshawk habitat, old growth retention areas) and the L Prescnption (marten and fisher habitat) are not shown pending field verification of tentatively identified areas Habitat management area boundanes for marten, fisher, and goshawks will be confirmed by December **1992.** Old growth stands will be selected as projects are proposed

A. Description Describes the location, size, prominent features, terrain, watershed, soils, vegetation, wildlife, fire history, cultural resources, recreation facilities or use, range and timber production, mming, and other uses Acreages gwen are those within the Forest boundary only

Fuel loads are described by adjectives defined in the table below The fuels include only material that is both dead and down, not live or standing

Adiective	Wet Tons/Acre
Light	**0 - 10**
Moderate	**11 - 30**
Heavy	**31 - 90**
Extreme	**91+**

B. Standards and Guidelines Lists management direction unique to each Management Area, supplementing Forest Standards and Guidelines and Management Prescnptions

C. Prescription Allocation Lists the acreage of the area allocated to each Management Prescription The acres, like the boundary lines, are not meant to be exact, but are approximations in most cases Again, not all acres are displayed on the Management Area maps due to their small size G and L Prescnption acres will be adjusted after final selection of habitat areas

D. Wildlife Habitat Allocations Lists the wildlife species that are to be emphasized in each Management Area The number of suitable territories to be provided in each Area are identified for six Threatened or Endangered, and Sensitive species: bald eagle, peregrine falcon, spotted owl, goshawk, marten and fisher These numbers are disaggregations of the Forest objectives adopted to achieve and maintain vlable populations Other management indicator species and additional important species to be emphasized in the area are also listed Although management actions may be taken to benefit species not mentioned, those species listed will receive the highest pnority in developing habitat management and protection objectives dunng project planning Specific objectives for projects will be developed from habitat capability models (Shimamoto and Airola 1981) in Appendix O

E. Desired State for Diversity Lists minimum acreages of each seral stage for the area's major vegetation types—the lower limits of desirable vegetative diversity (see Forest Standards and Guidelines for ''Vegetation and Diversity" and Appendix U in this Plan)

F. Range Allotment Strategies States the management strategy adopted for each range allotment, based on the following system

A No *Livestock* - Management excludes livestock
B Some Lavestock - Structural and non-structural range improvements are minimized Vegetative management objectives are achieved through nding, herding, and salting
C Extensive Management - Management objective is distnbution of livestock use over rangelands to meet rangeland management objectives using cost-effective structural improvements
D *Intensive* Management - Grazing systems, and structural and non-structural improvements are designed and implemented to maximize forage production and distribution of livestock while achieving rangeland management objectives.

The percent shown next to some allotments indicates the amount of the allotment that falls within the management area

Table 4-4
Management Areas By Ranger District

Almanor Management Areas	Hat Creek Management Areas	*Eagle* Lake Management Areas
20 Caribou	1 Wiley	7 Gooeh
22 Swain	2 Britton	11 Ebey
26 Mineral	3 Burney	12 Harvey
27 Upper Mill Creek	4 Hat Creek	13 Ashurst
28 Feather River	5 Ladder	14 Eagle
29 Benner	6 Black Jack	18 Grays
30 Bailey Creek	8 Snow Mounntain	19 Crater
34 Antelope Creek	9 Logan	21 Cone
35 Turner	10 Summit	23 Campbell
36 Upper Deer Creek	15 Thousand Lakes	24 McCoy
37 Butt Creek	16 Red	25 Hog
38 Prattvillle	17 LostCreek	31 Hamilton
40 Lower Mill Creek		32 Willard
41 Middle Deer Creek		33 Diamond
42 Lower Deer Creek		39 Keddie
43 Lomo		
44 Jonesville		
45 Soda Ridge		
46 Philbrook		
47 Mt. Hope		
48 Ishi		

Figure 4-3

Management Area Key

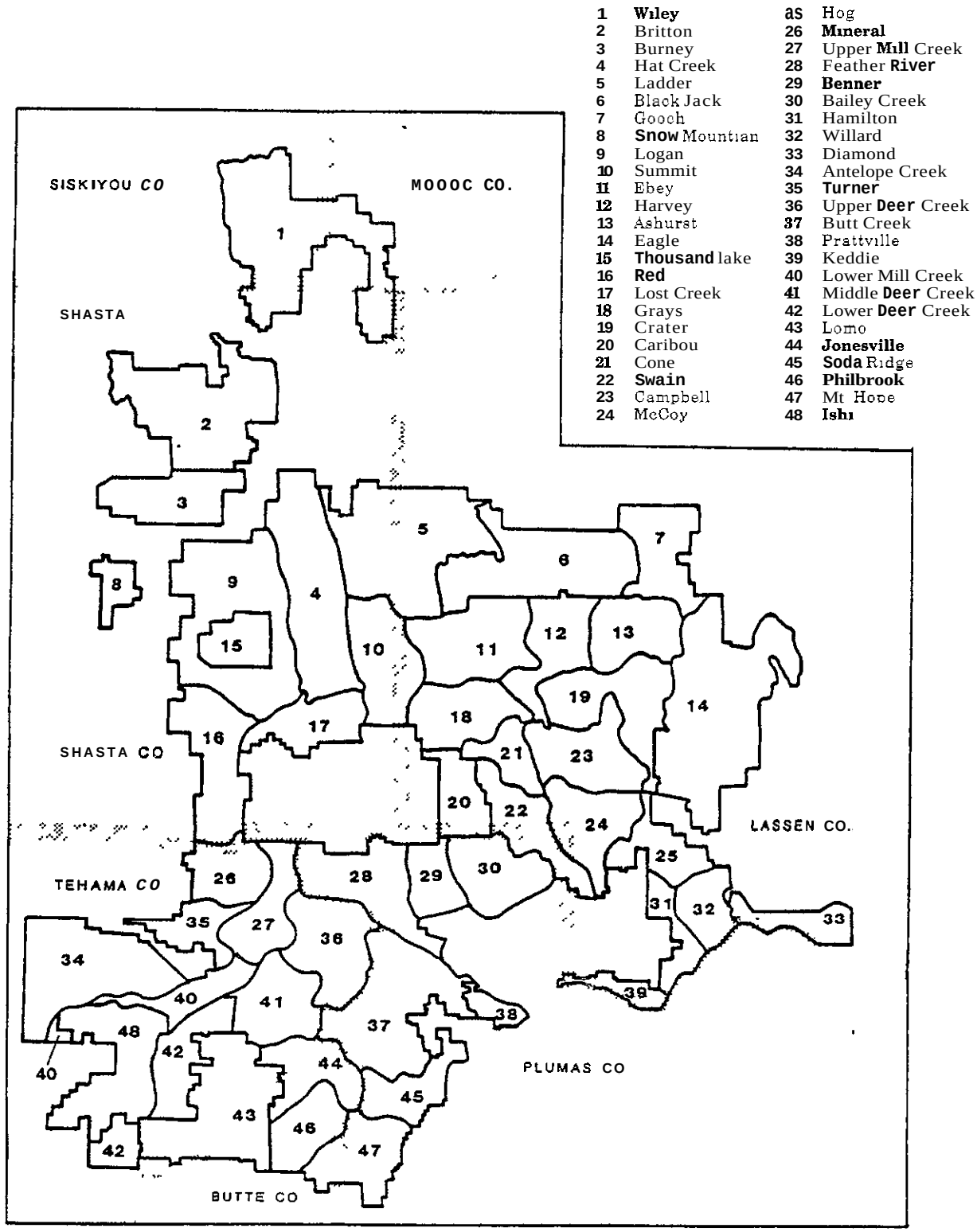
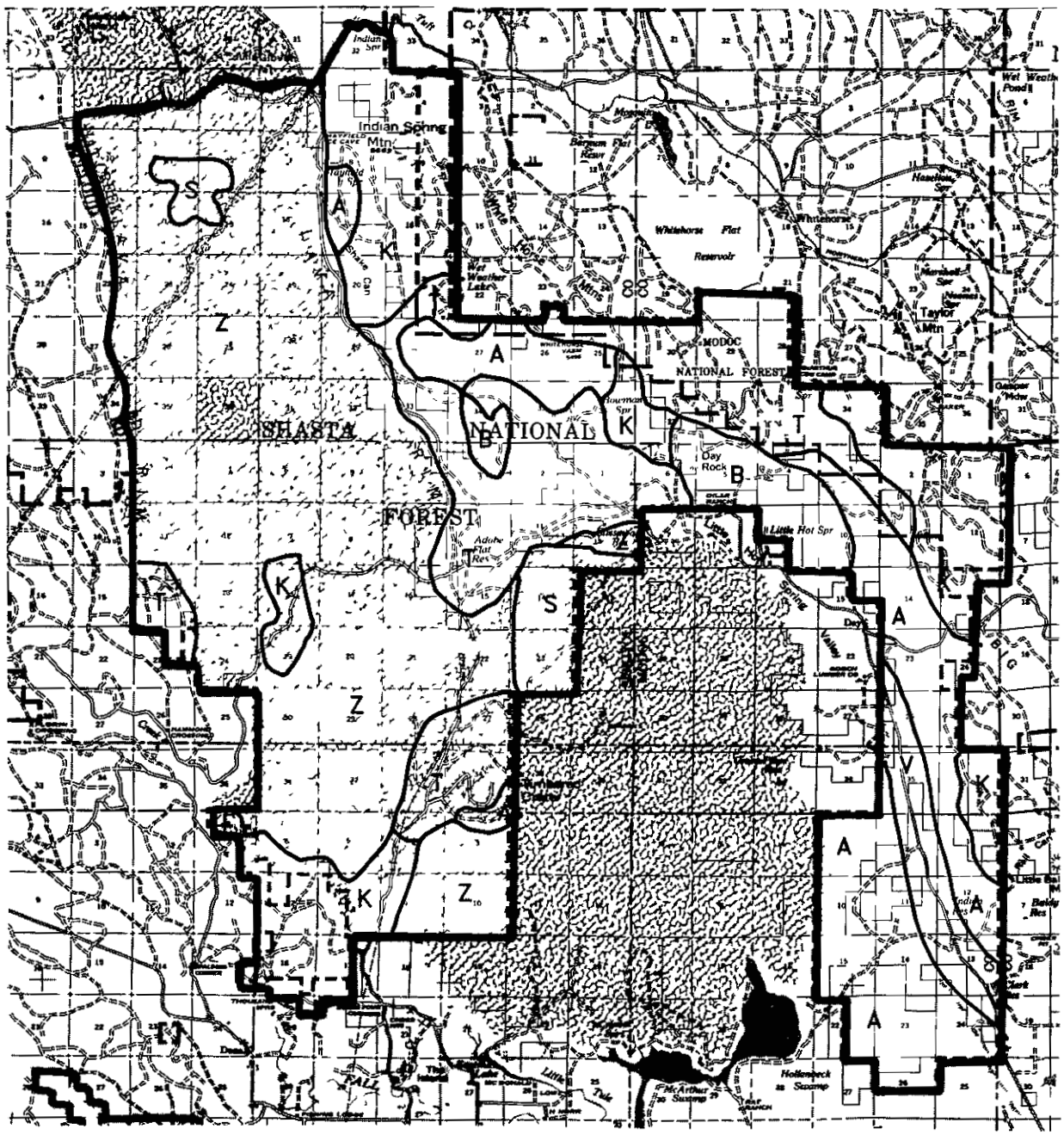


Table of Contents for Management Areas



1 Management Area
WILEY

Scale

0 .5 1 2 3 4 5 **Miles** 3\8" = 1 Mile

January 1992

Management Area 1 - WILEY

County ----------Shasta, Siskiyou, Modoc
Ranger District ----------Hat Creek
Acreage ----National Forest ----------53,610
Other ----------123,151

A. DESCRIPTION

Location The Wiley Management Area consists of a large block of Shasta National Forest land, and a few blocks of Modoc National Forest land, all administered by the Lassen National Forest. The land is north of Fall River Valley and borders the McCloud Ranger District of the Shasta-Trinity National Forest The dominant features are the Big Valley Mountain range, the Whitehorse Mountains, and a large lava flow originating in the Medicine Lake area to the north Ownership patterns are complex The lava flow is mainly on public land, but the mountainous uplands are in approximately one-half private and one-half public ownership. The private land on the Day Bench has been subdivided into numerous small ownerships with many new residences.

Physical Environment The recent volcanic terrain has no perennial streams, but underground rivers feed large springs in Fall River Valley. Elevations range from 3,320 feet east of Big Lake to 5,669 feet on Indian Springs Mountain The mountains are fairly steep with many slopes of ***50*** percent and some up to 70 percent. Precipitation ranges from 20 to 30 inches The ground surface is primarily a mixture of recent lava **flows,** with little or no soil development, and older uplifted basalt formations The most productive sites are soil accumulations at the base of the slopes

Biological Environment Plant communities range from Westside foothill and Great Basin brushlands to black oaks and mixed conifer stands at higher elevations. Fuel loads range from moderate to heavy with greatest concentrations in the logged areas Most of the logging slash has been treated Major fires have burned at the rate of one per decade In 1977, three major fires burned simultaneously in and around the area (12,000 acres in the management area, 198,000 acres on adjacent lands) The lower elevations, especially the Day Bench area, are very important mule deer winter ranges This habitat use conflicts with much of the proposed subdivision development of the private lands Other than mule deer, emphasis species are bald eagles, goshawks, gray squirrels, and hairy woodpeckers Prehistorical and historical resources are mainly confined to sites on private land and around springs Several Sensitive plant species are known to occur in the area

Management Timber harvesting on the public land began in the late 1920's and has increased from a lull in the 1950's and 1960's to two large sales in the 1980's Proposed sales around Wiley Ranch may complete the transportation system The area's firewood is very much in demand from communities in Fall River Valley, and the woodcutting area continues to expand toward the north Grazing has declined from a peak level in the early **1900's.** Today three ranching operations depend on the area for spring and early summer grazing The Wiley Ranch itself is under intensive range management. Once a homestead, it was acquired by the Forest Service in the 1940's Considerable dispersed camping, especially during hunting season, occurs in the area.

Facilities Primary access is provided via the McNab Road from Pondosa and the Timbered Crater Road from the Fall River Valley Portions of the area have geothermal lease applications and other portions have oil and gas lease applications To date, no leases have been issued Several hot springs occur on private land

Special Areas Two recommended Research Natural Areas are in the management area: Timbered Crater (1,777 acres), representing Modoc Cypress and Northern Basalt Flow Vernal Pools, and Mayfield (980 acres), representing the knobcone pine vegetation type.

B. STANDARDS AND GUIDELINES

Firewood

1 Give personal use of firewood prionty over commercial use

Lands

1 Acquire winter range and Threatened and Endangered species habitat through land exchange

2 Deny special use pernnts that conflict with deer winter range

Minerals

1. Consider effect on the Day deer herd during planning of geothermal projects

Sensitive Plants

1 Monitor and protect populations of long-haired star tulip *(Calochortus longebarbatus)* at Wiley Ranch and other suitable habitats

2 Monitor and protect slender Orcutt grass (*Orcuttia tenuis*) and Mathias' coyote thistle (*Eryngium mathiasiae*) populations, and direct grazing away from vernal pools Inventory for Boggs Lake hedge-hyssop *(Gratrola heterosepala)* and additional slender Orcutt grass and Mathias' coyote thistle populations in vernal pools and similar habitat

3 Inventory for Bellinger's meadowfoam (*Limnanthes floccosa spp bellingeriana*) in vernal pools, drainages, and other seasonally wet areas

4 Inventory for Modoc County knotweed *(Polygonum polygaloides spp esotericum)* in vernal pools and adobe flat type areas

5 Monitor and protect Egg Lake monkeyflower (*Mimulus pygmaeus)* in the proposed Timbered Crater RNA, and inventory for additional populations in seasonally wet areas.

Special Areas

1 Prepare and implement RNA management plans for Timbered Crater and Mayfield when the RNA's are established.

Wildlife

1. Retain hardwoods. Prohibit firewood use of standing hardwoods.

2 Implement road closures to protect the bald eagle nest at Big Lake

3 Give priority to mule deer in the allocation of forage

4 Regenerate decadent brushfields to improve deer winter range.

5 Protect lava tubes and caves as necessary to provlde for bat roosting and maternity colonies

6 Where feasible, develop wetlands to increase waterfowl production and provlde habitat for fall migrants.

C. PRESCRIPTION ALLOCATION

Prescription		Acres
A	Non-Timber Wildlife	9,900
B	Range-Wildlife	2,000
E	Early Successional	100
K	Rocky/Sparse	3,580
S	Special Areas	2,500
T	Timber	5,710
V	View/Timber	1,200
Z	Minimal Management	28,620
	Total	**53,610**

D. WILDLIFE HABITAT ALLOCATIONS

Bald Eagle Territones	1
Goshawk Territories	3

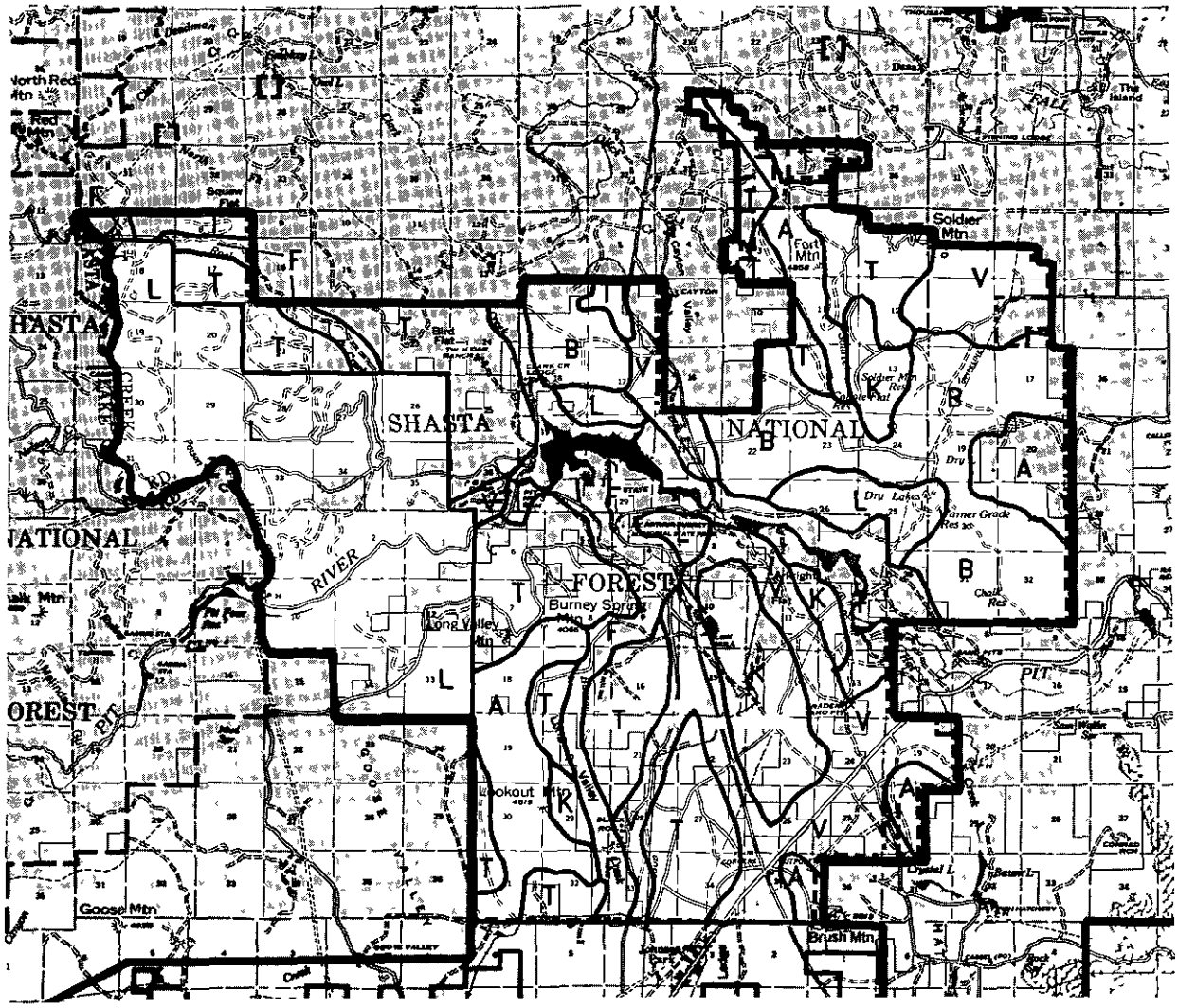
Other Emphasis Species Deer (winter range), gray squirrel, hairy woodpecker

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	200
Montane Shrub	70
Sagebrush	100
Conifer Forest	
Eastside Pine	430
Mixed	120
Red Fir	0

F. RANGEALLOTMENT STRATEGIES

Allotment	Strategy
North Hot Spnngs (100%)	C
South Hot Spnngs (100%)	B



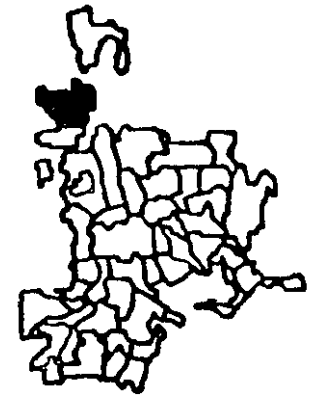
2 Management Area
BRITTON

Scale

0 .5 1 2 3 4 5 **Miles** 3/8" = 1 **Mile**

January 1992

Management Area 2 - BRITTON



County ---------- Shasta
Ranger District ---------- Hat Creek
Acreage ---- National Forest ---------- 39,510
Other ---------- 22,316

A. DESCRIPTION

Location The Britton Management Area is a large block of Shasta National Forest land administered by the Lassen National Forest It is bounded on the west by the Shasta Lake Ranger Distnct boundary and on the other three sides by the National Forest boundary Lake Britton is the central landmark. Land ownership is highly intermingled Non-Forest land includes pnvate holdings of major timber companies, ranchers, small landowners, and public land administered by the Bureau of Land Management and the State of California

Physical Environment Elevations range from approximately 2,400 feet at the Pit River No 3 powerhouse to **5,540** feet on Soldier Mountain. Precipitation averages **44** inches, rangmg from 25 inches on the east side of the management area to 60 inches in the upper reaches of Screwdriver and Rock Creeks. A snowpack generally forms above 4,000-5,000 feet Landforms are complex and vaned In the typical volcanic landform, relatively flat areas give way abruptly to prominent peaks such as Soldier Mountain and Burney Spring Mountain. The land adjacent to Lake Britton is a deep, erodible diatomaceous earth deposit with gentle slopes The area to the north of the Pit River below Lake Bntton has deeply dissected terrain with perennial streams and unstable channels The soils in this area are highly productive, but subject to accelerated erosion that is intensified by the steeper topography.

Biological Environment Vegetation is as variable as topography Brushland and eastside pine type in the lower elevations give way to mixed conifer at higher elevations, and Douglas-fir forest in the Rock Creek and Screwdriver Creek drainages Large meadows at Cayton and Long Valleys, and intrusions of oak-woodland type, add to the diversity Within forested areas, fuel loads are moderate to heavy, rangmg from 20 to 60 tons per acre The majonty of the loggmg slash has been treated The area averages about two lightning fires and three human caused fires per year The typical fire size is one to three acres Wildlife species are abundant and diverse The lower elevations provide important mnter range for mule deer, while the area adjacent to Lake Britton and the Pit River has one of the densest populations *of* bald eagles anywhere in California The lake itself is a major waterfowl area Spotted owls have also been detected at Soldier Mountain, in the Screwdriver Creek drainage, and along the Pit River above Pit *4* Reservoir This management area is the interface between the northern spotted owl (Federally listed as Threatened) and the California spotted owl (Forest Service Sensitive) The western portion of the management area was designated a Habitat Conservation Area in November 1990 with the Agency's decision to implement the recommendations of the Interagency Scientific Committee to Address the Conservation of the Northern spotted owl Elk are found in the far western portion of the management area Bank swallows have been found to nest in the walls of the sand pits located along the Pit River The Pit River, Lake Bntton, and Rock Creek are major fisheries. Numerous prehistoric sites have been located, including major village sites adjacent to Lake Britton An Archaeologxal District listed on the National Register of Historic Places has been designated around the lake because of these sites

Management In addition to mining, timber harvesting and recreation are major activities The Lake Bntton vicinity is an important fuelwood gathering area for the communities of Burney and Fall River Mills Cattle grazing also

takes place Major efforts have occurred to protect and enhance both the bald eagle habitat and deer winter range Prescribed fire has been used for deer winter range enhancement. The management within the Habitat Conservation Area will be determined hy the recovery plan for the northern spotted owl At present, few management actinties are permitted Dusty Camp is the only National Forest developed recreation site, but a PG&E campground, a boat launching site, and McArthur-Burney Falls State Park are within the area Portions of the area are used for dispersed camping, hunting, and fishing

Facilities About 20 miles of the Pacific Crest National Scenic Trail (PCT) crosses the area. Highways 89 and 299 and the McCloud River Railroad are major travel corridors Large-scale mming of the diatomaceous earth around Lake Britton began in 1982 and more extensive operations are planned Applications for oil and gas leases cover nearly the entire area, but no leases have been issued

B. STANDARDSAND GUIDELINES

Air Quality

1 Require surfacing of all roads used for commercial purposes in areas of diatomaceous earth

2 Coordinate with air quality control agencies in administration of diatomaceous earth mining operations

Cultural Resources

1 Maintain the integrity of the Lake Britton Archaeological Distnct

Fire/Fuels

1 Assign a Forest Semce resource representative to all fires in the Bald Eagle Management Unit

Firewood

1 Give personal use of firewood prionty over commercial use

Fish

1 Maintain natural flow in Rock Creek.

2. Cooperate in efforts to reduce impacts on fisheries from water level fluctuations in Lake Bntton

Lands

1 Exchange lands under special use permit to McArthur-Burney Falls Memorial State Park

Minerals

1 Permit open pit mining where no conflict with bald eagle management would result

Recreation

1 Maintain Dusty Camp as a campground to be admmistered by PG&E

2 Manage the undeveloped camping area at Rock Creek as a dispersed campsite.

Sensitive Plants

1 Monitor and protect populations of slender Orcutt grass (*Orcuttia tenuis*), and Mathias' coyote thistle (*Eryngium mathiasiae*) Inventory for Boggs Lake hedge-hyssop (*Gratiola heterosepala),* Bellmger'smeadowfoam (*Limnanthes floccosa spp bellingeriana*) and additional slender Orcutt grass and Mathias' coyote thistle populations in vernal pools and other seasonally wet areas

2 Inventory for Salmon Mountains wakerobin (*Trillium ovatum spp oettingeri*) in moist drainages

Soils

1 Develop special management practices for all actinties on diatomaceous earth to reduce erosion and maintain soil productivity

Timber

1 Develop and apply special management practices to reduce conflicts between livestock use and plantation establishment

Visual Resources

1. Meet a vlsual quahty objective of Partial Retention ın the foreground of the Pacific Crest National Scenic Trail from its junction unth Forest Road 11 north, from that point south, meet Retention.

Water and Riparian Areas

1. Rehabilitate Screwdrıver and Rock Creeks Apply special management practices to protect the sensitive nature of these watersheds.

2. Do not approve mınıng operating plans without measures to protect the water quality of Lake Britton and the Pit River.

Wildlife

1 Maıntain year-long road closure ın the North Shore Bald Eagle Territory.

2. Mamtam seasonal road closure in the Warner Grade/Dry Lakes Bald Eagle Management Unit.

3. Apply special silvlcultural prescnptions to enhance bald eagle habitat

4 Emphasize hardwood retention; prohibit firewood use of standing hardwoods

5. When manıpulatıng vegetation, emphasize wild turkey habitat where appropnate

6 Give mule deer pnonty by allocating forage in winter range areas Continue regenerating decadent brushfields to improve winter range.

7. Provlde bank swallow nesting habitat during mining reclamation if habitat potential exists.

8. Manage the Northern Spotted Owl Habitat Conservation Area in a manner not inconsistent with the Interagency Spotted Owl Committee's recommendation.

C. PRESCRIPTION ALLOCATION

Prescnption	Acres
A Non-Timber Wildlife	4,500
B Range-Wildhfe	8,960
D Developed Recreation	50
F Rıparıan/Fısh	420
K Rocky/Sparse Tımber	3,100
L Late Successional	12,280
T Timber	6,890
V View/Tımber	3,310
Total	39,510

D. WILDLIFE HABITAT ALLOCATIONS

Bald Eagle Terrıtorıes	6
Spotted Owl Habitat Areas	3
Goshawk Territones	7

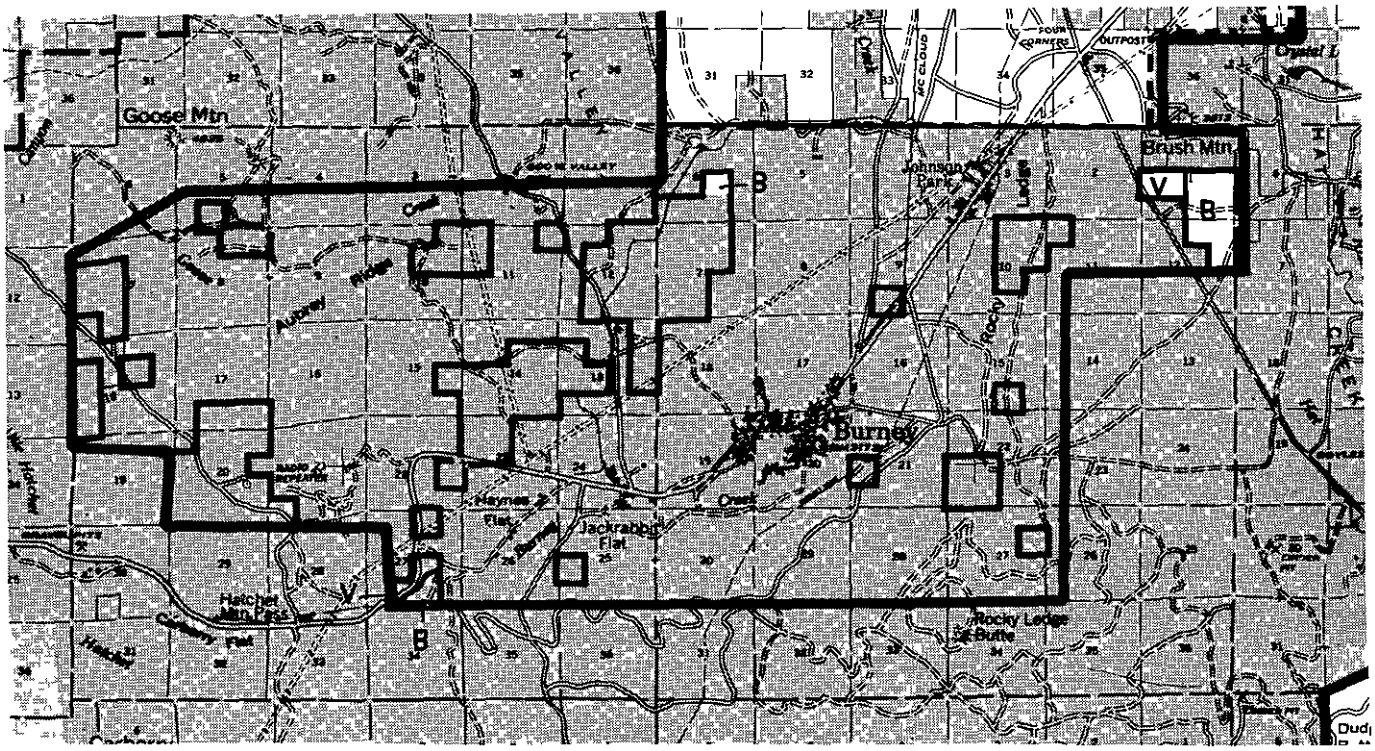
Other Emphasis Species. Osprey, pileated woodpecker, hairy woodpecker, deer (winter range), gray squirrel, bass

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	40
Montane Shrub	255
Sagebrush	10
Conifer Forest.	
Eastside Pine	460
Mıxed	750
Red Fir	0

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Blue Lake (100%)	C
Clayton Valley (100%)	C
Soldıer Mountain (100%)	C



3 Management Area
BURNEY

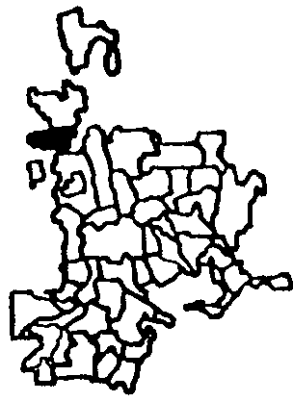
Scale

0 .5 1 2 3 4 5 Miles 1/2" = 1 Mile

January 1992

Management Area 3 - BURNEY

County ---------- Shasta
Ranger District ---------- Hat Creek
Acreage ---- National Forest ---------- 540
Other ---------- 104,787



A. DESCRIPTION

Location The Burney Management Area is compnsed of three isolated parcels of Lassen National Forest land They range in size from 40 to 360 acres and are located within eight miles of the town of Bumey

Physical Environment Elevations on the remaining three National Forest system land parcels in this management area range from 3,400 feet near Brush Mountain to 4,200 feet near the Vista Point on Highway 2993 With the exception of the parcel at Vista Point, the management area is relatively flat Although the perennial Goose Creek and Burney Creek pass through the management area, neither crosses National Forest land Precipitation ranges from 20 to 60 inches and averages 38 inches, the snow level is usually above 4,000 feet The area has well-developed forest soils from basalt parent material

Biological Environment Vegetation is eastside pine type in the eastern half and mured conifer in the western half Fuel loadings in these stands are moderate. Fires in the area are typically low intensity and less than one acre in size They are distnbuted equally between lightning and human-caused fires and occur at the rate of two to three per year During an extreme drought in 1977, a wildfire consumed 820 acres, **23** acres of which were National Forest land. Wildlife species in the area are typical of the mixed conifer and eastside pine types. The development and management of the private lands in and around Burney has a major effect on wldlife populations.

Management While intensive timber cutting has occurred on adjacent private lands, harvesting on the National Forest land has been light and limited pnmarily to sanitation harvests The scattered nature of the ownership, low timber volumes, and high harvest costs account for the light harvests The area is intensively used for firewood gathenng by Burney residents, causing problems for adjacent landowners because of differing fuelwood cutting policies and poorly defined property lines Recent land exchanges have eliminated all but three parcels from National Forest ownership

Facilities Management of the area has focused on permittee projects such as highway corndors (Highway 89 & 299), telephone lines, and the Vista Point mewing facility Some parcels have been subject to geothermal lease applications

B. STANDARDSAND GUIDELINES

Air Quality

1 Cooperate with State and local air quality agencies to monitor air quality

Firewood

1 Give personal use of firewood priority over industnal use.

Lands

1 Dispose of all tracts through exchanges except those under special use permit to Burney High School, or tracts desirable for Sensitive species management

Sensitive Plants

1 Monitor and protect, if necessary, populations of long haired star tulip (*Calochortus longebarbatus)* Inventory meadows for additional populations

2. Monitor and protect slender Orcutt grass (Orcuttia ***tenuzs)*** and other vernal pool species populations, and exclude vernal pools from grazing allotments Inventory for possible Boggs Lake hedge hyssop (Gratzola heterosepala), Mathias coyote thistle (*Eryngzum mathiasae*), and additional Orcuttia populations in vernal pools

3 Inventory for possible Bellmger's meadowfoam(*Limnanthes floccosa* spp *bellingeriana*) in vernal pools, drainages, and other seasonally wet areas.

Wildlife

1 **When** manipulating vegetation, emphasize wild turkey habitat where appropnate.

C. PRESCRIPTIONALLOCATION

Prescnption		Acres
B	Range-Wildlife	**370**
V	Vıew/Tımber	**170**
	Total	540

D. WILDLIFE HABITAT ALLOCATIONS

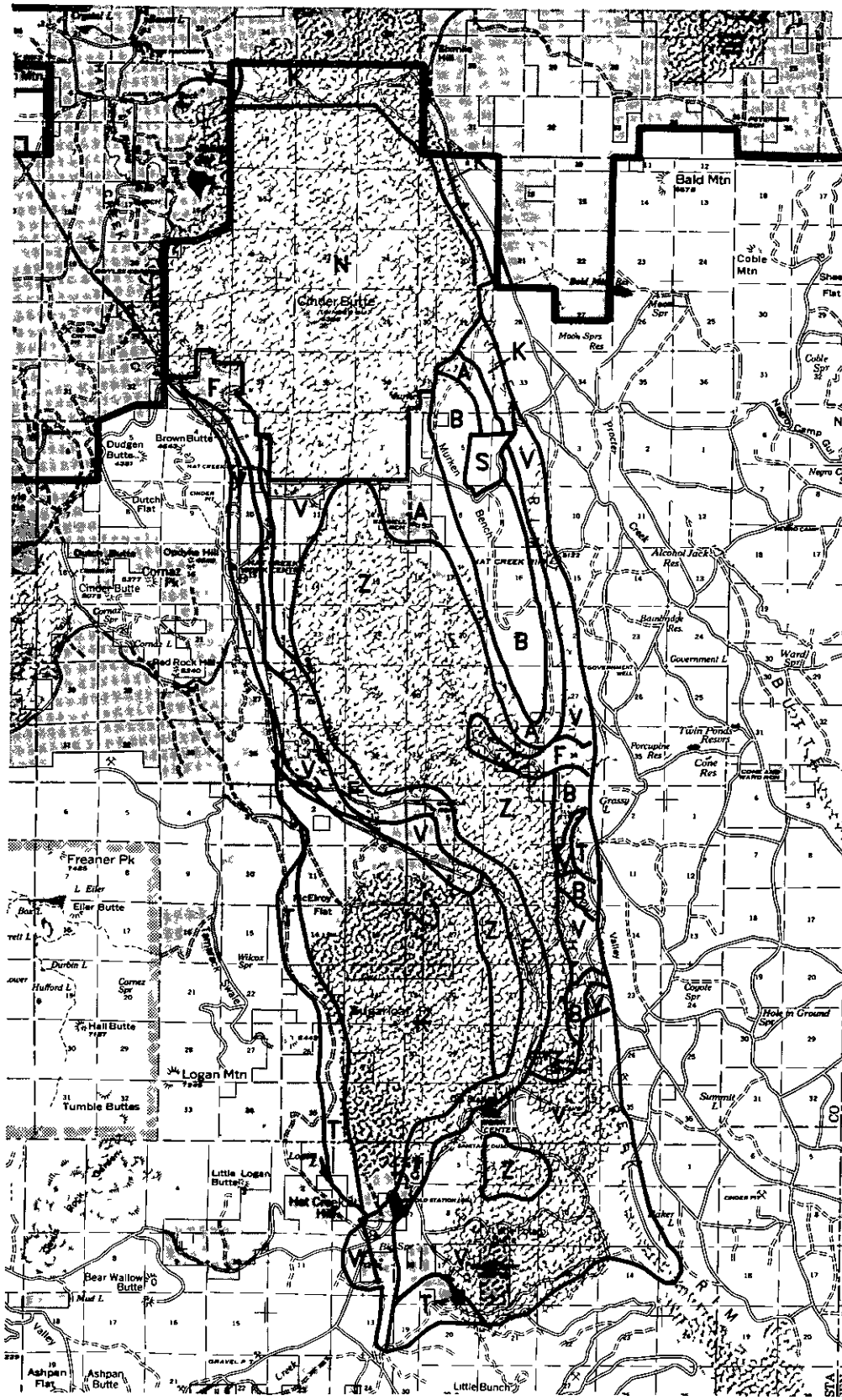
Emphasis Species Gray squirrel, hairy woodpecker

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	***5***
Montane Shrub	***0***
Sagebrush	**0**
Conifer Forest	
Eastside Pine	**13**
Mıxed	**8**
Red Fir	**0**

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
None	



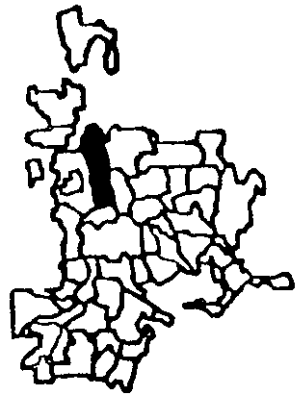
4 Management Area HAT CREEK

Scale

0 .5 1 2 3 4 5 Miles 3/8" = 1 Mile

January 1992

Management Area 4 - HAT CREEK



County ---------- Shasta
Ranger District ---------- Hat Creek
Acreage ---- National Forest ---------- 49,530
Other ---------- 12,115

A. DESCRIPTION

Location The Hat Creek Management Area encompasses Hat Creek Valley It is bordered by the Hat Creek Rim to the east and a series of volcanic peaks and cones to the west This area is charactenzed by recent volcanic activlty Hat Creek (including Honn Creek), flowing the length of the area, and Lost Creek are the only streams Numerous homes, ranches, and two small towns are located on the pnvate land that borders much of the creek

Physical Environment Elevations range from 3,250 feet at the north end of the valley to 6,552 feet at the top of Sugarloaf Mountain, a large volcano at the south end of the valley The terrain is generally flat except for Sugarloaf Peak and the Hat Creek Rim where slopes range from 30 to over 70 percent The valley receives about 22 inches of precipitation per year of which one third comes as snow The mild summers are conducive to the high recreation use Soils are primarily volcanic in origin, although some deep alluvial deposits are found throughout the valley A few cinder cones occur in the area

Biological Environment Vegetation ranges from extensive areas of juniper, digger pine, and brush on the lava flows to meadows and riparian vegetation near Hat Creek Forested areas are limited to small isolated stands on the edges of the area Fuel loads vary from light to heavy, with the greatest concentrations in the forested areas The valley has the highest fire occurrence on the Hat Creek District, averaging between 15 and 20 acres per year About half of these fires are of human origin The typical fire size is less than one acre, however, in September 1987, the Lost Fire started from a lightning strike and burned more than 23,000 acres before it was controlled The area is part of the winter range for the Hat Creek mule deer herd The riparian zones along Hat and Lost Creeks provide important wildlife habitat These creeks are also good trout fisheries, Hat Creek is stocked regularly Lost Creek originates in a canyon from springs thought to be fed from Butte Creek to the east Lost Creek continues across the Hat Creek Valley floor to pnvate land Several places along the valley are spiritually important to the local Native Americans Sugarloaf Mountain is one such sensitive area over which disputes have occurred in the past

Management Due to the rocky, sparse nature of timber stands, timber production and firewood cutting are low Grazing is confined to an area on the east side of the valley called Murken Bench, which is used for spring grazing by ranchers based in the valley Recreation is a dominant use in the area State Highway 89 runs the length of the valley parallel to Hat Creek and provides access to several high-use developed campgrounds A portion of the area is within the designated Hat Creek Recreational Area Several picnic and day use areas, interpretive trails, a panoramic point, and a geological area interpreting lava flows and the valley's origin are present A number of trails link the valley floor to the Pacific Crest Trail along the Hat Creek nm An active cinder mining operation is located in the northern end of the area at Six Mile Hill

Facilities The area is primarily accessible from Highway 89/44, the Murken Bench road, and a few National Forest roads A small area has been subject to geothermal lease application, while oil and gas lease applications cover much of the area, but no leases have been issued Hat Creek has attracted attention for development of small hydroelectric facilities Such proposals have generated considerable local debate

Special Areas A 380 acre area on Murken Bench is established as a botanical special interest area representing a disjunct occurrence of vegetation from the Sacramento Valley foothills

B. STANDARDS AND GUIDELINES

Cultural Resources

1 Protect the cultural features of Sugarloaf Mountain and Lost Creek Canyon

2. At recreation facilities, provide information on the cultural history of the area.

Firewood

1 Give personal use of firewood prionty over commercial use

Fish

1 Investigate habitat improvement opportunities in Hat Creek, including developing pools, riffles and instream cover, where deficient

Recreation

1. Improve access to Hat Creek for fishing below the Bridge Day Use area behind Honn Camp

2 Provlde at least one site that can be used by the physically challenged at each developed recreation area

3 Improve Hat Group Camp, and expand Bndge Campground thereafter

4. Develop a water source along the Pacific Crest Trail at Rocky Jewel Mine

5 Develop a roadside overlook of the Hat Creek Valley on Forest Road 18

6 Maintain Hat Creek in a natural and free flowing condition within at least one-half mile of any developed recreation site.

7 Maintain Hat Creek in a natural and free flowing condition at least one-half mile north of Lassen Volcanic National Park's northern boundary

8 Manage the undeveloped campsites at Twin Bridges as dispersed campsites

Sensitive Plants

1 Monitor and protect populations of Boggs Lake hedge-hyssop (*Gratiola heterosepala),* and other rare vernal pool species, on Murken Bench Inventory for additional populations in vernal pool type habitats

Soils

1 Prohibit tractor logging on cinder cone slopes steeper than 20 percent

Special Areas

1 Prepare and implement a plan for the Murken Special Interest Area, to protect and highlight the botanical area's distinctive features

Visual Resources

1 Along the Pacific Crest National Scenic Trail north of the Hat Creek Rim lookout, meet a visual quality objective of Retention in the foreground South of the lookout meet a visual quality objective of Partial Retention in the foreground seen from the trail

2 Maintain a high level of vlsual quality in the Hat Creek Valley Recreation Complex and within areas visible from Highways 89 and 44

3 Meet a vlsual quality objective of Retention along Hat Creek within one-half mile of any developed recreation site

Water and Riparian Areas

1 Maintain and improve riparian habitat along Hat Creek

2 The extent of Forest Service authority, no development of hydroelectric power facilities would be permitted on Hat Creek

Wildlife

1. Protect lava tubes and caves as necessary to provlde for bat roosting and maternity colonies

2 Protect and enhance foragmg and nesting habitat for osprey

C. PRESCRIPTIONALLOCATION

Prescnption		Acres
A	Non-Timber Wildlife	1,800
B	Range-Wildlife	2,900
D	Developed Recreation	140
F	Riparian/Fish	1,500
K	Rocky/Sparse Timber	5,880
N	Semi-Primitive Non-Motorized	14,900
S	Special	400
V	View/Timber	8,360
Z	Minimal Management	13,650
	Total	49,530

D. WILDLIFE HABITAT ALLOCATIONS

Peregrine Falcon Temtones	1
Goshawk Territones	1

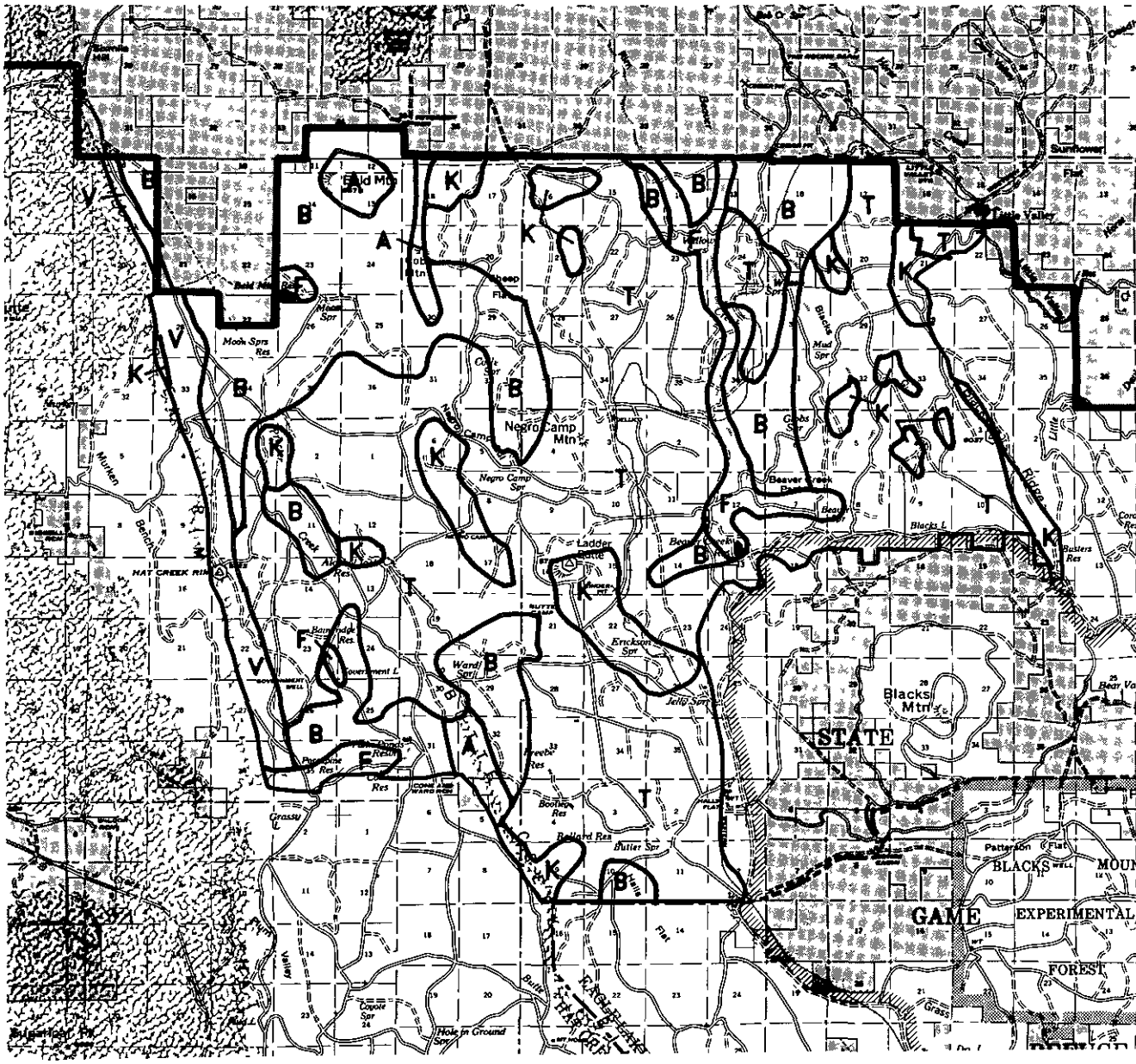
Other Emphasis Species. Deer (winter range), rainbow trout

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	490
Montane Shrub	250
Sagebrush	390
Conifer Forest	
Eastside Pine	380
Mixed	260
Red Fir	0

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Hat Creek (25%)	C
Horse Valley (75%)	C
Murken Lake (100%)	C
Sur Mile (100%)	C



5 Management Area
LADDER

Scale

0 .5 1 2 3 4 5 Miles 3/8" = 1 Mile

January 1992

Management Area 5 - LADDER

County ----------Shasta, Lassen
Ranger District ----------Hat Creek
Acreage ----National Forest ----------70,090
Other ----------1,228

A. DESCRIPTION

Location The Ladder Management Area is bounded to the north by Bureau of Land Management lands near the Fall River Valley The main drainage is Beaver Creek, which is tributary to the Pit River. Lost Creek originates in the southern portion **of** the area, and the intermittent Proctor Creek drains some of the area. A few small inholdings of pnvate land are present.

Physical Environment The area is generally flat, but has several small mountains and buttes Elevation ranges from 3,600 feet along Hat Creek Rim to 6,037 feet on Blacks Ridge The climate is characterized by low rainfall, averaging 18 inches and reaching a maximum of **25** inches at the higher elevations Though the area is large, it has only a few small streams due to the gentle slopes and permeable volcanic terrain. Forest and range soils, derived from andesite, basalt, and rhyolite, vary from shallow to deep. Rhyolite soils are infertile and erodible

Biological Environment Vegetation is varied Brush and juniper woodlands occupy the lower elevations, eastside ponderosa pine type is dominant in the mid-elevations; and scattered stands of mixed conifers are found on the mountain tops. Numerous dry meadows and flats are interspersed within the pine forests Fuel loads in the pine stands range from moderate to heavy, and the majonty have been treated Fires have been generally limited to lightning fires; a few were human-caused. The largest in recent history was the Lost Fire of 1987, which started from a lightning strike in the lava rocks along the west side of the area and burned **23,000** acres before it was controlled Over 4,000 acres of the area required reforestation after this fire The area is very important as wintering and transition range for mule deer. Goshawk populations are significant, and the area also supports a modest number of antelope. Fishenes are found mainly in many small reservoirs populated by warm-water species. The largest of these is Bald Mountain Reservoir which is also a very important wetland for waterfowl Numerous other areas have been developed for waterfowl, notably the Beaver Creek wetlands and Cone Reservoir Prehistorical and historical resources are mainly centered around the meadows and stream courses These areas were used by Native Amencans for food gathenng and camping, and by the sheep herders of the late 1800's

Management Timber production has been extensive throughout this unit Many of the larger-sized trees have been removed, and tens of thousands of acres of young trees have been thinned Some of the first techniques for slash treatment were developed in this area The areas closest to Fall River Valley are important firewood areas. Rangelands are very productive Seven different range allotments (Proctor Creek, Bainbridge, Bald Mountain, Willow Springs, Butte Creek, Horse Valley, and Bear Valley) cover the area and provide spnng and summer grazing Hunting and camping are major uses of the area dunng deer season

Facilities The Pacific Crest National Scenic Trail runs along the western edge of the area along Hat Creek Rim. The Union Pacific Railroad passes through the area The area is heavily roaded, Forest Roads 18 and **22** and County Road **111** are the major travel routes Part of the area has been subject to geothermal lease application. The entire area has been subject to oil and gas lease application, but no leases have been issued

B. STANDARDSAND GUIDELINES

Cultural Resources

1. Maintain the cultural setting of Lost Creek

Facilities

1 Initiate a feasibility study with Lassen County to identify and perpetuate one major north-south travel route ulthin the west half of the management area.

Recreation

1. Develop a water source for the Pacific Crest Trail

2 Manage the undeveloped camping area at Bald Mountain Reservoir as a dispersed campsite.

Sensitive Plants

1 Monitor and protect populations of Boggs Lake hedge-hyssop *(Gratrola heterosepala)* Inventory for slender Orcutt grass (*Orcuttia tenuis*), Mathias' coyote thistle *(Eryngium mathiasae)*, Bellinger's meadowfoam *(Lzmnanthesfloccosa ssp. bellingeriana)* and additional Boggs Lake hedge-hyssop in vernal pools, reservoir edges, and other seasonally wet areas.

Soils

1. Prohibit tractor loggmg on rhyolitic soils with slopes steeper than 35 percent

Visual Resources

1 Meet a vlsual quality objective of Partial Retention in the foreground of the Pacific Crest National Scenic Trail from the Hat Creek Lookout to the south, from that point north, meet Retention Maintain remaining shade

Water and Riparian Areas

1 Maintain Beaver Creek erosion control structures

2 Maintain and improve npanan habitat along Beaver Creek and around Willow Springs.

Wildlife

1 Manage grazing to protect the integnty of waterfowl nestingon developed wetland sites

2 Where feasible, develop wetlands to increase waterfowl production and provlde habitat for fall migrants

3 Continue to regenerate decadent brushfields to improve winter range for the West Lassen deer herd.

4 Provlde "high" habitat capability levels of snags around wetlands for riparian- and snag-dependent species (see Appendur O)

5. Enhance habitat for pronghorn antelope through manipulating vegetation, developing waterholes, and limiting road density.

6 Retain oaks specifically for wildlife habitat.

C. PRESCRIPTION ALLOCATION

Prescnption		Acres
A	Non-Timber Wildlife	2,700
B	Range-Wildlife	19,440
E	Early Successional	200
F	Riparian/Fish	2,180
K	Rocky/Sparse Timber	9,570
T	Timber	31,780
V	View/Timber	4,220
	Total	70,090

D. WILDLIFE HABITAT ALLOCATIONS

Goshawk Temtones 7

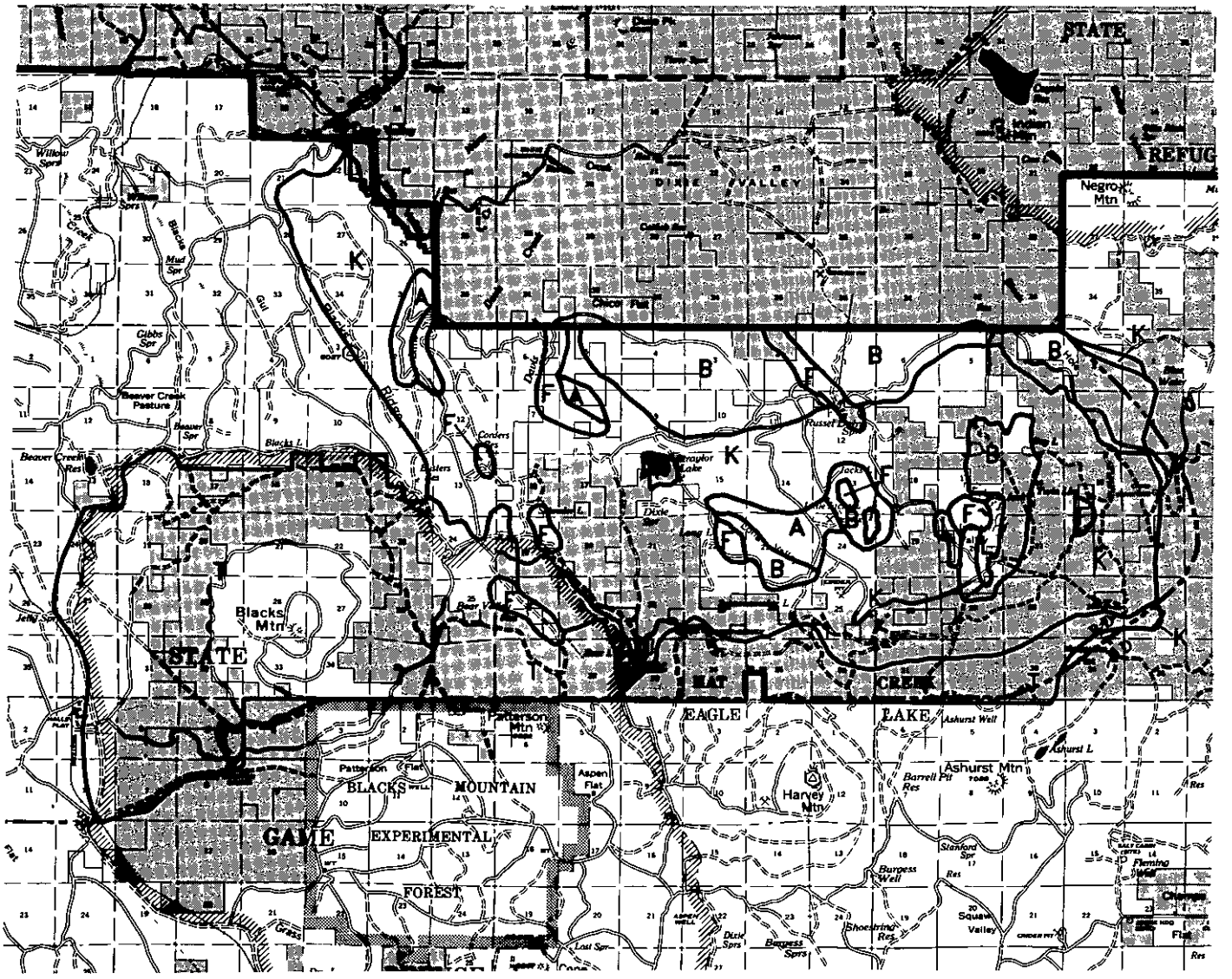
Other Emphasis Species. Deer (winter range), hairy woodpecker, mallard, pronghorn antelope, bass.

E. DESIREDSTATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	90
Montane Shrub	0
Sagebrush	220
Conifer Forest	
Eastside Pine	2305
Mixed	60
Red Fir	0

F. RANGEALLOTMENT STRATEGIES

Allotment	Strategy
Bainbridge (100%)	D
Bald Mountain (100%)	C
Bear Valley (50%)	D
Butte Creek (25%)	D
Horse Valley (25%)	C
Proctor Creek (100%)	D
Willow Springs (90%)	D



6 Management Area
BLACK JACK

Scale

0 .5 1 2 3 4 5 Miles 3/8" = 1 Mile

January 1992

Management Area 6 - BLACK JACK

County ---------- Lassen
Ranger District ---------- Hat Creek
Acreage ----- National Forest ---------- 30,100
Other ---------- 31,996

A. DESCRIPTION

Location The Black Jack Management Area is on the eastern edge of the Hat Creek Ranger Distnct It is bounded on the north by the National Forest boundary, on the east and south by the Eagle Lake Ranger Distnct, and on the west by Blacks Ridge and the base of Blacks Mountain Private land extends around the base of Blacks Mountain and throughout the eastern half of the area

Physical Environment Elevations range from 4,400 feet in the north to 7,286 feet on Blacks Mountain. The terrain is dominated by the gentle slopes of Blacks Mountain in the west and Blacks Ridge in the north The area generally drains northerly to the Pit River and contains several creeks, small intermittent lakes, and reservoirs Precipitation averages 22 inches annually, usually occurring as snow dunng November through March Soils have developed on an older basalt landscape The forest soils are often rocky The soils of the valleys are deep black clays and other alluvial soils, and the numerous sagebrush flats are the result of shallow clay soils overlying hardpans

Biological Environment The vegetation is predominantly eastside pine type forest with juniper and sagebrush along the northern border Mixed conifer and true fir stands are found on the upper slopes of Blacks Mountain Fuel loads in forested areas range from light to moderate The majority of the slash on National Forest land has been treated, but slash remains heavy and untreated on adjacent private lands Lightning causes about three to five fires per year, usually under one acre in size Human-caused fires are rare The area includes wildlife habitat typical of eastside pine Bald eagles have histoncally nested near Big Jacks Lake, but no current use in known The area is very important to antelope, osprey, sandhill cranes, and waterfowl Goshawks inhabit the scattered old growth pine stands Prehistorical sites are frequently located adjacent to meadows and stream courses Blacks Mountain has religious significance to Native Americans

Management Timber is being intensively managed both on public and pnvate lands The area is used for firewood gathering by Little Valley and Pittvllle residents. It is also important for cattle grazing and includes parts of the Bear Valley, Willow Spnngs and Dixie Range Allotments Dispersed recreation occurs primarily dunng hunting season

Facilities The area is crossed by many Forest roads. Two portions of the area have been subject to geothermal lease application, and two others have been subject to oil and gas lease application

B. STANDARDSAND GUIDELINES

Lands

1 Provlde for a Forest Service microwave link on Blacks Mountain

Sensitive Plants

1 Inventory for stoloniferous pussy-toes ***(Antennaria flagellaris)*** in low sagebrush areas

2 Inventory for Modoc County knotweed (*Polygonum polygaloides spp esotericum*) in adobe flat and dry pond basin areas

Wildlife

1. Manage grazing **to** protect the integnty of waterfowlnesting on developedwetland sites

2 Obtain water nghts and develop Long Valley for waterfowl production.

3. Provlde "high" habitat capability levels of snags around wetlands for ripanan and snag dependent species

4. Manage to enhance bald eagle habitat at Big Jacks Lake

5 Enhance habitat for pronghorn antelope through manipulating vegetation, developing waterholes, and limiting road density

6 Develop sandhill crane habitat where feasible.

C. PRESCRIPTIONALLOCATION

Prescription		Acres
A	Non-Timber Wildlife	1,200
B	Range-Wildlife	5,220
E	Early Successional	200
F	Riparian/Fish	1,580
K	Rocky/Sparse Timber	13,500
L	Late Seral	400
T	Timber	8,000
	Total	30,100

D. WILDLIFE HABITAT ALLOCATIONS

Bald Eagle Temtones	i
Goshawk Territones	4

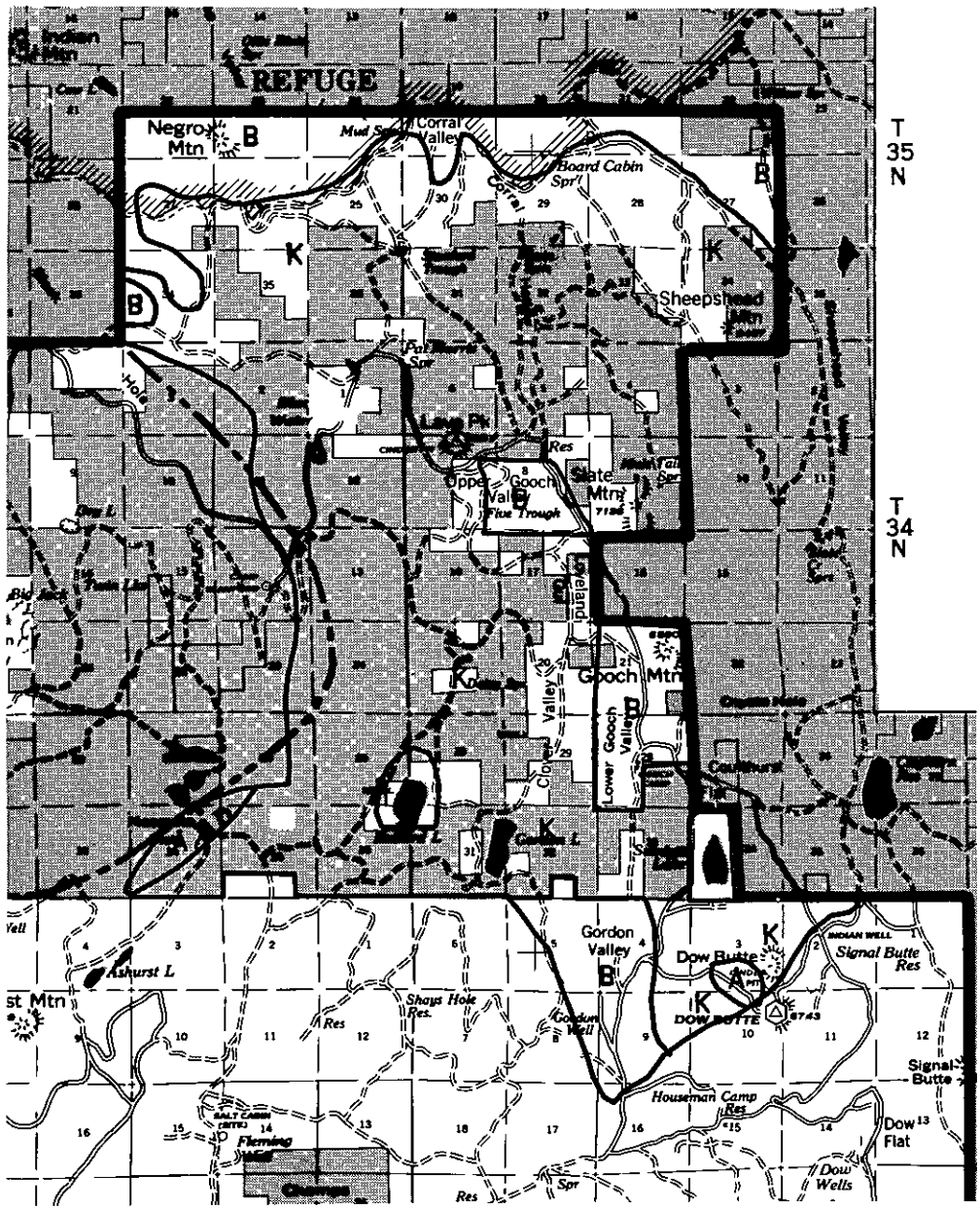
Other Emphasis Species: Osprey, hairy woodpecker, mallard, sandhill cranes, pronghorn antelope, bass

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	5
Montane Shrub	1
Sagebrush	90
Conifer Forest	
Eastside Pine	1035
Mixed	390
Red Fir	0

F. RANGEALLOTMENT STRATEGIES

Allotment	Strategy
Bear Valley (50%)	D
Dixie Valley (>95%)	D
Willow Springs (10%)	D



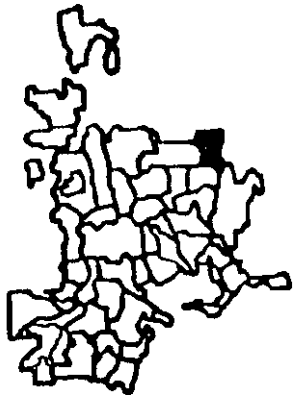
7 Management Area
GOOCH

Scale

0 .5 1 2 3 4 5 **Miles** 1/21 = 1 Mile

January 1992

Management Area 7 - GOOCH



County ---------- Lassen
Ranger District ---------- Eagle Lake
Acreage ----- National Forest ---------- 15,260
Other ---------- 15,286

A. DESCRIPTION

Location The Gooch Management Area is in the northeast corner of the Forest The boundary between the Hat Creek and Eagle Lake Ranger Distncts forms the western edge of the area Although National Forest and pnvate ownership is intermixed, National Forest ownership is dominant in the north and east

Physical Environment The area is part of the gently rolling Modoc Plateau Elevations range from 5,800 feet up to 7,136 feet at Slate Mountain. Annual precipitation, as low as 16 inches in some areas, averages 19 inches Soils are generally very rocky and moderately productive, meadows have deep alluvial soil

Biological Environment Of the three wetlands in the area, two have been developed for waterfowl production No significant creeks are present. Vegetation consists of mixed conifer, eastside pine, brushfield, and grass-sage communities Sagebrush flats are intermingled with forested islands Large areas of noncommercial forest land are sparsely stocked with scattered pine and juniper. In forested areas, fuel loads are moderate to heavy as a result of loggmg and precommercial thinning. Although several large fires burned here in the 1940's and 1950's, only ten small fires, mostly lightning-caused, have occurred in the past ten years. Habitat for mule deer, pronghorn antelope, sandhill cranes, mallard, goshawk, pileated woodpecker, and hald eagles is present The southeast corner of the Hayden Hill State Game Refuge is within the area Prehistorical and histoncal cultural sites are numerous.

Management Many of the area's larger-sized trees have been harvested. Over 1,000 acres of eastside pine have been precommercially thinned The Gooch Valley Range Allotment and slivers of the North Eagle Lake and Champs Flat Range Allotments provide cattle grazing in the area Deer hunting is substantial in the fall

Facilities Several oil and gas lease applications have been filed for lands in the area Existing cinder pits lie atop Dow Butte and Lava Peak The area is accessed by Forest roads, since it is located several miles west of State Highway 139.

B. STANDARDS AND GUIDELINES

Lands

1 Acquire lands to allow the development of additional waterfowl nesting habitat

Sensitive Plants

1 Inventory for stoloniferous pussy-toes *(Antennaria flagellaris)* in low sagebrush areas.

2 Inventory for Modoc County knotweed *(Polygonum polygaloides spp esotericum)* in adobe flat and dry pond basin areas

Wildlife

1 Encourage waterfowl production at Summit and Bullard Lakes, and modify livestock grazing to maintain the integrity of developed wetlands

2 Protect and enhance nesting habitat for sandhill cranes

3 Provlde, at a minimum, "medium" habitat capability for deer summer range

C. PRESCRIPTION ALLOCATION

Prescnption		Acres
A	Non-Timber Wildlife	1,200
B	Range-Wildlife	6,960
E	Early Successional	100
F	Riparian/Fish	100
K	Rocky/Sparse Timber	6,900
	Total	15,260

D. WILDLIFE HABITAT ALLOCATIONS

Goshawk Territories I

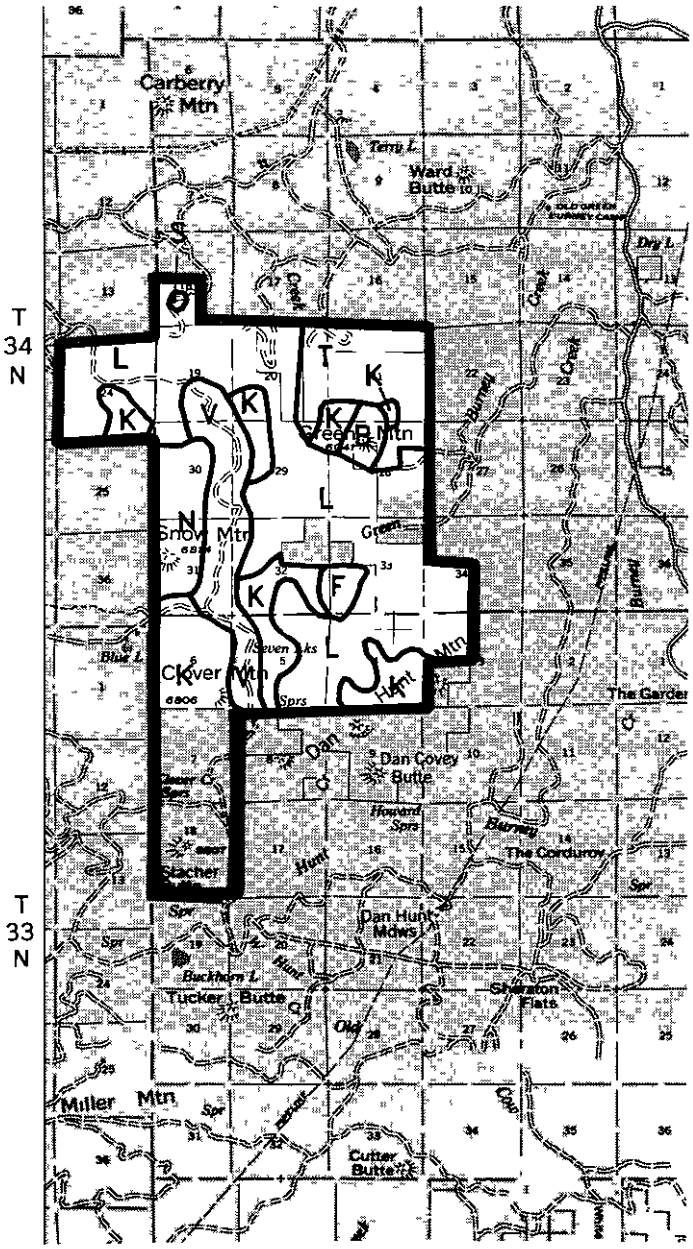
Other Emphasis Species Deer (summer range), mallard, sandhill crane, pronghorn antelope, fisher

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	0
Sagebrush	110
Conifer Forest	
Eastside Pine	440
Mixed	40
Red Fir	0

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Champs Flat (<5%)	D
Gooch Valley (100%)	D
North Eagle Lake (15%)	D



8 Management Area
SNOW MOUNTAIN

Scale

0 .5 1 2 3 4 5 Miles 1/2" = 1 Mile

January 1992

Management Area 8 - SNOW MOUNTAIN

County ---------- Shasta
Ranger District ---------- Hat Creek
Acreage ----- National Forest ---------- 7,670
Other ---------- 1,052

A. DESCRIPTION

Location The Snow Mountain Management Area is an isolated block on the west side of the Forest surrounded by pnvate timber company lands. It consists of a group of mountain peaks (Snow, Clover, and Green Mountains) that form the headwaters for many streams Hatchet, Green Bumey, Montgomery, Cedar, and Little Cow Creeks

Physical Environment Elevations range from 4,600 feet to 6,814 feet on Snow Mountain Slopes are steep and unstable in many places, accelerated surface erosion and mass wasting can be a problem if soil disturbance is excessive The streams that flow from the area are good fisheries; several are heavily used for domestic purposes downstream Annual precipitation is high, averagmg 79 inches with a little over half falling as snow. The soils are derived from andesite and are very productive in the timbered areas

Biological Environment The vegetation changes from a sub-alpine type around the small glacial lakes to mixed conifer on the lower slopes. The timber site is very good and contributes a significant portion of the District's potential timber yield. Existing fuels in the forested areas are pnmarily natural accumulations, and loads vary widely from moderate to extreme Fires have been few in the past, all were lightning-caused The timber on public land is essentially untouched Wildlife species that inhabit the Snow Mountain country are marten, mountain lion, black bear, and possibly wolverine The area is suitable spotted owl habitat and is an important fawning ground for black-tailed deer Fisheries on Green Burney and Hatchet Creeks have small populations of brook and rainbow trout Numerous small lakes near Snow Mountain were historically used by Native Americans for religious purposes

Management This management area is primanly managed for spotted owl, marten, and fisher habitat Timber harvest will occur only if it is determined to be compatible with habitat for these species. Marten and fisher habitat management areas have not been placed on the management area map pending field verification

Recreation use for hiking, hunting, and camping is concentrated around Seven Lakes and in the higher country

Facilities The area lies several miles south of State Highway 299 and does not have good access Currently, only one old road built during CCC days goes through the area Geothermal, and oil, and gas lease applications have been filed on most of the area, but no leases have been issued

Special Areas One small stand of old growth trees is established as a special interest area, the Montgomery Creek Grove Botanical Area

B. STANDARDS AND GUIDELINES

Cultural Resources

1 Protect the cultural features of Snow Mountain and Dan Hunt Mountain

Facilities

1 Obliterate the Blue Lake access road

Fish

1 In cooperation with California Department of Fish and Game evaluate the opportunity to stock Seven Lakes with grayling

Geology

1 Consider geologic instability in all management activities and prescnptions

Lands

1 Maintain the management area in public ownership

Minerals

1. Recommend withdrawal of the Montgomery Creek Grove Special Interest Area from mineral entry and mineral leasing

Recreation

1 Construct a trail to provide access to the semi-primitive non-motorized (SPNM) area

2 Close any existing motorized access routes in Semi-Pnmitive Non-Motonzed areas to motorized public use

Sensitive Plants

1 Inventory for Salmon Mountains wakerobin (*Trillium* **ovatum** *spp oettingeri)* in moist drainages

Special Areas

1 Prepare and implement a plan for the Montgomery Creek Grove Special Interest Area to protect the botanical area's distinctive qualities

Wildlife

1. Regenerate decadent brushfields to improve summer deer habitat

2 Provlde "high" habitat capability for martens, fishers, pileated woodpeckers and spotted owls

C. PRESCRIPTION ALLOCATION

Prescnption		Acres
B	Range-Wildlife	200
F	Riparian/Fish	100
K	Rocky/Sparse Timber	1,700
L	Late Successional	3,470
N	Semi-Pnmitive Non-Motonzed	700
S	Special Areas	20
T	Timber	600
V	View/Timber	880
	Total	7,670

D. WILDLIFE HABITAT ALLOCATIONS

Marten HMA	2
Fisher HMA	1
Spotted Owl Habitat Areas	2
Goshawk Territories	1

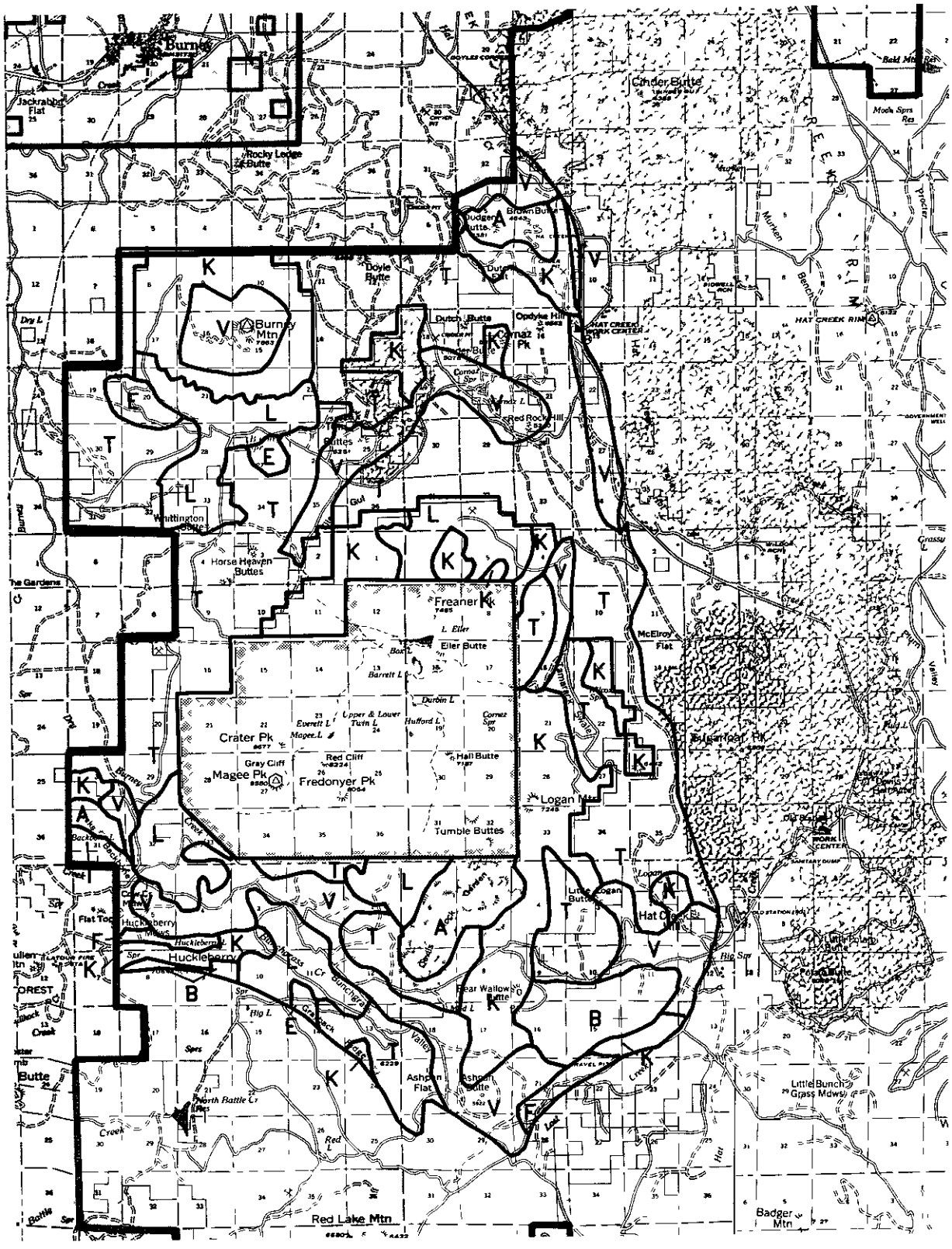
Other Emphasis Species. Pileated woodpecker, and rainbow trout

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	0
Montane Shrub	3
Sagebrush	0
Conifer Forest	
Eastside Pine	0
Mixed	*290*
Red Fir	30

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
None	



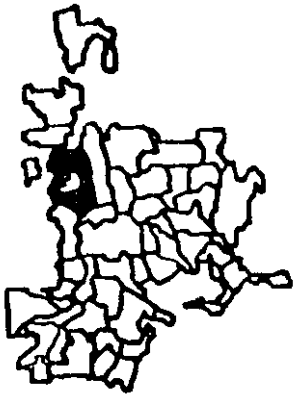
9 Management Area
LOGAN

Scale

0 .5 1 2 3 4 5 Miles 3/8" = 1 Mile

January 1992

Management Area 9 - LOGAN



County ---------- Shasta
Ranger District ---------- Hat Creek
Acreage ----- National Forest ---------- 49,850
Other ---------- 22,416

A. DESCRIPTION

Location The Logan Management Area is south of Burney It is bounded by the National Forest boundary on the north and west, by Highway **89** on the east, and by Grayback Ridge on the south. It completely surrounds the Thousand Lakes Wilderness Pnvate land is generally concentrated in the north and west sides of the area.

Physical Environment Elevations range from **3,200** feet along Highway **89** to **7,863** feet on Burney Mountain The volcanic landforms are dominated by Burney Mountain and the slopes adjacent to the wilderness Topography is not severe except for occasional steep slopes up to 60 percent such as on Wilcox Peak Although there are few perennial streams (Bunchgrass Creek and Cow Creek), internal drainage forms intermittent lakes such as Logan Lake, Cornaz Lake, and Mud Lake. Precipitation averages **43** inches, varying significantly from **30** inches at the lower elevations to **50** inches in the south, falling primarily as snow above **4,000** feet Soils vary widely from deep, productive soil to glacial sediment to rocky lava flows. Most soils are stony. A few cinder cones occur in this area

Biological Environment Vegetative cover vanes from eastside pine type in the northeast corner to mixed conifer, red fir, and lodgepole pine at the higher elevations. Mixed conifer stands interspersed with brush fields occur throughout the area. Most of the brushfields have been cleared and planted to ponderosa and Jeffrey pine. Much of the area has generally heavy fuel loads Slash has been adequately treated except in true fir stands where a significant problem still exists On the interspersed pnvate land, fuels have not been treated after loggmg and loads are heavy to extreme Lightning starts about five to eight fires annually, they are typically low intensity and under one acre in size. Human-caused fires are rare Wildlife habitat is diverse Spotted owls, goshawks, osprey, pileated woodpeckers, fisher, and marten potentially occur within the area Burney Mountain and other prominent peaks have spiritual significance to the local Native Amencans

Management Intensive timber production is the principal activlty on both National Forest and private land The area also includes portions of the Hat Creek, Burney Spnngs and Magee Peak Range Allotments Residents of Burney and Hat Creek valley use the area for firewood cutting. Dispersed camping is heavy during hunting season The area is used to access the four trailheads into the Thousand Lakes Wilderness

Facilities The Ashpan Snowmobile Park along Highway **89/44** in the southeast end of the area was completed in **1981** and receives significant mnter use It is linked to an extensive road system in both this and the Red Management Area The area is accessed by Highway 89/44 and many Forest Servlce roads Geothermal lease applications have been made for two parts of the area, but no leases have been issued

B. STANDARDSAND GUIDELINES

Firewood

1 Give personal use of firewood priority over commercial use in the northern half of the Management Area

Lands

1. Acquire inholdings containing riparian habitat

Recreation

1. Continue designation of trails and restrict snowplowing of snowmobile trails for timber sales between December 1 and April 1

2. Develop new trailheads for the Cypress and Tamarack trails.

3 Manage the undeveloped camping areas at Burney Springs, Tamarack Swale, and Logan Lake as dispersed campsites

Sensitive Plants

1. Inventory **for** long-haired star tulip (*Calochortus longibarbatus*) in meadow areas

Soils

1 Prohibit tractor logging on cinder cone slopes steeper than 20 percent

Visual Resources

1 Meet a visual quality objective of Partial Retention in the foreground of Forest Roads 16 and 26, and require extensive slash cleanup for new timber sales

2. Meet a visual quality objective of Partial Retention in the background as seen from the Thousand Lakes Wilderness looking south, Highway **44** on Hat Creek Rim, and Lassen Volcanic National Park

3 Meet a visual quality objective of Partial Retention in the foreground of the Tamarack Trail access road

Wildlife

1 Regenerate decadent brushfields to improve summer range for the Cow Creek deer herd

2 Where feasible, develop wetlands to increase waterfowl production and provide habitat for fall migrants

C. PRESCRIPTION ALLOCATION

Prescription		Acres
A	Non-Timber Wildlife	3,100
B	Range-Wildlife	2,700
D	Developed Recreation	10
E	Early Successional	800
F	Riparian/Fish	350
K	Rocky/Sparse Timber	14,230
L	Late Successional	10,300
T	Timber	8,900
V	View/Timber	9,360
Z	Minimal Management	100
	Total	49,850

D. WILDLIFE HABITAT ALLOCATIONS

Fisher HMA	1
Marten HMA	5
Spotted Owl Habitat Areas	6
Goshawk Territories	7

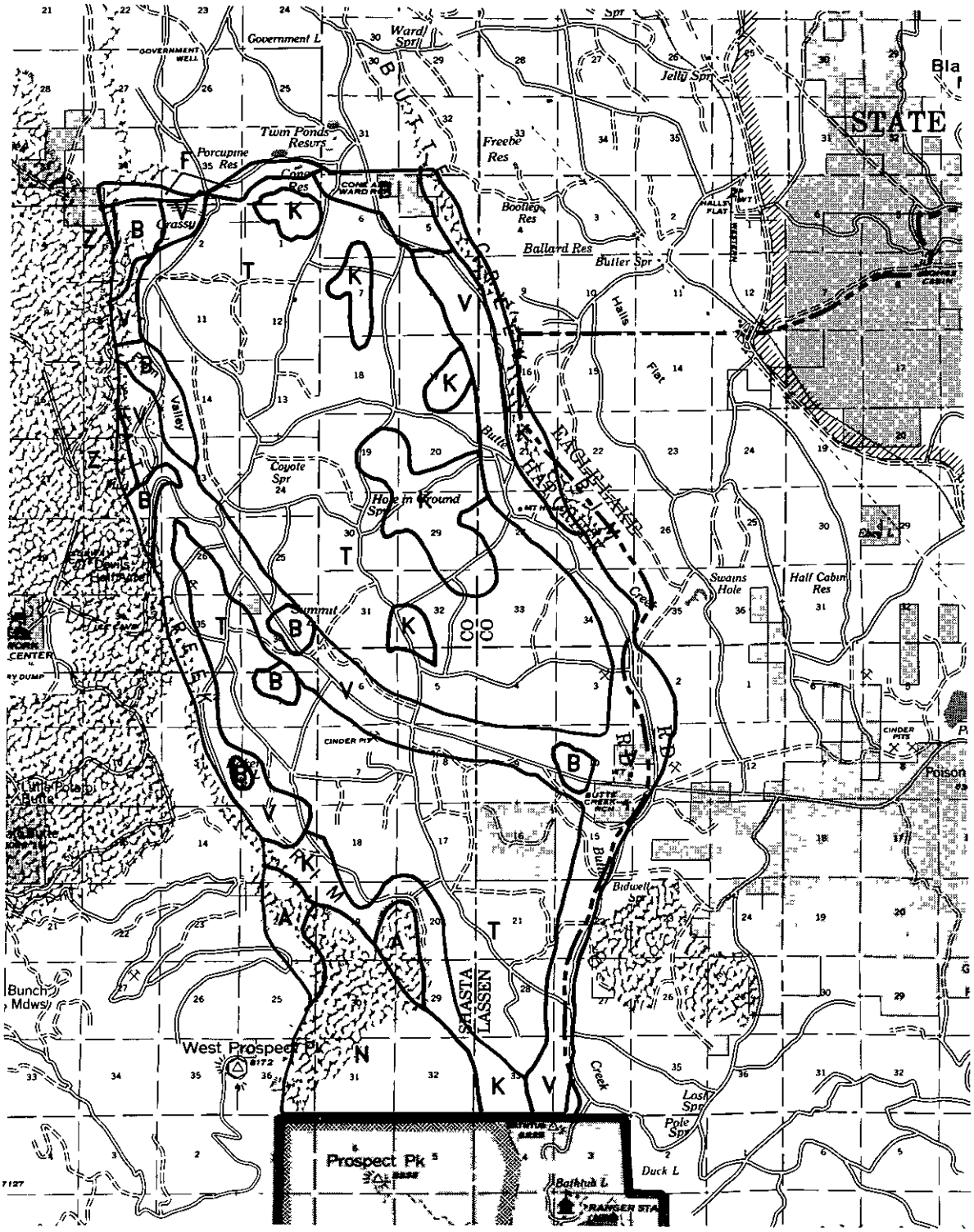
Other Emphasis Species Osprey, pileated woodpecker

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	30
Montane Shrub	120
Sagebrush	2
Conifer Forest	
Eastside Pine	40
Mixed	1695
Red Fir	240

F. RANGE ALLOTMENT STRATEGIES

Allotment	Strategy
Burney Springs (100%)	A
Hat Creek (25%)	C
Magee Peak (100%)	A



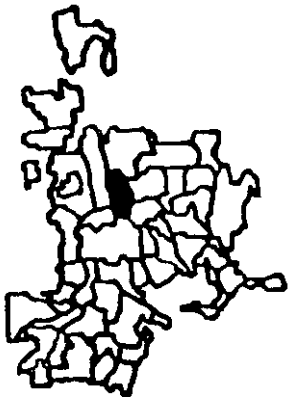
10 Management Area
SUMMIT

Scale

0 .5 1 2 3 4 5 Miles 1/2" = 1 Mile

January 1992

Management Area 10 - SUMMIT



County ---------- Shasta, Lassen
Ranger District ---------- Hat Creek
Acreage ----- National Forest ---------- 38,125
---------- Other ---------- 1,161

A. DESCRIPTION

Location The Summit Management Area is bounded by Lassen Volcanic National Park on the south, Hat Creek Rim on the west, Butte Creek Rim and the Eagle Lake Ranger District boundary on the east, and a minor road on the north The private land is in scattered parcels

Physical Environment The elevations range from 4,900 feet in the north to 7,400 feet in the south on the slopes of Prospect Peak, however, most of the area is quite flat with an average elevation of about 5,000 feet No perennial streams occur Precipitation averages 24 inches a year, pnmarily in the form of snow dunng November through March The forest soils are relatively deep, with small meadows found on alluvial soils A few cinder cones occur in this area

Biological Environment Vegetation is generally eastside pine type with mixed conifer stands at higher elevations Fuel loads are quite variable, from light to heavy. Most of the loggmg slash has been adequately treated Lightning fires occur at a rate of two or three per year, but average less than one acre per year Important summer range exists for mule deer and pronghorn antelope Wildlife is typical of that common to eastside pine and mixed conifer areas Goshawk, osprey, and hairy woodpecker are important emphasis species present Several historic homestead sites are found in the area, two of which are still in use — Butte Creek Ranch, and Cone and Ward Ranch An old sheepherder cabin is still intact at Mountain Home

Management The principal management activities are timber production and cattle grazing Portions of the Butte Creek, Coyote, and Poison Lake Range Allotments are included Firewood cutting is common throughout Considerable dispersed recreation occurs dunng the deer hunting season

Facilities The Pacific Crest National Scenic Trail follows Hat Creek Rim along the western edge of the area Highway 44 bisects the area and is a major travel corridor The Butte Creek Road borders the southwest edge of the area and is the access route to Butte Lake Campground in the National Park. A small portion of the area has been subject to oil and gas lease application, but no leases have been issued

B. STANDARDS AND GUIDELINES

Cultural Resources

1 Maintain the Mountain Home Sheepherder Cabin as a standing ruin

Recreation

1 Manage the undeveloped camping areas along Butte Creek and at Bidwell Spnngs as dispersed campsites

Sensitive Plants

1 Inventory for talus collomia (*Collomia debilis var larsenii*) on rocky slopes near Prospect Peak

2 Monitor and protect Boggs Lake hedge-hyssop ***(Gratzola heterosepala)*** at Grassy Lake Inventory for additional populations in vernal pool type habitats

Soils

1. Prohibit tractorloggmgon cinderconeslopes steeper than 20 percent.

Visual Resources

1 Meet a vlsual quality objective of Partial Retention in the foreground of the Pacific Crest National Scenic Trail Maintain adequate shade.

2 Meet a vlsual quality objective of Retention in the foreground of the Butte Creek Road

Wildlife

1 Regenerate the aspen stands along Butte Creek

2 Develop wetlands where feasible to increase waterfowl production and provide habitat for fall migrants, maintain and improve existing developed wetlands

3. Enhance habitat for pronghorn antelope through manipulating vegetation, developing water, and limiting road density.

C. PRESCRIPTION ALLOCATION

Prescription		Acres
A	Non-Timber Wildlife	600
B	Range-Wildlife	**3,440**
D	Developed Recreation	5
E	Early Successional	**200**
F	Riparian/Fish	100
K	Rocky/Sparse Timber	5,400
L	Late Successional	230
N	Semi-Primitive Non-Motonzed	**2,800**
T	Timber	**16,340**
V	View/Timber	**9,010**
	Total	**38,125**

D. WILDLIFE HABITAT ALLOCATIONS

Goshawk Terntories **2**

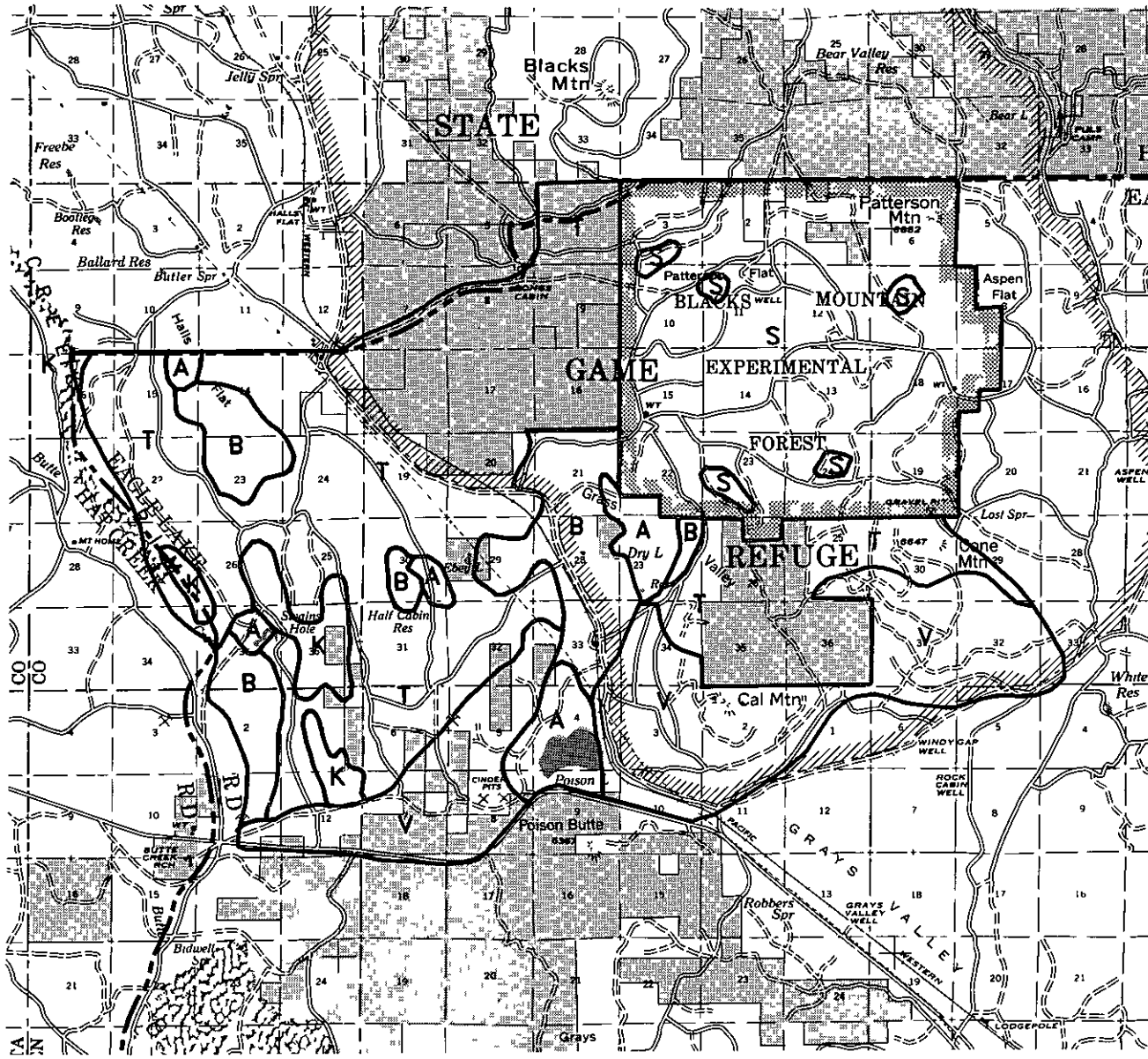
Other Emphasis Species: Osprey, deer (summer range), hairy woodpecker, pronghorn antelope.

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	10
Montane Shrub	0
Sagebrush	**30**
Conifer Forest	
Eastside Pine	**2,115**
Mixed	**520**
Red Fir	**0**

F. RANGEALLOTMENT STRATEGIES

Allotment	Strategy
Butte Creek (75%)	D
Coyote Spnngs (100%)	D
Poison Lake (25%)	D



11 Management Area
EBEY

Scale

0 .5 1 2 3 4 5 Miles 1/2" = 1 Mile

January 1992

Management Area 11 - EBEY

County ---------- Lassen
Ranger District ---------- Eagle Lake
Acreage ----- National Forest ---------- 32,780
Other ---------- 6,720

A. DESCRIPTION

Location The Ebey Management Area is in the northwest corner of the Eagle Lake Ranger District, adjoining the Hat Creek Ranger District State Highway 44 is the area's southern boundary A large tract of private land lies in the central portion. Poison Lake is a major landmark

Physical Environment Topography is flat to gently sloping in the west. Cal, Cone, and Patterson Mountains in the east have moderate slopes Elevations range from 5,400 feet to 6,682 feet on Patterson Mountain Precipitation averages 26 inches a year. Bedrock consists of basalt lava flows. Residual soil and ash overlie the bedrock, although exposed bedrock and loose boulders are common. A few cinder cones occur in this area The western area drains into Butte Creek.

Biological Environment Major forest types are eastside pine and mured conifer Grass-sage communities are on the dry flats, and marsh-meadow vegetation is in the wetlands Fuel loads in forested areas are moderate, except for some logged areas with heavy loads. Blacks Mountain Experimental Forest has some extreme fuel loadings. Scars remain from large wildfires in the 1920's and 1940's on Cal and Cone Mountains; hundreds of acres are now pine plantations, and many are being invaded by brush Some brush-grasslands are being succeeded by pine. An average of three small fires burn each year, and most are caused by lightmng. Poison Lake and other wetlands have been developed for waterfowl production. Bald eagles frequent Poison Lake, but no nests are known. Harvest species are mule deer, black-tailed deer, pronghorn antelope, and waterfowl. A portion of the Blacks Mountain State Game Refuge (Refuge 1-F) is in the area. Habitat for goshawk, pileated woodpecker, sandhill crane, and red fox is also present An ethnographic site is near Poison Lake Blacks Mountain has religious significance for Native Amencans.

Management Overstory removal and intermediate cuts have harvested many of the larger trees over much of the area. Cattle graze the sagebrush flats in the Poison Lake and Grays Valley Range Allotments Recreation use is light The 10,252-acre Blacks Mountain Experimental Forest, established in 1934 for study of the intenor ponderosa pine forest type, is in the area. Therein, 521 acres constitute the Blacks Mountain Research Natural Area

Facilities The historic Lassen and Nobles trails traverse the area Cinders are regularly quarned from several Forest Service pits in the area, and geothermal lease applications for exploration have been filed Lassen County Road 111 and Forest roads access the area The Union Pacific Railroad traverses the area

B. STANDARDS AND GUIDELINES

Fire/Fuels

1 Give high priority to **fuel** and fire management in and adjacent to the Blacks Mountain Expenmental Forest

Minerals

1 Manage the Jeskey and Poison Cinder Pits to reduce visual impacts as seen from Highway 44

Sensitive Plants

1 Monitor and protect Egg Lake monkeyflower (*Mimulus pygmaeus)* at Swains Hole and inventory for additional populations in seasonally wet areas

Soils

1. Restrict tractor loggmg on cinder cone slopes steeper than 20 percent

Wildlife

1. Provide "high" habitat capability for pronghorn antelope through seeding, planting, and coordmating other resource-use activities.

2. Encourage waterfowl and sandhill crane production at developed wetlands through structural improvements and modification of grazing systems.

3. Investigate the potential for developing wetlands throughout the area, and implement wetland development projects as appropriate.

4. Protect and enhance nesting habitat capability for bald eagles at Poison Lake. Close the area to vehicles during the nesting season as needed to protect the eagles

C. PRESCRIPTIONALLOCATION

Prescription		Acres
A	Non-Timber Wildlife	1,500
B	Range-Wildlife	4,230
E	Early Successional	200
F	Riparian/Fish	200
K	Rocky/Sparse Timber	1,700
S	Special Areas	10,600
T	Timber	8,700
V	View/Timber	5,650
	Total	32,780

D. WILDLIFE HABITAT ALLOCATIONS

Goshawk Territones 2

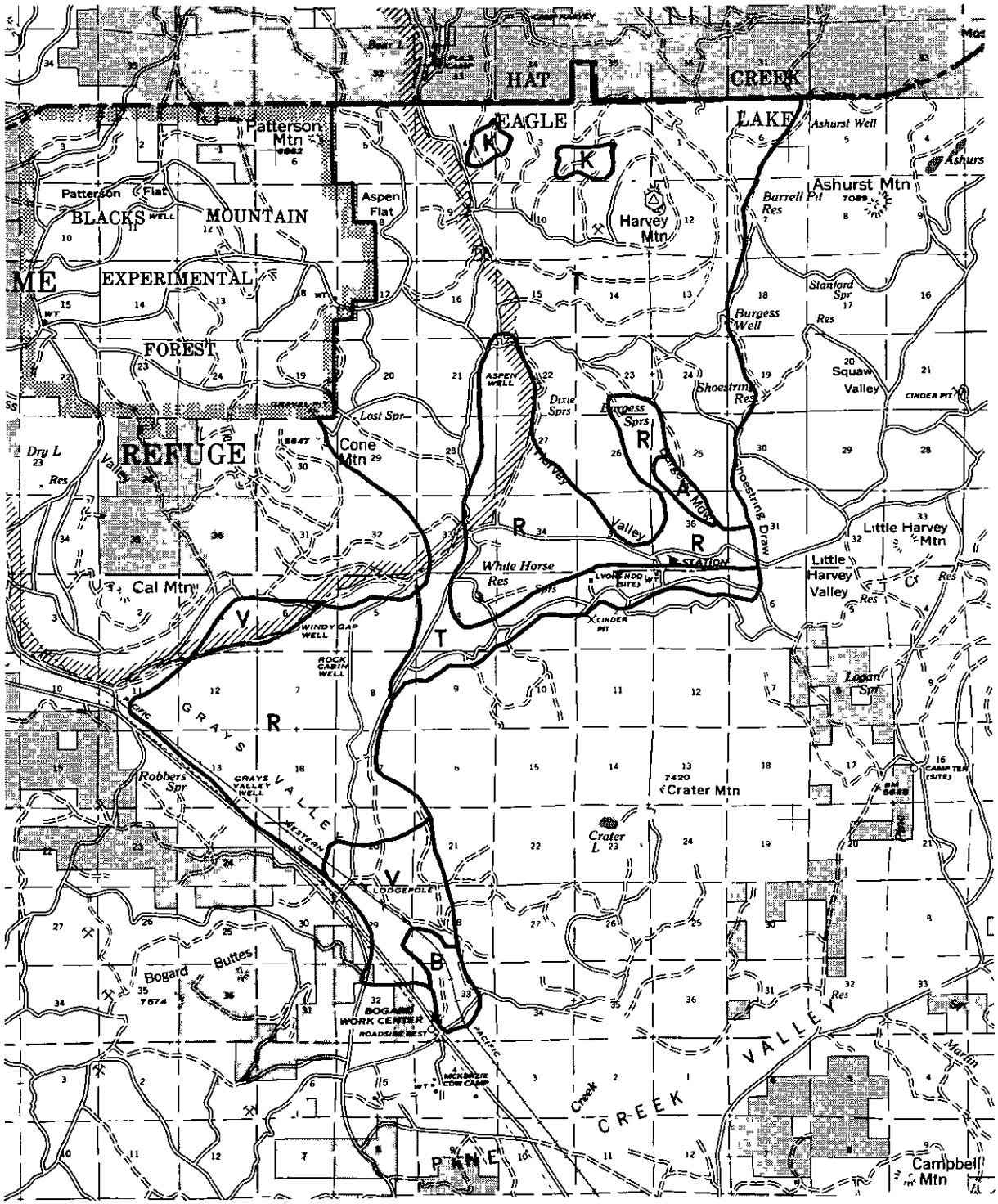
Other Emphasis Species. Deer (summer range), mallard, bufflehead, sandhill crane, pronghorn antelope, bass, red fox, pileated woodpecker.

E. DESIRED STATE FOR DIVERSITY

Vegetation	Acres
Shrub	
Chaparral	2
Montane Brush	0
Sagebrush	150
Conifer Forest	
Eastside Pine	1,000
Mixed Conifer	240
Red Fir	0

F. RANGEALLOTMENT STRATEGIES

Allotment	Strategy
Grays Valley (25%)	D
Poison Lake (50%)	D



12 Management Area
HARVEY

Scale

0 .5 1 2 3 4 5 Miles 1/2" = 1 Mile

January 1992