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**Pacific
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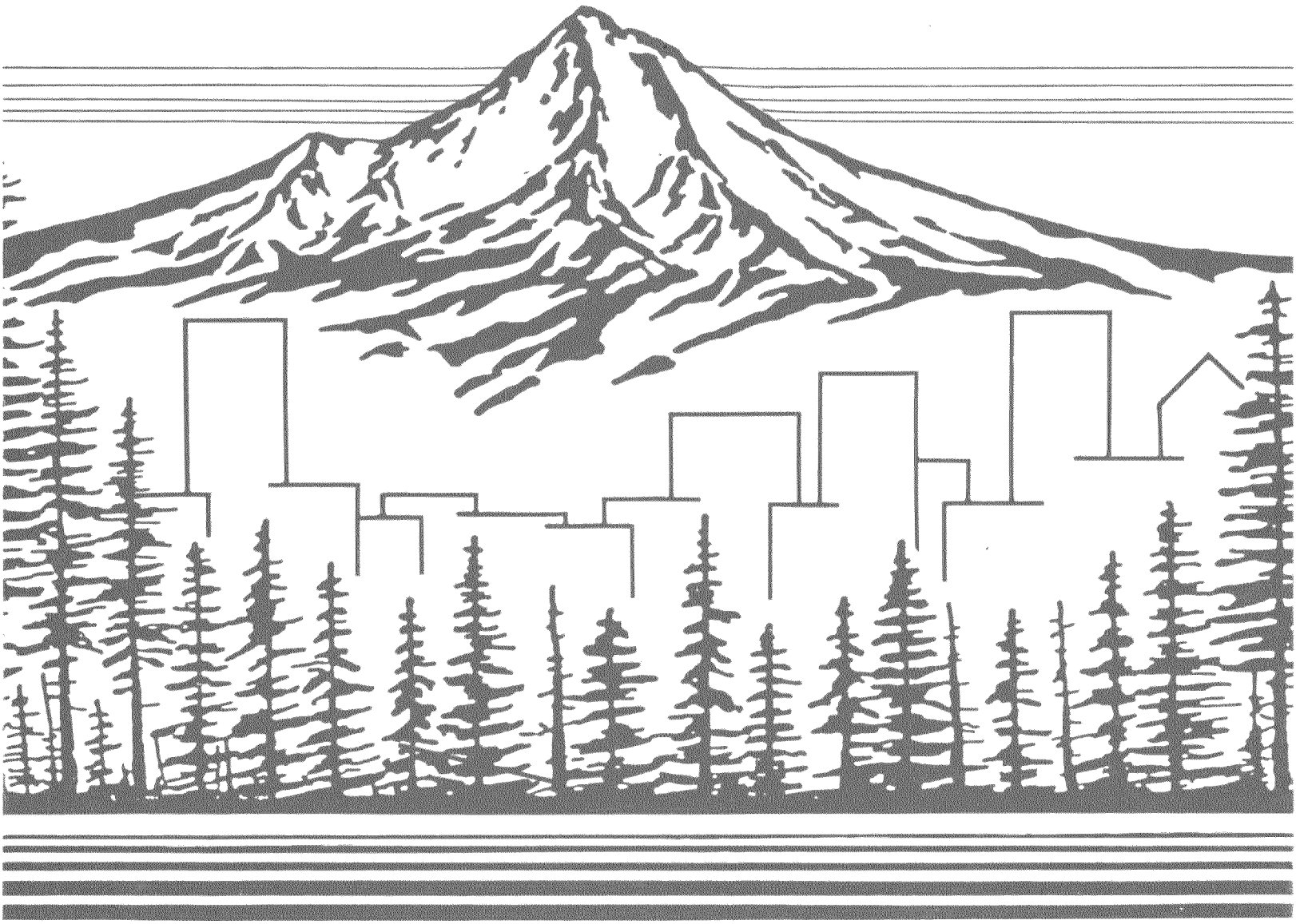
Region**

1988

Proposed Land and Resource Management Plan

Mt. Hood National Forest



PROPOSED FOREST LAND AND RESOURCE MANAGEMENT PLAN

Mt. Hood National Forest

PREFACE

This Proposed Forest Land and Resource Management Plan, from now on referred to as **This proposed Forest Plan, The Forest Plan or the Plan**, has been developed to direct the management activities of the Mt. Hood National Forest. The development of The Forest Plan has been in compliance with Secretary of Agriculture regulations, 36 CFR 219. These regulations are based on the Forest and Rangeland Renewable Resources Planning Act (RPA) as amended by the National Forest Management Act of 1976 (NFMA).

This proposed Forest Plan is considered a major federal action significantly affecting the quality of the human environment. Therefore, a detailed Draft Environmental Impact Statement (DEIS) has been prepared as required by the National Environmental Policy Act of 1969 (NEPA). The Plan has been designed to implement the preferred alternative, identified as Alternative E in the DEIS. The goal of the Plan is to provide a complete program for the management of the Forest incorporating a mixture of management activities. The Plan includes three specific sub-objectives: provide for the public use and protection of the Forest's resources; address the issues and concerns expressed by the public, community officials, state, regional, and national agencies; and comply with all legislative requirements. To attain these goals, the Forest Plan:

- Establishes the management direction and associated long-range objectives for the Forest for the next 10 to 15 years.
- Specifies the standards, prescriptions, and the approximate timing and vicinity of the actions needed to implement management direction.
- Establishes monitoring and evaluation requirements needed to: (a) make sure the established management direction is being carried out, and (b) determine the accuracy with which outputs and effects were predicted.

Additional information about this proposed Forest Plan is available from:

Forest Supervisor
Mt. Hood National Forest
2955 NW Division Street
Gresham OR 97030
Phone: (503) 666-0700

If any particular provision of this Plan or its application to any person or circumstances is declared invalid, the remainder of the Plan, and the application of any invalid provision to other persons or circumstances, shall not be affected.

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CHAPTER ONE

CHAPTER ONE

INTRODUCTION TO THE PROPOSED FOREST LAND AND RESOURCE MANAGEMENT PLAN

I. PURPOSE OF THE FOREST PLAN

This proposed Plan establishes standards for the management of the Mt. Hood National Forest. It provides parameters for all management activities involving natural resources. It describes resource management practices, levels of resource production, and the availability and suitability of Forest lands for resource uses.

The Forest Plan incorporates the provisions of NFMA, implementing regulations, and other guiding instruments. Standards, operational considerations (guidelines), determinations of land uses, and prescriptions are statements of the Plan's management direction. However, the Plan's projections of outputs, services, and rates of implementation are estimates subject to such variables as catastrophic events (fire, insect infestations, etc.), annual budgets, new data (such as inventories), and monitoring.

The Plan establishes the management direction of the Forest for the early decades. It will normally be revised on ten year cycles, or at no more than 15 years.

II. RELATIONSHIP OF THE FOREST PLAN TO OTHER DOCUMENTS

The Plan embodies the preferred alternative, Alternative E from the DEIS, as a complete program for managing the Forest's resources. The Plan was developed following extensive analysis and considerations addressed in the accompanying DEIS. All planning processes and analysis procedures used in developing this Plan have been described or referenced in the DEIS. The DEIS also provides detailed descriptions and evaluations of nine other alternatives considered in the planning process. The Analysis of the Management Situation (AMS) was previously issued in March 1985 and is available at the Mt. Hood National Forest Supervisor's Office. The AMS has also been summarized in Chapter Two of this proposed Plan.

The proposed Plan's management direction are carried out through a variety of activities and projects. The overall environmental impact of the collection of these activities and impacts is addressed in the accompanying DEIS. Environmental analysis at project level will use the data and evaluations contained in the Plan and accompanying DEIS. Documentation of project-level analysis will be tiered to the Final Environmental Impact Statement (FEIS) accompanying the Forest Plan.

A. Regional Guide

The Regional Guide provides direction for national forest plans. To facilitate forest planning, it provides standards and guidelines that address major Public Issues and management concerns considered at the regional level.

B. Special Area Plans

Public Law 95-200 established the basic objectives, policies, and direction for the future management of the Bull Run Watershed Management Unit. This law required the preparation of a land management plan to carry out the intent of the Act. The Bull Run Planning Unit Final Environmental Impact Statement (FEIS) was developed with extensive public involvement and implemented in early 1979. The regulations guiding the development of forest plans state: "If, in a particular case, special area authorities require the preparation of a separate special area plan, the direction in any such plan may be incorporated without modification in plans prepared under this subpart," (36 CFR 219.2 (b)).

The Bull Run area has been managed under the Bull Run Planning Unit FEIS as described for approximately eight years. The Plan has incorporated this FEIS without modification. Revision or amendment of the Plan would include reconsideration of the Bull Run FEIS.

C. Project Plans

The Plan serves as the single land resource management plan for the Mt. Hood National Forest. All other land management plans (i.e. planning unit and multiple use plans) will be replaced by the direction in the Plan upon its adoption. Resource management objectives have been discussed in Chapter Four. Schedules of resource management activities have been provided in the Appendix.

Guidance for the implementation of other management and development activities is provided "under the umbrella" of the Plan. Plans for such projects and activities become, in effect, part of the Management Direction in the Plan. Examples of such plans include:

District Trail Development/Management Plans
Range Allotment Plan
Ski Area Master Plans
Special Interest Area Plans
Noxious Weed Control Plan

For further identification of the disposition of Unit and Resource Plans under the Plan, refer to Chapter Five, Table FIVE-1 and Table I-1, in the accompanying DEIS.

The management direction provided by the Plan comprises the framework within which all project planning and other Forest activities take place. The proposed direction defines management goals and standards which guide project activities toward desired conditions for management areas individually, and collectively for the Forest as a whole. Management direction specifies schedules for project activities and management practices. It provides guidance concerning potential projects and the limitations of those projects, including assumptions about the appropriate vegetation practices for timber sale projects. Project analysis on the site verifies the accuracy of those assumptions and whether they are appropriate.

Within the established standards, projects are developed to accomplish all of the various management objectives with maximum efficiency and effectiveness. All projects must comply with all NEPA requirements. Environmental analyses provide an essential source of information for monitoring all activities and constraints under the Plan.

1. As project analyses are completed, new or emerging Public Issues or management concerns may be identified.

2. The management direction designed to achieve management area goals shall be evaluated by the project analyses.

3. Site-specific data collected for project environmental analyses will make it possible to determine the accuracy of estimated outputs and effects.

All information gathered in the environmental analyses must be used in monitoring the implementation of the Plan to determine what, if any, changes should be made.

III. HOW THE PLAN IS ORGANIZED

The Forest Plan consists of five chapters and appendices:

CHAPTER ONE: Forest Plan Introduction

This chapter describes the purpose of the Plan, summarizes its contents, establishes the subject areas covered, and discusses the relationship of the Plan to other documents.

CHAPTER TWO: Summary of the Analysis of the Management Situation (AMS)

This chapter reviews the existing management situation for each resource. When appropriate, it summarizes the relationships between demand and supply of the Forest's resources.

CHAPTER THREE: Response to Public Issues and Management Concerns

This chapter addresses how the Forest Plan responds to the six Public Issue Groups arising from Public Issues related to the management of the Forest and discusses how the Plan responds to six major planning questions that incorporate management concerns and resource use and development opportunities.

CHAPTER FOUR: Management Direction

Management objectives and standards are established which, taken together, constitute direction for resource management to be implemented under the Plan. This chapter presents the outputs developed under the Plan by resource activity, indicates the budget data necessary to achieve planned goals and summarizes, by resource, the projected management situation under the Plan.

CHAPTER FIVE: Implementation

This chapter explains how management direction must be implemented, how implementation activities are to be monitored and evaluated, and how the plan may be updated.

APPENDICES:

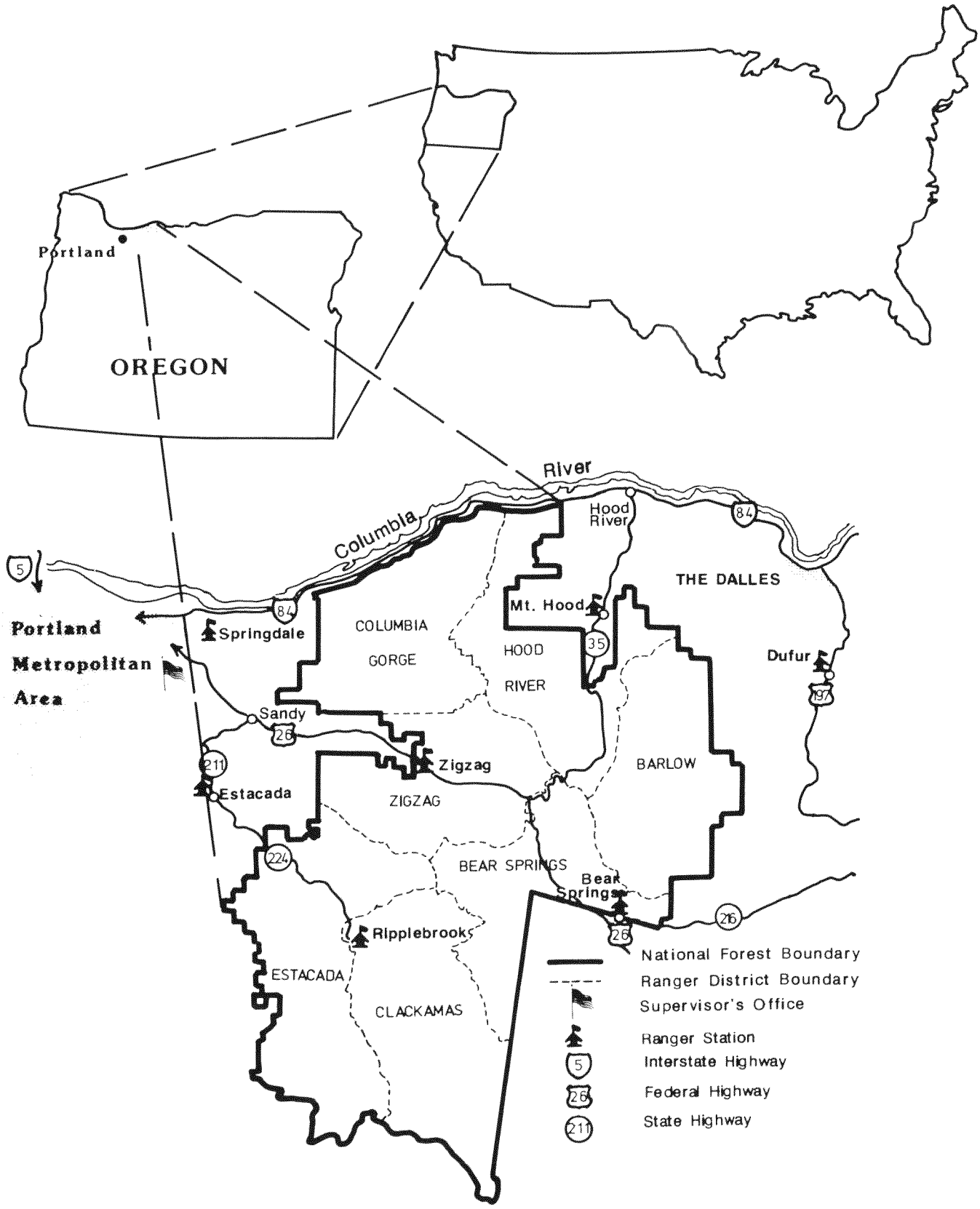
These provide detailed schedules of projected activities, and present specific management plans.

IV. FOREST DESCRIPTION

The Forest lies directly east of the City of Portland and is divided into seven Ranger Districts as shown by the boundaries and headquarters on the accompanying map (Map One-1).

Map ONE-1

MT HOOD NATIONAL FOREST LOCATION MAP



As shown by the map on the previous page, the Forest is bounded on the north by the Columbia River, which also divides Oregon and Washington. Most of the Forest is located in Multnomah, Clackamas, Hood River, and Wasco counties. A small portion adjacent to the Willamette National Forest is in Marion and Jefferson counties. The Warm Springs Indian Reservation is located just outside the southeast border of the Forest. The lands of the Forest total a little more than one million acres, with the largest acreage on the west side of the Cascade Mountain Range.

The Portland Metropolitan Area, with a 1985 population estimated at 1.1 million people, exerts the most significant social and economic influences on the Forest. Living only 50 miles from the Forest, most of Portland's residents can reach its more accessible areas in less than an hour's drive. In contrast to the urbanized counties on the west side of the Forest, Hood River and Wasco counties on the east are sparsely populated and rural. Ranching, farming, and timber are mainstays of these two counties.

Huge expanses of the Forest, especially on the west side, are rugged. Above them all towers majestic Mt. Hood, the tallest peak in Oregon, and one of the tallest in the Northwest. One of many volcanoes in the Cascade Mountain Range, this two-mile-high mountain never loses its cap of snow.

The Pacific side of the Forest is virtually a different climatic and biological world compared to the east side. The climate of the west side's lower areas is mild and wet. Reflecting the climate, plant life is dominated by Douglas-fir trees in dense, cathedral-like stands of old growth, or in open stands carpeted with colorful flowers. The east side is comparatively dry and temperatures are more extreme. Relatively open growths of Ponderosa pine mixed with oak dominate the plant life in this harsher climate.

Bordering the Forest on the north, the Columbia River cuts its way through the Cascade Mountains to form one of the region's most magnificent sights, the Columbia Gorge. Steep rock walls form the face of the Gorge, and streams from high in the Forest tumble down these walls in spectacular waterfalls.

About one-third of the Forest's extensive stands of timber consists of very large trees two-hundred or more years old. In addition to its obvious supply of timber, the Forest contains other resources such as water, fish, wildlife, opportunities for dispersed and developed recreation, and extraordinary scenery. These resources offer a wide range of opportunities and benefits to people of all walks of life.

CHAPTER TWO

CHAPTER TWO

SUMMARY OF THE ANALYSIS OF THE MANAGEMENT SITUATION

I. INTRODUCTION

This chapter briefly summarizes the Analysis of the Management Situation (AMS). It reviews both market and nonmarket resources on the Forest.

Supply estimates used in this section of the Plan are based on maximum physical and biological production of goods and services as published in the Analysis of the Management Situation, March 1985. The production potential for each resource, titled "Supply" in the discussions, is the total amount of goods or services (yields) which could be produced while meeting legal and other minimum requirements. Maximum potentials for all resources cannot be achieved at the same time. When the potential for one resource is maximized, the production of another resource, with few exceptions, would be reduced. For example, the maxiumum production of timber would cause related reductions in unroaded recreation and visual quality.

Demand projections in this section of the Plan are based on a variety of information. Projections necessarily include assessments of future management needs based on historical data, population projections, other agency data, and professional observations.

Chapter Two also includes a brief overview of social and economic situations, along with a summary table of supply conditions.

A section at the end of this chapter identifies the Forest's needs for information, inventory, and research identified through the analysis and development of the DEIS and this Proposed Land and Resource Management Plan for the Forest.

II. SUPPLY/DEMAND NARRATIVES BY RESOURCE

A. **Timber**

1. The existing situation and requirements.

The ability of the Forest to provide timber is limited by a number of important factors, including:

- The amount of area on which timber can be managed.
- The amount of standing timber.
- The rate of growth of new timber stands after harvest.

Approximately 59 percent of the Forest's total lands are tentatively suitable for timber production. In compliance with 36 CFR 219.4, the remaining 41 percent of the acres were determined to not be suitable for timber production. Refer to section IV. of this chapter for suitability determination process.

Non-forested land includes water, lands developed for purposes other than timber production, and land not stocked with at least 10 percent tree cover. Almost all lands adminstratively withdrawn were those designated Wilderness. Other unsuitable lands are those identified either as subject to damage to the site during harvest or incapable of successful regeneration of a new timber stand.

For more detailed information on this process, see Appendix B and the process paper entitled "Determination of Land Not Suitable For Timber Production," Mt. Hood National Forest, July 1984.

The process of screening lands for timber suitablility has created a need to change management direction for those parts of the Forest where timber management has been identified as an unacceptable land use. This is one of a series of changes that have been taking place in the timber land base. The adoption of a new plan will require additional changes. The following data summarize the changes that lead to the suitable land base for the Forest Plan.

Table TWO-1 RECENT CHANGES IN SUITABILITY LAND BASE

	TIMBER MANAGEMENT PLAN LAND BASE		FOREST PLAN LAND BASE	
	M Acres	MMBF/Yr	M Acres	MMBF/Yr
Total National Forest acres	1059		1059	
Unsuitable for timber management	-235		-412	
Tentatively suitable acres	824	500	647	348
Unregulated acres as of 1977 (includes then existing unit plans)	-71			
		1/		
Subtotal	753	442	647	348
Minimum Management Requirements			-39	
Bull Run	-68		-46	
Unit Plans 2/	-29		-37	
High Priority Management Areas			-11	
Land base under Current Direction	656	384	514	268
Adjustment to TM Plan to reflect management intensity		-23		
Reduction in salvage volume included in the TM Potential Yield, but not in the ASQ		-5		
After adjustments: Suitable Acres	656		514	
Comparable ASQ		356		268

1/ The potential yield shown in the TM Plan is 387 MMBF and does not reflect volume from the Bull Run Watershed.

2/ The 29,000 acres corresponding to current management under the TM Plan pertain to Unit Plan adjustments to the TM Plan since 1977. The 37,000 acres corresponding to management under the Forest Plan refer to all Unit Plans before and since 1977. The 11,000 additional acres refer to acres in high priority Management Areas allocated under the Forest Plan.

The volume and major species of trees on the 647,000 acre land base are as follows:

Table TWO-2 ACRES AND VOLUME OF TIMBER BY SPECIES GROUPS

MAJOR SPECIES	ACRES	VOLUME	
Group		Millions of Cubic Feet*	Millions of Board Feet*
Douglas-fir	407,000	2500	12700
True fir	114,000	770	3900
Associated species	111,000	560	2800
Pine/oak	16,000	60	300
All Species	647,000	3,890	19,700

* 1 cubic foot= 5.07 board feet

The Douglas-fir group represents the Western Hemlock Zone and includes western hemlock and red cedar. The True Fir group includes mountain hemlock and Engelmann spruce. It corresponds to the Mountain Hemlock and Pacific Silver Fir Zones. The Associated Species group corresponds to the Grand Fir Zone and includes Douglas-fir, ponderosa pine, and white fir. The Pine/Oak group includes ponderosa pine, Douglas-fir, and Oregon oak. It corresponds to the Ponderosa Pine Zone.

The Forest is primarily composed of older trees. The following data show the proportion of the tentatively suitable timbered acres, 647,900 acres, in several age classes.

Table TWO-3 TIMBER BY AGE CLASS

AGE	ACRES	PERCENT OF TIMBERED LANDS
0- 10 years	57,000	9
20- 60 years	127,000	20
70-120 years	30,000	5
130-190 years	139,000	21
200+ years	255,600	45
All Ages	647,000	100 %
250+ years	212,500	33
260+ years	189,500	3

Although the Forest's supply of mature sawtimber seems relatively abundant, the Analysis of the Management Situation (AMS) has shown that the levels harvested in recent years cannot be maintained indefinitely (refer to information in Appendix B).

If all of the 647,200 tentatively suitable acres could be managed for maximum timber yield, the highest chargeable (green) timber volume sustainable over time would be 68 MMCF per year (348 MMBF per year) during the first decade. This level of production is about 10 percent less than the potential production of 385 MMBF scheduled in the current Timber Management Plan.

The Forest could continue to offer the present volume for sale in the short term because it has large amounts of old growth. However, future harvest levels would need to be reduced.

The Allowable Sale Quantity (ASQ) is composed of two components: (1) chargeable harvest of green trees on suitable land, and (2) chargeable harvest of dead trees on suitable land. Other timber of commercial value could become available in the future but not in assured amounts. Such volume might include, for example, salvage of dead trees on unsuitable land. Total Timber Sale Program Quantity is the sum of chargeable, submerchantable, and "other" timber volume (refer also to Table II-12 in the DEIS).

2. Supply of Timber and Projections in the Four County Influence Area.

Refer to presentation of projected timber output under the Forest Plan found in Chapter Four. Also refer to the Communities discussion in Chapter III of the accompanying DEIS.

3. Demand for timber.

Demand can be analyzed in relation to any particular national forest from three points of view: national, regional, and local.

National: The Forest and Rangeland Renewable Resources Planning Act (RPA) requires periodic assessments of the demand for timber along with other resources. Based on the RPA assessment of demand nationally, targets were assigned for individual forest production. The 1980 RPA Target for the Forest was set at 376 MMBF per year through the year 2030. This is close to current harvest levels.

Regional: A research bulletin published by the School of Forestry of Oregon State University in 1976 examined the future role of public forest lands in the state's economy as part of an overall estimate of Oregon's ability to produce timber. According to the study, the stability of Oregon's wood-products industry depends to a significant degree on timber supplied by national forests. This report has stimulated demand for increased emphasis on timber management on the Forest.

Local: The Forest supplies timber to a number of sawmills located in small communities in the Forest's areas of influence. Many of these mills depend almost totally on the Forest for their supply of timber. Sustained high interest in bidding for the Forest's timber reflects continuing demand for logs in spite of cloudy long-term forecasts.

B. Fish

1. The existing situation.

The Forest makes major contributions to Northwest supplies of fish, both wild and hatchery-spawned. With its great diversity of aquatic habitats ranging from alpine lakes to reservoirs and backwaters of the Columbia River, the Forest produces 48 known species of fish. The most important of these is the salmon family, called salmonids. These are both resident and anadromous.

The Forest's role in recreational and commercial fish harvests is substantial. Financial values from existing habitats have been estimated at $3 million per year for anadromous fish, and $1 million per year for resident trout.

2. Supply of fish.

According to estimates developed from current surveys of streams, the Forest has 2,300 miles of streams capable of supporting salmonids. Lakes and reservoirs within the Forest increase its capability by adding between 3,800 and 4,000 acres to the total aquatic habitat.

Six fish hatcheries obtain all or most of their water supplies from the Forest's watersheds. On the average, they produce 20 million pounds of anadromous fish per year.

The following table contains estimates of habitat capabilities with a full habitat enhancement program for the Forest's anadromous and resident salmonids. The data assume each major habitat would be fully occupied, and that a total rehabilitation and enhancement program estimated to cost $10 to $20 million would be implemented. Capability, as used here, means an estimate of the number of smolts and legal-size resident trout that could be produced in the waters of the Forest, assuming available habitat to be fully occupied.

Table TWO-4 HABITAT TYPES AND CAPABILITY POTENTIAL
(With Full Enhancement)

HABITAT	UNITS (MILES)	SPECIES	UNITS OF MEASURE	CAPABILITY HABITAT*
Streams	527	Steelhead	Smolts	813,700
Streams	311	Coho	Smolts	1,163,300
Streams	256	Spring Chinook	Smolts	1,342,700
Streams	5	Fall Chinook	Smolts	227,000
Streams	413	Searun Cutthroat	Smolts	393,700
Streams	1,650	Resident trout	Legals	756,900
Lakes AC	1,500	Resident trout	Legals	85,900
Reservoirs AC	1,900	Resident trout	Legals	196,600

*Mt. Hood National Forest Capability Index (1985) and Legal Trout Capability Index (1985)

3. Demand for fish.

Salmonids are a part of life in the Pacific Northwest. From Pre-Columbian times to now, these fish have played a significant role in the lives of many different people including Native Americans, sport fishermen, and commercial fishermen.

Of the Forest's developed recreation sites, 85 percent are near water - streams, rivers, lakes, or reservoirs. Angling for trout and other fish is highly popular. Many residents of the Portland-Vancouver metropolitan area are attracted to the Forest's lakes and streams. More and more, access and use of the Forest's aquatic resources are looked upon as a vital component of the area's lifestyle.

The demand for fish from waters of the Pacific Northwest far exceeds the supply. Many people are looking for ways to increase fish production. This is especially true for anadromous species in the Columbia River basin. The Salmon and Steelhead Enhancement Act and the Northwest Power Planning and Conservation Act are recent pieces of legislation. They provide for reducing the restrictions on anadromous runs, and they support efforts to substantially increase natural production of wild fish.

Local demands to fish for resident trout are also large and are likely to increase. Data are limited, but this demand appears roughly equal to the supply of lake/reservoir fishing on the Forest. The opportunity to fish in streams far exceeds demand at this time, and this leaves room for expanded future uses.

If the demand for fishing increases in proportion to the increase in surrounding-area populations, maintaining the balance between demand and supply must include one or more of the following actions:

a. Increase habitat capability through enhancement.

b. Increase the stocking of planted fish. (This would be the responsibility of Oregon Department of Fish and Wildlife.)

c. Enact special regulations. (ODFW responsibilty.)

d. Encourage increased uses of less-accessible streams.

Habitat management, capability, and enhancement in this Plan present opportunities for Forest management. However, the administrative management of fisheries (stocking, regulations) is the responsibility of the state of Oregon.

C. Water

1. The existing situation.

Water is one of the Forest's most valuable and extensive renewable resources. Forest water is an economic resource when used for irrigation, fish production, and to meet domestic needs. It also contributes scenic and recreational benefits such as those provided by the numerous waterfalls in the Columbia Gorge. Finally, it makes possible the Forest's timber and vegetative cover, which in turn support the logging industry and wildlife.

2. Supply of water.

The Forest has five major drainages. The average annual flow of water from the Forest is 5.95 million acre-feet, resulting from an annual precipitation that ranges from about 20 inches per year on the east side to nearly 200 inches per year on Mt. Hood.

Surface water on the Forest totals more than 18,000 acres, plus 5,000 miles of perennial and intermittent streams, and 175,000 acres of associated riparian areas. Water quality on the Forest is generally excellent with a few local problems. The water has low dissolved mineral content, high levels of dissolved oxygen, and is cool and clear.

Methods of increasing the yields of water through management practices have been studied throughout the United States. However, the research has yet to show that supplies of water increased through management techniques can be delivered to users beyond the small watershed and transported via the natural stream network to a point of diversion. Due to natural variations in streamflow and water flowing from the larger watershed absorbing the smaller watershed, any increase in water quantity loses its identity. Efforts to increase water yields on the Forest are not anticipated.

3. Demand for water.

The value of water from the Forest for domestic uses has been placed as high as $24 million per year. It may be one of the most important resources the Forest supplies to its surrounding communities.

There are over 15 municipal watersheds on the Forest. Some, like The Bull Run Watershed and The Dalles, are well known. The Bull Run Watershed provides the Portland metropolitan area with more than 130,000 acre-feet of water per year. (For convenience, water quantities are quoted in acre-feet; one acre-foot is one acre of land covered with water one foot deep.) Dodson, a small community, uses less than three acre-feet of water per year. The Dalles Watershed consumes 6,000 acre-feet per year. The total water consumption of surrounding communities exceeds 165,000 acre-feet per year.

Irrigation is important to many farmers in Hood River and Wasco counties. As a general rule, through Water-Master authority, irrigators will get all of the water they need. However, supply and demand imbalances may occur in dry growing seasons and when winter precipitation falls far below normal. In Wasco County, water from the Forest irrigates about 43,000 acres. This benefit has been valued at nearly $390,000 per year.

Interest in generating electricity with water flowing on the Forest is high and on the increase. Fifty-one proposed hydropower projects are in various stages of study or development. If proposed and existing projects were to produce at their estimated rates, they would yield 1,460 million kwh per year.

The high demand for fish was reviewed earlier. One obvious fact is that large and continuing supplies of cool, high-quality water are needed to continue or expand resources that sustain salmon/steelhead, resident trout, and freshwater shellfish. While the demand for water is expected to increase as the area's population increases, no serious water shortage is likely to happen in the near future.

D. Wildlife

1. The existing situation and agency coordination.

Approximately 265 terrestrial vertebrate species of animals spend at least part of their lives on the Forest. They use a variety of habitats that are highly diversified. The east side of the forest has types of habitats and species of animals unique to its relatively dry environment. Other types of habitats and animal species are unique to the west side. The age of trees in the Forest affects habitat diversity.

Officials of the Forest cooperate with the Oregon Department of Fish and Wildlife (ODF&W) in managing wildlife within the Forest. The working arrangement is for ODF&W to manage wildlife numbers while the Forest manages the habitats.

2. Supply of wildlife.

A forest with a variety of well distributed age classes is considered near optimum in wildlife habitat. The relative sizes and distribution of various types of habitats on the Forest can be compared in the following data.

Table TWO-5 TIMBER STAND CONDITION BY AGE CLASS

AGE CLASS	THOUSANDS OF ACRES
Grass/forbs	41.7
Shrub dominated	66.4
Pole/sapling	204.4
Young forest	75.2
Mature forest	249.4
Old growth	346.4

Old growth can be defined in many ways. One of the simplest definitions of old growth is "any stand of trees equal to, or greater than, 200 years of age." Based on this definition, about 346,000 acres of old growth now stand on the Forest. Of this acreage, about 266,000 acres are in the tenatively suitable timber land base. The other 80,000 acres are in existing Wilderness or other areas which are unsuitable (under any alternative) for Timber Management.

The grass/forb and shrub-dominated stages of forest growth provide grazing and browsing animals with large quantities of forage. At the same time, this class of wildlife requires mature and old growth for hiding and protection from harsh weather. Other species of wildlife also requre mature and old-growth communities for food and cover.

The Forest provides a number of special wildlife habitats that contribute to the diversity of animal species:

- Pine/oak habitat in the ponderosa pine zone runs as a discontinuous band along the dry, eastern edge of the mixed conifer forest on the east side.

- Snags and downed woody material resulting from the growth and death cycles of trees provide habitat for a number of birds and small mammals.

- Riparian habitats are used by more species of animals than any other special habitat. No doubt this is explained by the abundance of food, water, and cover in these habitats.

- Other habitats include the basalt cliffs of the Columbia Gorge (and cliffs and rims in other areas), talus slopes, and caves and burrows.

No Federally listed threatened or endangered species are known to live on the Forest at this time. Sensitive species on the Forest include the spotted owl and the Larch Mountain salamander. Indicator species are species that represent other species and require special wildlife considerations on the Forest. These species presumably identify the habitat needs of other species because they have similar biological traits. The indicator species on the Forest include elk, deer, pileated woodpecker, pine marten, spotted owl, turkey, and silver gray squirrel. Table TWO-9 summarizes the indicator species on the Forest at this time.

Table TWO-6 FOREST'S INDICATOR SPECIES

SPECIES	DESCRIPTION	HABITAT TYPE	COMMENTS
Elk	Hunted	Grass/forb Seedling/sapling	Numbers and condition improving.
Deer	Hunted	Grass/forb Seedling/sapling	Numbers/habitat condition improving.
Pileated Woodpecker	Indicates snag & down material	Mature, old growth, slash snags	Numbers/habitat condition declining.
Pine Marten	Requires close-in distribution old growth	Mature and old growth	Numbers/habitat condition declining.
Spotted owl	Sensitive species Forest Service	Old growth	Numbers/habitat condition declining.
Silver gray squirrel	Hunted, asso-ociated with pine/oak habitat	Pine/oak (East side)	Numbers/habitat condition stable.

The Forest must manage both old growth and seral habitats to achieve the Forest's potential, maximum habitat for wildlife and a diversity of wildlife populations. The March 1985 Analysis of the Management Situation provides estimates of maximum wildlife population levels and habitat improvement acres. These estimates assumed the maintenance of all existing old growth, all pine/oak habitat, and harvesting all other stands intensively at less than their optimum rotation ages for production of timber. The last constraint would increase the amount of grass/shrub stand types and provide abundant forage for wildlife. The estimates were also predicated on an aggressive wildlife enhancement program on other commercial forest lands. Given these conditions, it was estimated that there is the potential to supply three times as much improved habitat as provided under the 1980 RPA targets.

3. Demand for wildlife.

Minimum wildlife management goals have, for all practical purposes, been established by Forest Service regulations, particularly Department of Agriculture Regulation (DR 9500-4). This regulation directs that habitats for all existing native and desired non-native species of plants, fish, and wildlife must be managed to maintain minimum, viable populations of such species. Populations should have enough individuals to assure genetic diversity. Existing habitat diversity will be maintained or improved.

These minimum habitat levels translate into providing habitat for at least 51 pairs of spotted owls, 102 pairs of pileated woodpeckers, and 231 pairs of pine martens. Maintain habitat to insure viable populations.

The mere presence of wildlife is a source of satisfaction for many people. Some individuals find pleasure just in knowing that mountain lions or spotted owls still live on the Forest. Other people have greater demands, from observation and photography to hunting. Experience shows that it is easier to meet public demands for consumptive uses of wildlife, such as hunting, than it is to manage for other uses because programs exist for the management of hunted species. The demand for observable wildlife will exceed the demand for hunting.

E. Recreation, Unroaded and Wilderness Resources

From mountain climbing to visiting a resort, the Forest offers a wide range of recreational activities and facilities. In 1986, nearly seven million recreational visits were recorded. This equalled 4.7 million "Recreation Visitor Days." Any combination of people or hours adding up to 12 hours of visitor recreational use equals one Recreational Visitor Day, or RVD. The next table summarizes the most popular recreational activities on the Forest.

Table TWO-7 RECREATION VISITOR DAYS
(According to Activity) (Fiscal Year 1986)

ACTIVITY	RVDs	ACTIVITY	RVDs
Driving for Pleasure	860,100	Hunting	87,900
Camping	819,200	Picnicking	74,800
Viewing Scenery	614,500	Motorcycle/scooter Use	66,800
Gathering Forest Products	279,800	Nature Study	54,700
Downhill Skiing	275,000	Canoeing, other small Watercraft Use	41,900
Hiking and Walking	316,700	Using Interpretive Programs	42,700
Fishing	148,100	Snowmobiling	36,100
Resort Use	136,000	Horseback Riding	26,300
Bus Touring	150,200		
Cross-Country Skiing	98,500	Snowplay	25,000
Recreational Cabins	130,600	Swimming and Water Play	44,400
		Power Boating	25,000
		TOTAL RVDs	4,353,100

Source: 1986 Recreation Information Management (RIM) Estimates, Report 2300-1.

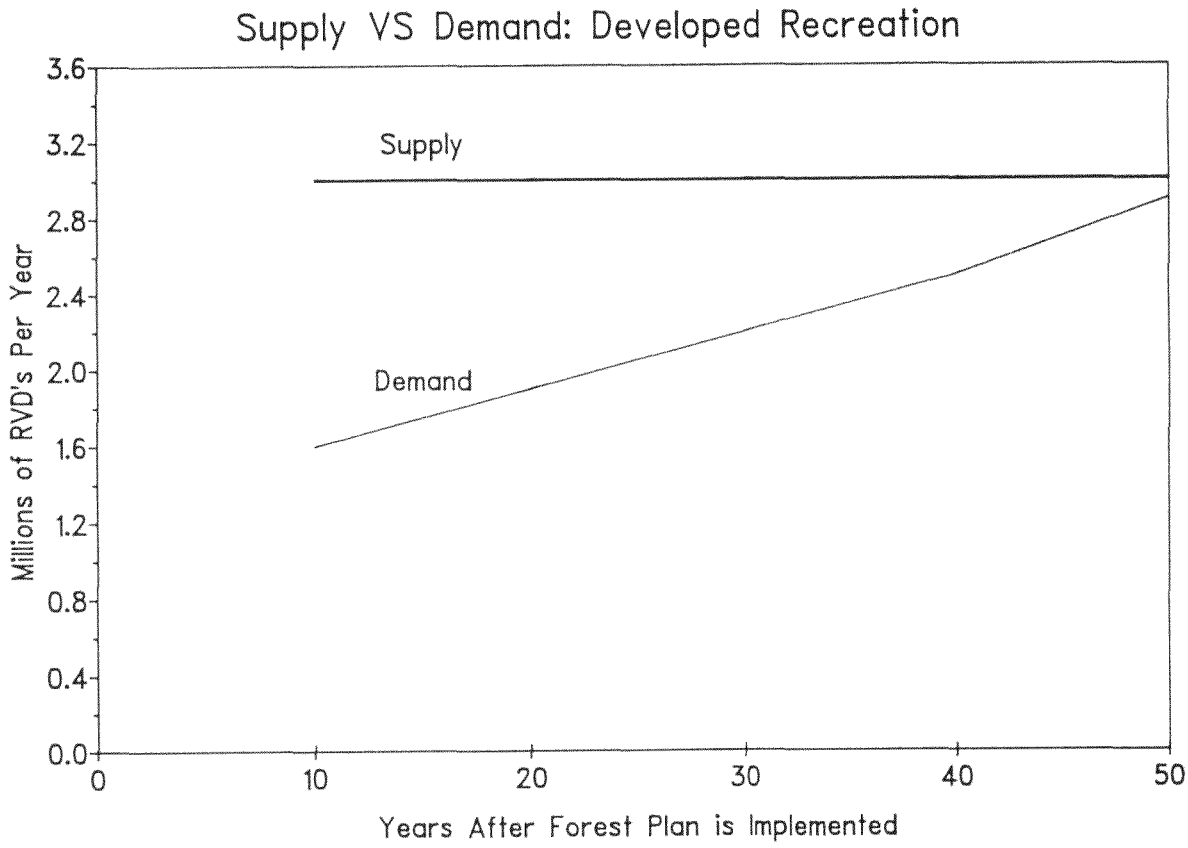
According to the 1986 estimates of activity, more than half of the total use of the Forest's resources for recreation were in three categories: driving for pleasure, camping, and viewing the scenery.

1. Developed recreation.

A total of 152 developed sites on the Forest have a practical capacity of more than three million RVDs per year. These sites include campgrounds, picnic grounds, boating facilities, visitor information centers, winter recreation areas, organizational camps, and summer homes. Approximately 1.5 million RVDs of recreation within developed sites were recorded for the year 1983.

A total of 589 facilities, with an estimated capacity of more than two million RVDs, are privately operated on the Forest under Special Use Permits. Some of these facilities are available for public uses. Others operate for the benefit of individuals or members of various groups.

Figure TWO-1 SUPPLY VS DEMAND: DEVELOPED RECREATION



Data: Supply = 3.0 MM RVDs Per Year (capacity under the Forest Plan to meet demand)
Demand (Use) = 1.6 MM RVDs (Year 10), 1.9 (Year 20), 2.2 (Year 30), 2.5 (Year 40), 2.9 (Year 50)

The above figure shows that the existing quantity of developed RVDs will be supplied for the next fifty years and is sufficient to meet demand. This figure fails to show that the quality of the average developed site has been and is now deteriorating because of a lack of funding to do what is termed "heavy maintenance." If this continues, a quality of facilities which the Forest has defined as "minimum level" will ensue. This condition would be less than the Forest Service's "Low Standard" of service and would probably lead to closing areas before they became hazards to public health and safety. This will not be allowed to happen under the Forest Plan. Instead, all types of recreational facilities and services will be upgraded and maintained at the higher level ("standard," according to Forest Service definitions).

Forecasts for demand are based on the assumption that the demand will increase in proportion to increases in the population of surrounding areas.

Although the overall capability of the Forest to supply developed recreational opportunities exceeds demand, the use of many individual developed sites on the Forest at this time equals or exceeds their practical recreation capacity. The Forest has been able to manage most sites to meet increased demands for developed recreation, but the costs are high. Recreational use of a site beyond its practical capacity can cause deterioration of the site. Rehabilitation then becomes necessary. When demand greatly exceeds practical capacity, a site must be expanded, or its use must be limited.

According to 1980 Recreation Information Management (RIM) estimates, the total demand for developed recreation on the Forest, including both Forest-operated and privately-operated facilities, has reached 48 percent of total capacity. Demand is projected to reach 94 percent of capacity by the year 2030. Demand for developed sites managed by the Forest has been projected to exceed capacity in 50 years. Demand for privately-owned developed sites is scheduled to reach only 78 percent of capacity in 50 years. The projected shortages of capacity in facilities managed by the Forest is aggravated by the uneven distribution of demand throughout the year. Some popular developed sites such as Lost Lake, Trillium Lake, the Timothy Lake area, and the Clackamas River drainage are often overcrowded during summer weekends and holidays. The especially heavy use of Timberline Lodge and Multnomah Falls also adds to the unbalanced distribution of demand.

2. Dispersed recreation.

Dispersed recreation includes both motorized and non-motorized opportunities. There are approximately 1,300 miles of trails, including cross-country ski trails. More than 130,000 acres of unroaded areas in ten different locations provide opportunities for non-motorized, dispersed recreation. The most popular dispersed recreation activities on the Forest are driving for pleasure, viewing scenery, cross-country skiing, and hiking. The supply/demand situation regarding the four types of non-wilderness, dispersed recreation is portrayed on the following two pages.

SURPLUSES: It is evident that all alternatives meet demand for roaded modified dispersed recreation for the next fifty years. All alternatives, except B and C, also meet demand for roaded natural dispersed recreation for the next fifty years.

DEFICITS: The current supply of both types of semi-primitive recreation experiences is short of demand, especially in the semi-primitive motorized category. This deficit increases over time for all alternatives, but at different rates.

Figure TWO-2 DISPERSED, SEMI-PRIMITIVE NON-MOTORIZED RECREATION

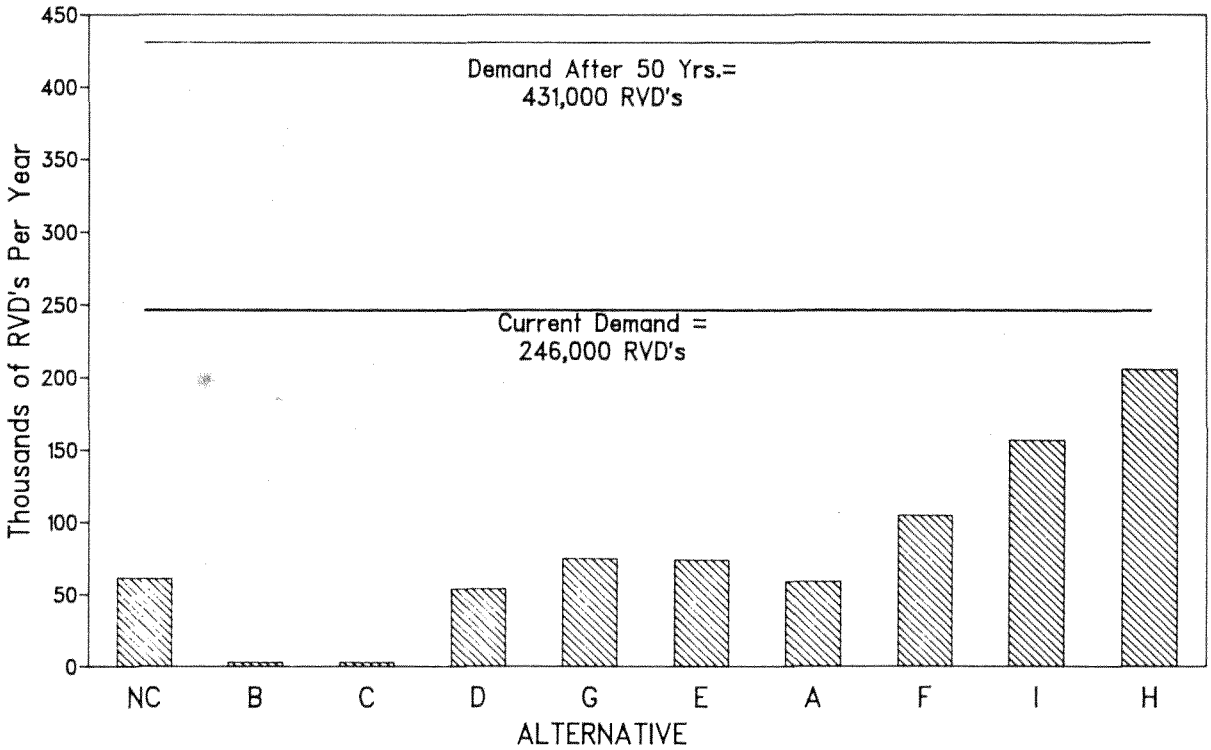


Figure TWO-3 DISPERSED, SEMI-PRIMITIVE MOTORIZED RECREATION

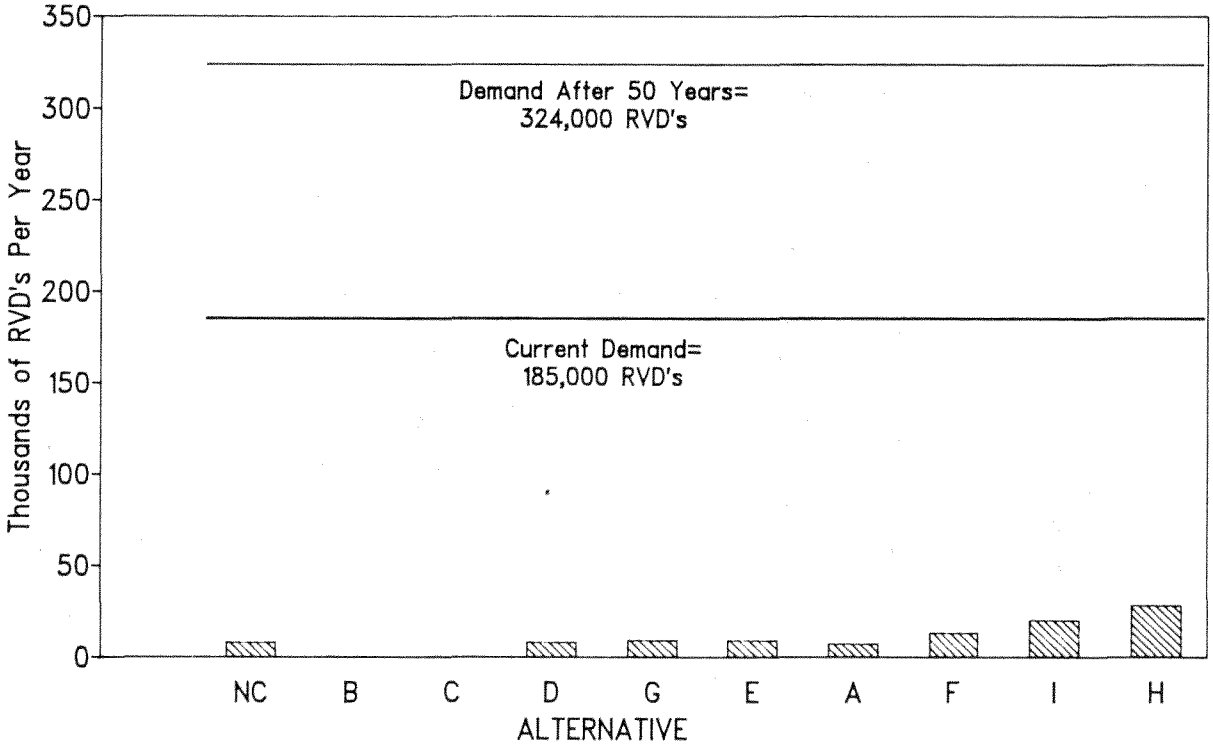


Figure TWO-4 DISPERSED, ROADED NATURAL RECREATION

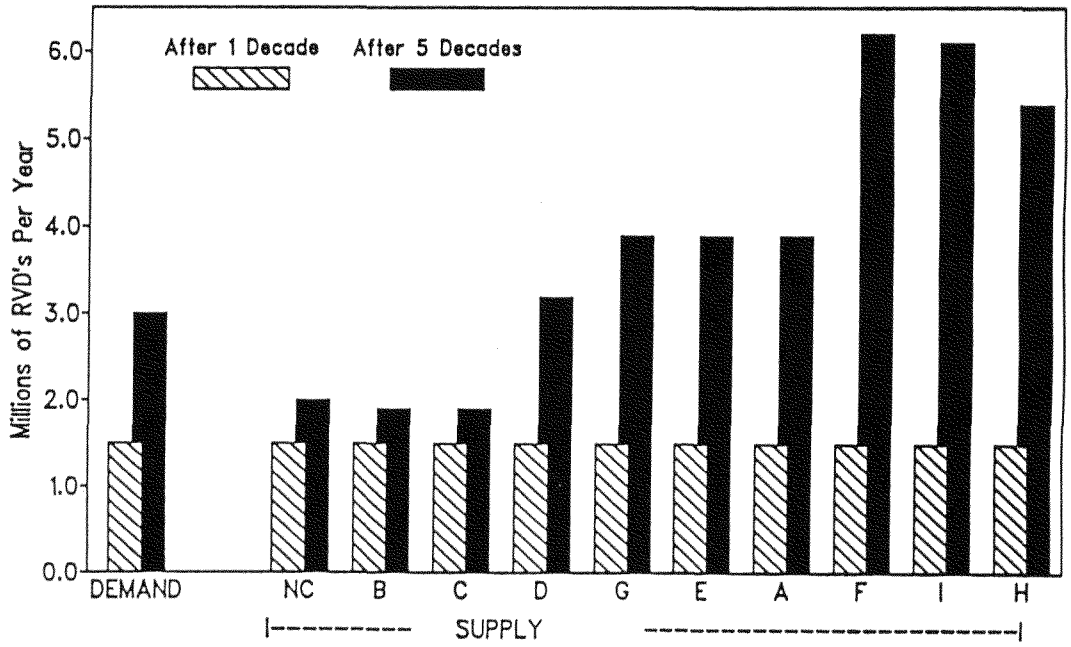
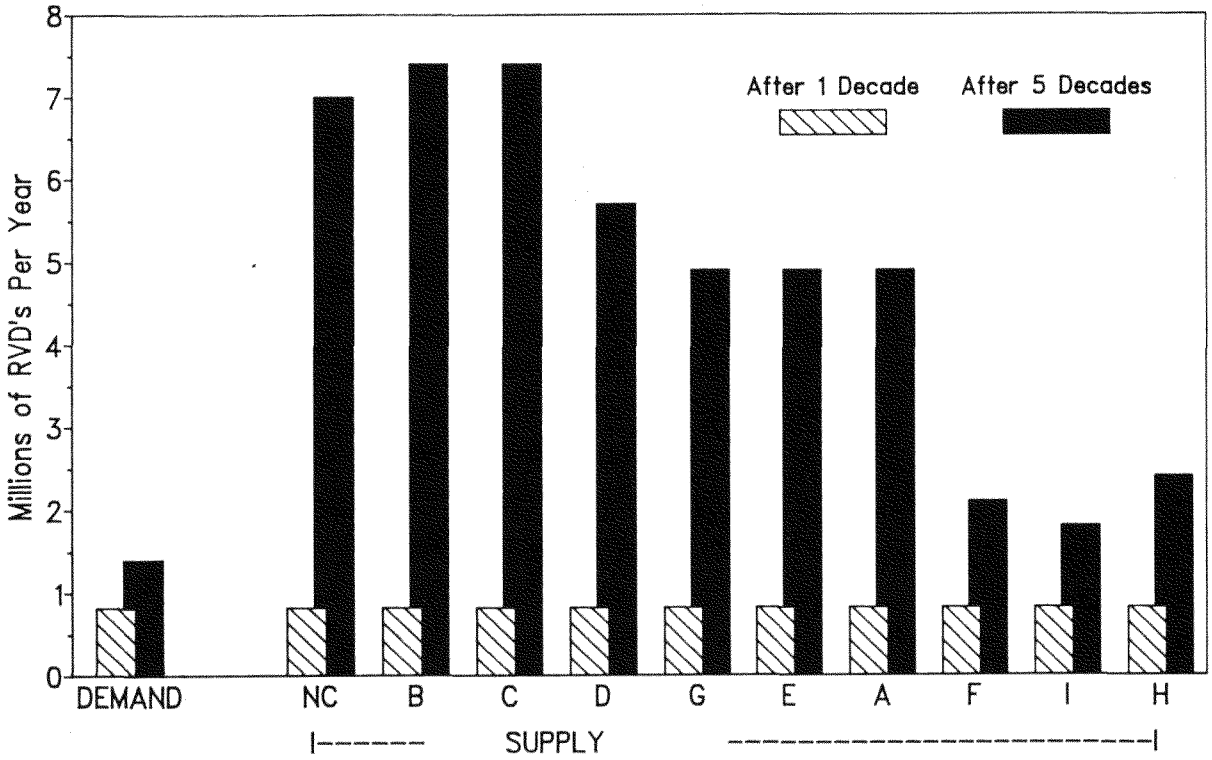


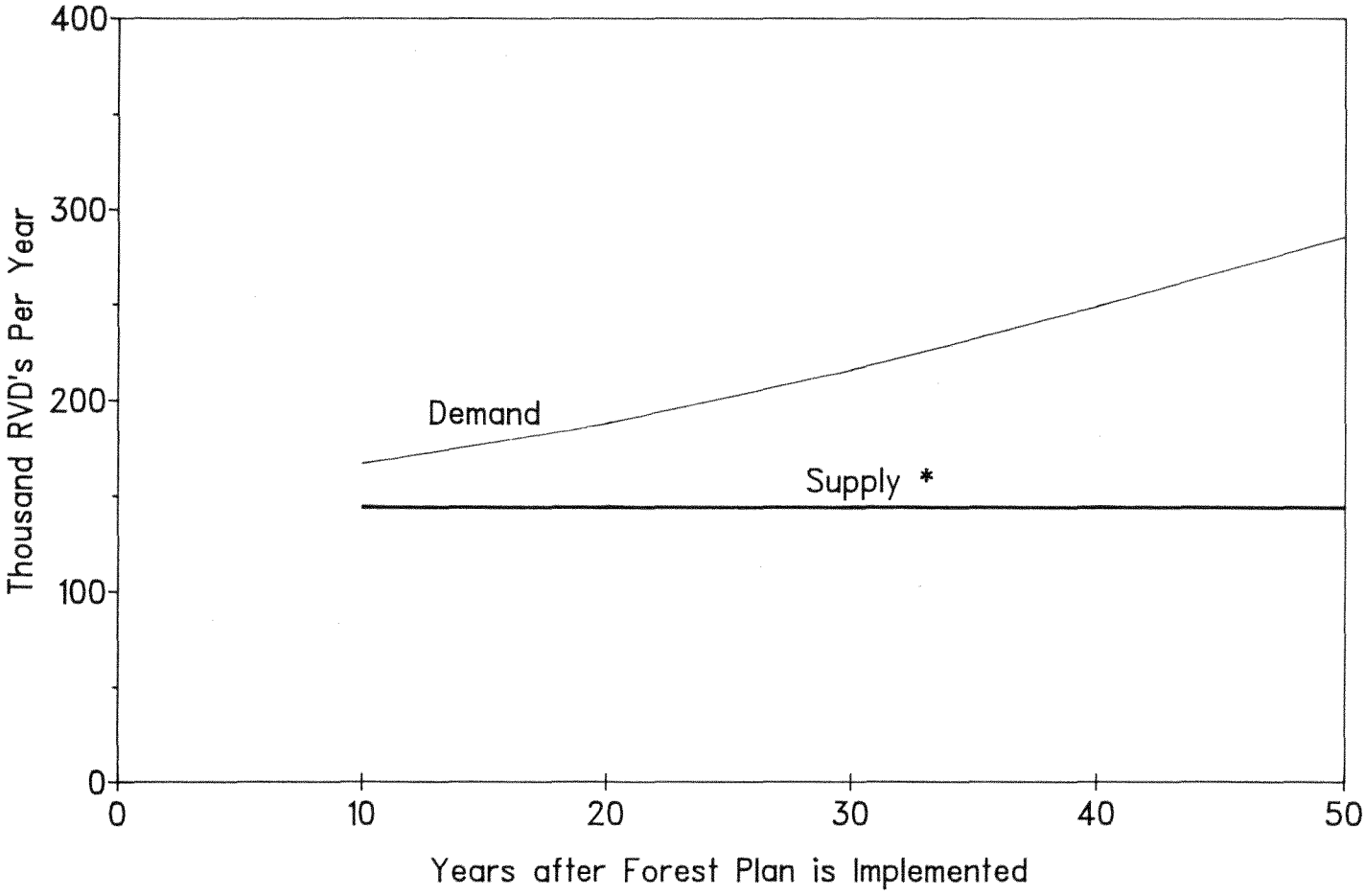
Figure TWO-5 DISPERSED, ROADED MODIFIED RECREATION



The quality of the average dispersed recreation campsite, trailhead, or trail has been and is now deteriorating because of a lack of funding. The Forest Plan addresses this situation by upgrading and maintaining all dispersed recreation facilities and services to the standard service level.

3. Wilderness recreation.

Figure TWO-6 SUPPLY VS DEMAND: WILDERNESS RECREATION



*All alternatives except alternative I.

DATA: Supply = 144,000 RVDs Per Year (capacity under the Forest Plan to meet demand)
Demand = 167,000 RVDs (Year 10), 188,000 (Year 20), 216,000 (Year 30), 249,000 (Year 40), 286,000 (Year 50)

The above figure shows that the existing quantity of Wilderness RVDs demanded by the public cannot be met by any of the alternatives considered in detail. This demand/supply deficit increases in the future. The 1984 Oregon Wilderness Act prohibits the Forest from recommending any additional areas, other than in the Olallie Further Planning Area, for wilderness during the next 10 years (see Appendix C for details). The Forest Plan does not include the unroaded portion of the Olallie Area as wilderness. Even if it did, the extra 7,000 RVDs per year is not nearly enough to make up the deficit in the supply of wilderness opportunities.

The quality of the average Wilderness campsite, trailheads, or trail has been and is now deteriorating because of a lack of funding. The Forest Plan requires that this quality be changed to the standard service level.

F. Visual resources.

1. The existing situation.

With more than a million acres in the heart of the Cascade Mountains, the Forest is a rugged and diverse landscape, offering a wide variety of scenic attractions. Scenery is recognized as a basic resource of the land which provides aesthetic benefits to the public. However, it is one resource which is not "consumed" in a traditional sense. No matter how many people view a scene, it is still there for the next person.

The Forest Service has established the Visual Management System (VMS) for managing visual resources. It classifies landscapes according to their natural variety and public sensitivity. The VMS inventory process results in all forest lands having a recommended Visual Quality Level. In the land management planning process, trade-offs are made among many resources. This results in the adoption of the recommended Visual Quality Levels as Visual Quality Objectives in the Forest Plan.

2. Scenic quality conditions.

Before the beginning of this century, landscapes of the Forest were nearly 100 percent in their natural condition, but very few people ever viewed those scenes. A few roads were constructed for recreational purposes in the 1880's and early 1900's. The Larch Mountain Road was built as a scenic drive in 1939.

As development proceeded to provide access to timber and recreational sites, the natural character of the landscape was no doubt altered somewhat. High quality scenery was in such abundance in the early days that long-term management of it was not an issue. After World War II, the Forest Service responded to the needs of a growing industrial society. This involved building more roads, trails, campgrounds, hydroelectric dams and powerlines, as well as increased timber harvesting.

Although the landscape was further altered, the changes increased the public's opportunities to travel the Forest and view the scenery. By the mid 1960's forest managers were well aware of the public concern for scenic values, and had designated Landscape Management Zones along major travel routes.

Inventories and records of the quantity and qualities of visual resources were begun in 1973, and revised in 1983. The following map depicts the visual quality objectives for the Forest. A recent inventory of the visual condition of the Forest was based on 1979 aerial photographs. This inventory classified the land into six visual-condition types, based on the degree of alteration from the natural landscape character. Table TWO-8 presents data on the existing visual condition on the Forest.

Map TWO-1

VISUAL QUALITY OBJECTIVES FOR THE FOREST PLAN

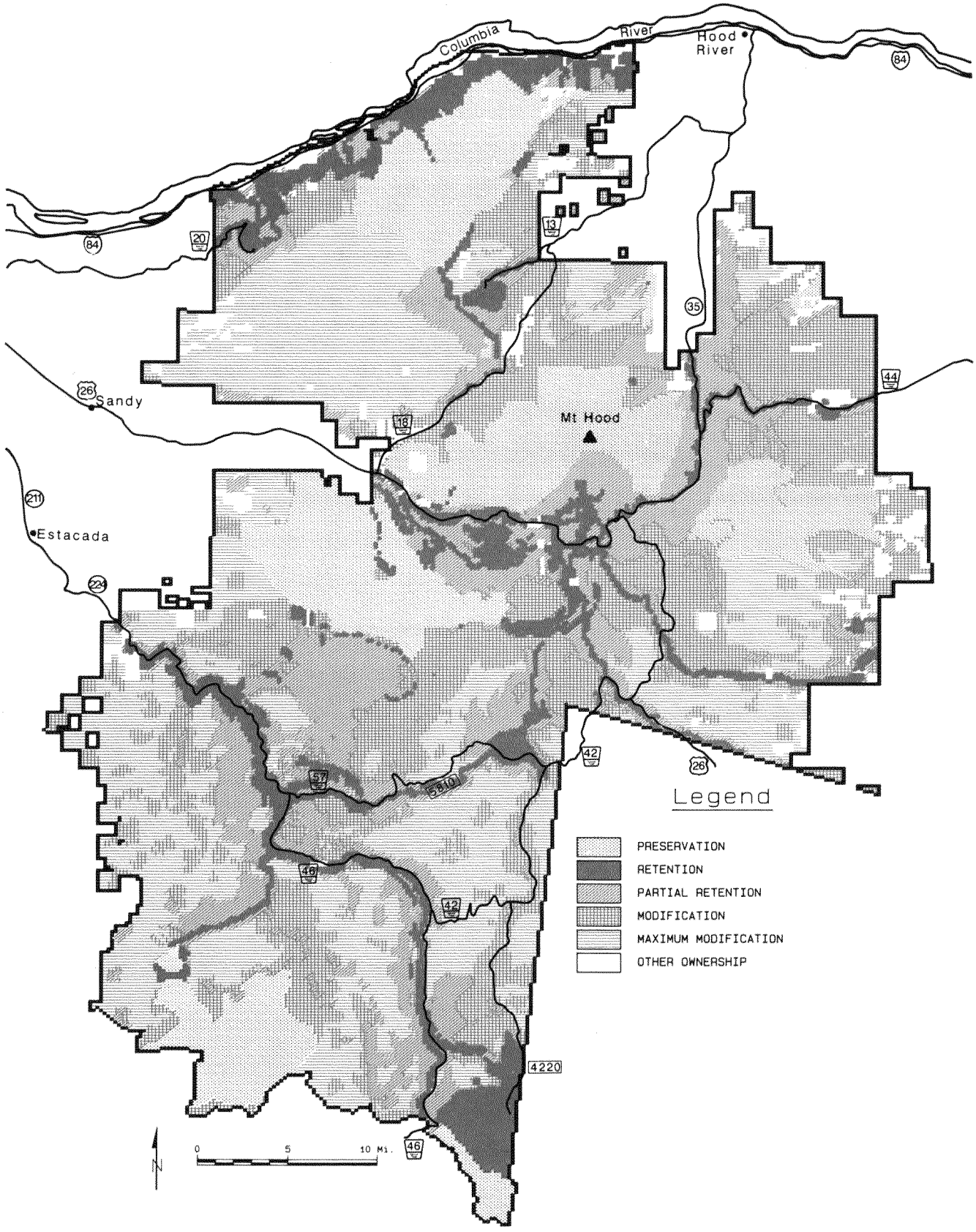


Table TWO-8 EXISTING CONDITION OF THE VISUAL RESOURCE (1979)[1/]

Visual Conditions	Acres (1000)	Percent
Ecological change only, except for trails. Appears untouched by man.	298	24 %
Changes are not visually evident to average person. Natural appearing.	557	50 %
Changes are noticed by average visitor, but do not attract attention. Natural character dominates. Minor disturbances.	66	6 %
Changes are easily noticed and may attract some attention. Apparent disturbances.	85	8 %
Changes are strong and obvious to the average visitor. Changes form the dominant impression of the landscape, yet they resemble natural patterns at 3-5 miles or more distance. Major disturbances.	82	8 %
Changes are in glaring contrast to natural appearance. Almost all Forest visitors would would be displeased. Drastic disturbances.	14	1 %
	1,102	100 %

[1/] This inventory was done from a visual measurement perspective and does not directly correlate to the inventory of the Forest with respect to the Recreational Opportunity Spectrum.

Variety Class: The inventory of the variety in the landscape provides the amount of unique, common, and minimal landscape variety in the Forest, using established criteria for the landforms, rock forms, waterforms, and vegetation present.

Table TWO-9 VARIETY CLASS INVENTORY (1973)

Class	Definition	Acres (x 1000)	Percent
A	Unique or outstanding	27	25 %
B	Common to the character type, but not outstanding	660	60 %
C	Minimal variety	169	15 %
		1,102	100 %

3. Demand for scenic quality.

One of the basic premises of the Visual Management System is that most recreation-oriented visitors to the National Forests have an image of what they expect to see. Although studies of people's images of forest areas result in varied responses from one geographic region to another, one factor generally remains constant- "people expect to see a naturally appearing character within each general region." [1/]

Demand varies by locality, the number of viewers, and the kinds of activities or purpose of the visit. Driving for pleasure and viewing the scenery are two of the most popular activities, accounting for one-third of the total recreation use of the Forest in 1983.

Yet there are wide variations in the amount of recreational uses on the many roads, trails, and water bodies on the Forest. This variation is accounted for in the Visual Resource Inventory factor of Sensitivity Levels, which reflects the public's concern (or demand) for scenic quality.

[1/] Newby, Floyd, Environmental Impact Appraisal of proposed developments in the Harney Peak Area of the Black Hills, Pacific Southwest Forest and Range Experiment Station, USDA Forest Service, Berkeley, CA.

Table TWO-10 SENSITIVITY LEVELS

Level	Definition	Acres (x 1000)	Percent
1	High (>= 6 concerned viewing hours per day)	534[2/]	48 %
2	Average (2-6 concerned viewing hours per mile per day)	218	20 %
3	Low (less than 2 concerned viewing hours per mile)	350	32 %
		1,102	100 %

2/ Includes 191,000 acres of Wilderness and Research Natural Areas

Recommended Visual Quality Levels

The two inventory factors of Variety Class and Sensitivity Levels were combined in the Visual Resource Inventory process to determine the Recommended Visual Quality Levels. These are representative of the public demand for the visual resource, and are intended to provide guidance for the management of the Forest's scenery. The Visual Quality Levels descibe five different degrees of acceptable alteration of the natural landscape.

Table TWO-11 RECOMMENDED VISUAL QUALITY LEVELS

Visual Quality Level	Percent of Forest
Preservation	17 % (Wilderness & RNA)
Retention	3 %
Partial Retention	34 %
Modification	37 %
Maximum Modification	9 %
	100 %

The Recommended Visual Quality Levels are mapped for the entire Forest. These recommended levels will become guidance to land managers for managing the visual resource at the project level unless specifically over ruled by other direction or standards.

4. Viewsheds.

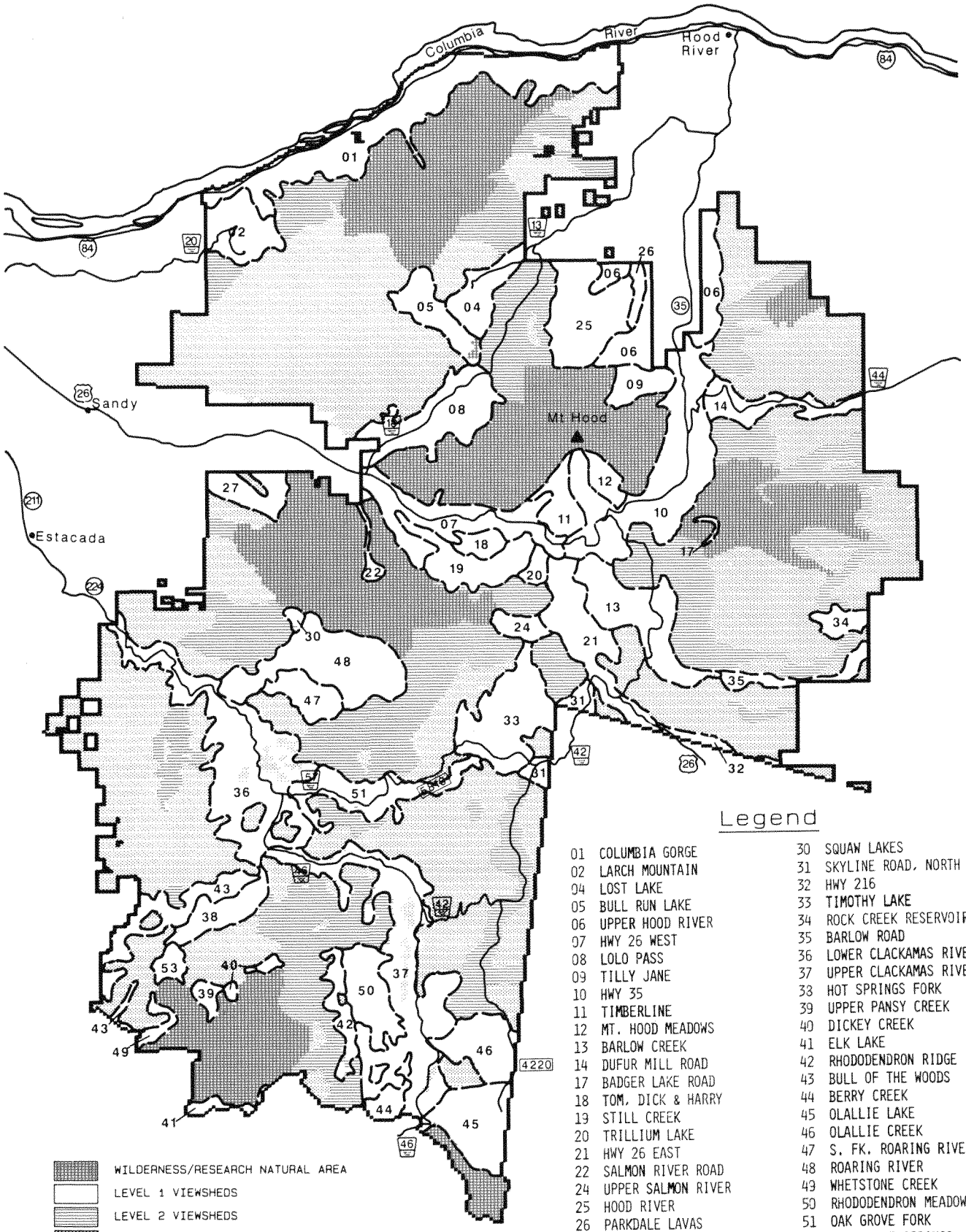
When visitors travel the Forest, they have an impression of the appearance of what they have seen from their route of travel. The area seen and associated with a specific travel route or use area is called a viewshed. From the sensitivity level inventory there are Level 1 (generally major travel routes and use areas), and Level 2 (generally secondary travel routes and use areas) viewsheds.

There are 46 inventoried Level 1 viewsheds, totaling 34 percent of the Forest, and 38 Level 2 viewsheds, totaling 17 percent of the Forest. Map TWO-2 shows the locations of the Level 1 and Level 2 viewsheds.

Of the remaining 49 percent of the Forest, 17 percent is in Wilderness, and 32 percent consists of Level 3 (low sensitivity) lands which are seldom seen.

Map TWO-2

SCENIC VIEWSHEDS



Legend

01 COLUMBIA GORGE
02 LARCH MOUNTAIN
04 LOST LAKE
05 BULL RUN LAKE
06 UPPER HOOD RIVER
07 HWY 26 WEST
08 LOLO PASS
09 TILLY JANE
10 HWY 35
11 TIMBERLINE
12 MT. HOOD MEADOWS
13 BARLOW CREEK
14 DUFUR MILL ROAD
17 BADGER LAKE ROAD
18 TOM, DICK & HARRY
19 STILL CREEK
20 TRILLIUM LAKE
21 HWY 26 EAST
22 SALMON RIVER ROAD
24 UPPER SALMON RIVER
25 HOOD RIVER
26 PARKDALE LAVAS
27 ALDER CREEK
30 SQUAW LAKES
31 SKYLINE ROAD, NORTH
32 HWY 216
33 TIMOTHY LAKE
34 ROCK CREEK RESERVOIR
35 BARLOW ROAD
36 LOWER CLACKAMAS RIVER
37 UPPER CLACKAMAS RIVER
38 HOT SPRINGS FORK
39 UPPER PANSY CREEK
40 DICKEY CREEK
41 ELK LAKE
42 RHODODENDRON RIDGE
43 BULL OF THE WOODS
44 BERRY CREEK
45 OLALLIE LAKE
46 OLALLIE CREEK
47 S. FK. ROARING RIVER
48 ROARING RIVER
49 WHETSTONE CREEK
50 RHODODENDRON MEADOW
51 OAK GROVE FORK
53 BAGBY HOT SPRINGS

III. SUMMARY OF OUTPUTS AND EFFECTS

Table TWO-12, on the following page, summarizes the potential outputs of the major resources of the Forest. Additional information is provided in Appendix B and Chapter II of the DEIS and in the "Analysis of the Management Situation, Mt Hood National Forest, March 1985."

The footnotes below clarify the information found in this summary table:

1/ From AMS Benchmark Summary: March 7, 1985: Non-Decline runs; 1 cubic foot=5.07 board feet

2/ Same as Alternative A in the DEIS.

3/ Value does not include background levels.

4/ 5th decade costs are average over 5 decades.

5/ Value for end of planning horizon.

6/ Value does not include wilderness.

Table TWO-12 MAXIMUM PRODUCTION POTENTIALS-SUMMARY OF OUTPUTS AND EFFECTS

	No Action 2/		Economic		Timber		Unroaded		Scenic		Wildlife		Fish/Water		All Amenities	
	1st	5th	1st	5th	1st	5th	1st	5th	1st	5th	1st	5th	1st	5th	1st	5th
TIMBER																
Allowable Sale Quantity(ASQ), Green, MMBF	229	229	287	287	304	246	246	207	207	222	114	146	140	142	8	19
Allowable Sale Quantity(ASQ), Green, MMCF	43.2	45.2	56.6	56.6	59.9	59.9	48.5	48.5	40.8	43.7	22.5	28.8	27.7	28.1	1.5	3.7
LTSY Capacity (MMCF)	46.9		56.6		59.9		48.5		43.7		28.8		28.1		6.5	
RECREATION																
Developed Use	1643	2873	1643	2907	1643	2873	1643	2873	1643	2873	1643	2873	1643	2873	1643	2873
Dispersed Rd Use	2810	5266	3233	5869	2885	5335	2774	4981	2760	5069	2774	4379	2774	4379	2774	4379
Dispersed Unrd Use	273	273	259	240	198	198	308	410	308	323	308	408	308	408	308	408
Wilderness Use	188	188	144	144	144	144	144	144	144	144	152	152	152	152	152	152
WILDLIFE/FISH																
Use (M WFUDs)	310	570	314	528	314	582	302	543	310	552	302	559	302	559	302	559
Anadromous Imp(M lbs)	491	491	491	491	491	491	546	641	546	641	582	656	582	656	582	656
Habitat (M Acres)																
Old Growth	332	276	316	194	316	194	358	409	340	316	345	342	345	342	345	342
Mature	264	198	251	197	248	187	254	201	258	204	255	162	266	215	268	224
Seedling/Sapling	68	94	154	100	161	92	147	92	140	84	124	73	126	48	101	5
SOIL/WATER																
Sediment INDEX 3/	807	14250	18080	13670	21500	10820	14740	12470	11560	4930	8680	6170	3680	7330	480	560
FACILITIES																
Total System Miles	5819		6015		6132		5446		5631		4612		4988		3973	
ECONOMICS 4/																
Cost MM	27.1	24.9	27.3	27.6	31.3	30.8	24.7	24.9	23.9	23.2	21.7	24.2	19.1	19.	13.1	13.1
Timber RNV	909		1042		991		887		744		279		534		34	
Benefits	1094		1413		1436		1208		1009		554		704		56	
Costs	185		371		445		321		266		275		170		22	
VISUAL RESOURCES (M Acres) 2/																
Visual Quality	130		44		44		102		372		192		372		372	
ROS (M Acres)																
P&SPNM 6/	55	48	56	45	56	15	59	48	56	51	56	51	56	61	60	62
SPM	5.0	3.0	5.0	3.0	5.0	0	6.0	6.0	6.0	5.0	6.0	6.0	6.0	6.0	6.0	8.0

IV. COMMUNITIES AND URBAN INTERFACE

A. The Existing Situation

The Forest is not only a part of the Northwest's natural environment, but it also contributes to the social and economic environment of its area of influence. Many people who live in the vicinity of the Forest use it for work, for play, or for both. In one way or another, the Forest affects the lives of a large segment of the nearby population and affects other, more distant people to a lesser degree. The needs and interests of all concerned citizens are major factors in Forest management decisions.

The areas which interact most directly with the Forest include Clackamas, Hood River, Multnomah, and Wasco counties. These four counties closest to the Forest are considered its area of primary influence. The people who live within the primary area of influence generally have much closer ties to the Forest than will be found in people who live farther away.

The four-county area adjacent to the Forest contains a combined population of 842,000 people, representing about one-third of Oregon's total population. This area includes the largest city in Oregon, Portland. The Portland metropolitan area is a center of trade and manufacturing. The proximity of the metropolitan area is a dominant feature of the social and economic setting in which the Forest must operate.

A major element in the Forest's planning is projected population growth in the area of influence. The entire area is expected to increase in population with the largest increases projected for Clackamas County. This county is expected to increase by about 50 percent by the year 2000 largely due to expansion in the Portland metropolitan area.

Residents of the four-county area near the Forest take strong positions regarding its facilities and services. Many urban residents look upon the Forest as a kind of "backyard" for Portland. Many rural residents feel a sense of ownership of the Forest, and some literally depend upon its resources. The spectrum of individual needs and desires, the intensity of those needs and desires, and the Forest's nearness to a very large urban area sometimes create complex and even contradictory concerns.

B. Economic Dependency

Small towns in the four-county area have historically relied on wood products and agriculture as their base of employment. This historic dependence has followed a pattern established in the early 20th century and still affects those small towns today. Economic growth has been rapid but cyclical, with peaks and valleys in production. Harvesting of timber accelerated rapidly during World War II and again during the boom years of the sixties and seventies.

In recent years, however, employment in wood products has declined. Throughout the country, high interest rates caused a sharp drop in the demand for wood products as fewer people were able to buy new homes. Competition from Canadian and Southeastern U. S. producers reduced the demand for wood products from the Pacific Northwest. Mechanization of sawmills caused a decline in the need for labor in the wood products industries. (For more information, see Adams, D., Haynes R. "Changing Perspectives on the Outlook for Lumber in the United States," in the Journal of Forestry 1985.)

In 1984, approximately 9,300 people have been directly employed in wood products industries situated in the four-county area. Of the area's wood products jobs, 4,800 appear to be related to the processing of timber from the Forest. In some parts of the four-county area, especially on the west side, tourism, trade, and "high tech" industries are increasing as wood-products employment declines. The influence of the Forest on local economies is an aspect of various human concerns discussed elsewhere in this plan.

C. Amenity Benefits

The nearness of the Forest to Portland creates a strong demand for recreation of all kinds, and the demand is expected to increase. The boundary of the Forest is less than an hour's drive via several major highways from the metropolitan area. Because the Forest is so close and readily accessible, it is very popular for one day visits from Portland. These urban visitors are highly concerned about the visual appearance of the Forest. At the same time, the Forest`s attraction for users who are not "Forest oriented" creates special problems in law enforcement and management.

V. INFORMATION NEEDS

This section addresses the information, inventory, and research needs to support, or improve, management of the Forest. Regional Guides provide for coordination of these information needs with research programs.

A. Timber Information Needed

1. Validation of yield tables.
2. Ecological relationships with other resources.
3. Inventory and growth data, specific to Ranger Districts and Drainages.
4. Suitability.
5. Cost and price data.
6. Supply/Demand relationships.
7. Types of treatments and corresponding volumes from "Category B" management areas.

B. Fish, Aquatic, Riparian Resources Information Needed

1. Improved basin and species specific information on anadromous fish and resident trout including:

   - Anadromous fish run size, composition and timing.
   - Distribution and extent of spawning and rearing by species.
   - Habitat requirements and survival rates by species and life history stage.
   - Relationship between juvenile densities and smolt/adult production.
   - Character and extent of competition for rearing space between anadromous species, between resident trout species, and between both species.

2. Assessments for Forest riparian and aquatic habitats. This includes 60-90 miles of anadromous streams, 400-600 miles of resident trout streams, 400-600 miles of perennial non-fish bearing streams, and nearly all lakes and wetlands.

3. Definition and understanding of the relationship(s) between riparian and aquatic habitat parameters and fisheries' carrying capacity. This includes methods for quantitative assessment, as well as the capability to predict fish production potential.

4. Validation of modeling techniques to relate the effects (individual and cumulative) of various land and resource management activities on the productive capability of riparian and aquatic ecosystems.

5. Hierarchical classification of Forest riparian and aquatic ecosystems.

6. Quantitative, multi-year costs, performance efficiency, and durability of a wide range of riparian and aquatic rehabilitation and enhancement techniques.

7. Identification of information and research requirements which are needed to improve management of the Bull Run Watershed. (NOTE: On May 19, 1986 the Bull Run Information Needs Committee was appointed to develop this information. The Committee is to report their findings along with recommended priorities.)

C. Wildlife Information Needed

1. Biological requirements of indicator species.

2. Use patterns of Winter Range areas.

3. Old growth habitat characteristics (structure/function).

4. Quantity/quality of large down woody material needed for wildlife.

5. Longevity of standing snags by species, diameter, and height.

6. Spotted Owl habitat requirements (e.g. amount of contigious old growth habitat).

7. Legume and/or grass seeding of clearcuts effect on forage production/utilization by deer and elk, and the effect on conifer survival (i.e. competition with conifer by resulting plant community).

D. Recreation Information Needed

1. Current and future use information for developed, dispersed, and wilderness recreation activities.

2. A refined process to set priorities for developed sites. This ranking would allow efficient allocation of operations and maintenance, and capital investment funds.

3. Methods and effects associated with controlling use of recreation areas (e.g. reservation system, lottery, market solution, public information).

4. Information on the relationships of roads, timber harvest and recreation. For example, what would be the effect on recreationists if a percentage of secondary roads were closed?

5. Carrying capacity statistics for specific Wilderness Areas.

E. Visual Resources

1. Information on forecasting the future visual condition of viewsheds.

2. Research into the compatability of managing areas for both big game habitat and high quality scenery.

3. Appropriate methods for monitoring visual resources.

4. Specific information on recreationist's attitudes and perceptions regarding modification of the visual landscapes and the resultant recreation experience.

F. Cultural Resources Information Needed

1. "Historic Contexts" represented on the Forest-based cultural themes with geographical and chronological limits. Range of property types and total known properties associated with each context and their integrity thresholds.

2. Model that predicts where the property types for each "Historical Context" are likely to be found.

3. Information to fill "gaps" in the data about property types and known cultural resources.

4. Determination of which cultural resources should be conserved for scientific study.

5. Preservation goals for each "Historic Context" integrated into a single preservation plan.

6. A framework in which to conduct inventories, evaluations, nominations to the National Register of Historic Places, protection and enhancement of the Forest's cultural resources.

7. Identification of cultural resources or areas of the Forest which have Native American religious values.

G. Soils Information Needed

1. Erosion rates on major soil parent materials in an undisturbed state and after logging disturbance.

2. Erosion rates and recovery rates on road cut slopes for different parent materials.

3. Losses in productivity related to soil compaction or tractor harvested and machine piled units.

4. Nutrient levels in the different soil types and vegetation communities on the Forest.

5. Impacts of site preparation methods of machine piling and broadcast burning on nutrient cycling. Effects will differ by east side, west side, and high elevation plant communities.

6. Fertilizer response of Douglas-fir on different soil types. Balance effect of nitrogen and phosphorous on fertilizer response.

7. Effectiveness of measures used to mitigate compaction damage. Effectiveness of subsoil tillage in rehabilitation of compacted soil.

8. Detailed soil inventory of the commercial forest land base and municipal watersheds to aid in watershed management, identification of unsuitable ground, and assistance in project level planning.

9. An evaluation of the cumulative impacts of multiple entry and intensive management prescriptions on compaction-produced productivity losses.

H. Forage Information Needed

1. Production information for transitory forest types, both inside and outside existing allotments.

2. Additional, specific forage production data following silvicultural activities or fire. This would better predict production potential through the planning horizon.

I. Fire and Fuels Management Information Needed

1. Effects of wildfires on non-timber values and usage of Forest resources.

2. Detailed fuel modeling of the Forest.

J. Roads and Transportation Systems Information Needed

1. Effects of roads on the physical environment.

2. Effects of roads on fish and wildlife.

3. Effects of roads on recreational use.

4. Site-specific information to evaluate possible effects of new roads on the adjoining physical environment.

5. Methods and processes to evaluate, display, and account for the benefits of roads to all resources.

6. Data regarding alternative methods of road financing, such as appropriations through recreation or fire programs.

K. Geological Information Needed

1. Studies of ground water quality and quantity.

2. Engineering properties of soils in relation to the soil resource inventory.

3. Studies of root strength as it relates to land stability.

CHAPTER THREE

CHAPTER THREE

RESPONSE TO PUBLIC ISSUES AND MANAGEMENT CONCERNS

I. INTRODUCTION

This chapter addresses how the Forest Plan responds to the six Public Issue groups arising from public issues related to the management of the Forest. These issues groups are composites of the fifteen individual issues listed in Chapter I of the accompanying DEIS. Detailed discussion of these public issues and the rationale for the groupings are presented in Chapter I and Appendix A of the DEIS.

II. PUBLIC ISSUE GROUPS

The six Public Issue groups are:

A. PUBLIC ISSUE GROUP 1:

Level of Timber Supply and Wood Fiber Production

B. PUBLIC ISSUE GROUP 2:

Maintenance and Enhancement of Fish Habitat and Water Quality

C. PUBLIC ISSUE GROUP 3:

Maintenance and Enhancement of the Quality and Quantity of Old Growth and Other Suitable Wildlife Habitat

D. PUBLIC ISSUE GROUP 4:

Maintenance and Enhancement of Wilderness, Wild and Scenic Rivers, Outdoor Recreation Resources, and Scenic Quality of the Forest in Response to the Needs of an Increasing Nearby Metropolitan Population

E. PUBLIC ISSUE GROUP 5:

Disposition of the Remaining Unroaded Areas

F. PUBLIC ISSUE GROUP 6

Community Dependence on Forest Resources

III. RESPONSE TO PUBLIC ISSUES

A. PLANNING QUESTIONS

Managers must consider the following **major planning components** in addition to the Public Issues identified and discussed previously as they prepare to respond to the Public Issues;

- **The physical limitations of the Forest.**
- **The biological capabilities of the Forest's resources.**
- **The legal constraints placed on Forest management.**

Experience shows that these considerations can be expressed in terms of **Management Concerns** and **Resource Use and Development Opportunities**. As part of the planning process these components were developed and identified by the Forest Management Team (FMT). Appendix A of the DEIS lists these and presents the rationale for the management concerns.

The remainder of this chapter is devoted to brief discussions of how the Forest Plan responds to these major planning components, including management concerns and incorporation of resource use and development opportunities. In responding to the mangement concerns, the FMT and the Forest Interdisciplinary Team (I.D. Team) developed the following planning questions.

QUESTION 1: TIMBER

- **How much wood fiber should the Forest produce?**

QUESTION 2: RIPARIAN

- **To what extent should riparian habitat be maintained or enhanced?**

QUESTION 3: WILDLIFE

- **How much and what kinds of wildlife habitat should the Forest provide?**

QUESTION 4: RECREATION

- **How should the Forest manage its outdoor recreation resources to respond to the needs of an increasing nearby population?**

QUESTION 5: UNROADED AREAS

- **How should the remaining unroaded areas be managed?**

QUESTION 6: COMMUNITIES

- **How should the Forest respond to the social and economic concerns of local communities depending on the Forest?**

B. ANSWERS TO PLANNING QUESTIONS

Appendix A of the DEIS discusses, in a general manner, the ways in which to respond to the major planning components, including management concerns.

The Forest Plan answers to these planning questions is presented below. These answers form part of the basis for the Forest Plan and incorporate the major planning components and the management concerns discussed in Appendix A.

1. QUESTION 1: TIMBER

How much wood fiber should the Forest produce?

From 1977 to 1986 the average total timber harvest on the Forest was about 326 million board feet per year. A total of 384 million board feet were actually sold. This was accomplished on a land base of about 554,000 acres.

Under this Plan, about 347 million board feet is available for annual harvesting on about 514,000 acres. About 4,500 acres per year are to be harvested during the first decade. Although harvest volume remains constant over time, timber inventory and growth do not. The initial rate of growth for the standing volume is estimated at 260 million cubic feet (MMCF) per decade, and the final rate is estimated at 460 million cubic feet per decade. (These rates show that timber stands subject to harvest begin with more older, slower growing trees than they end with.) This Plan schedules timber harvest on approximately 79% of the lands identified as tentatively suitable for timber production.

2. QUESTION 2: RIPARIAN

To what extent should riparian habitat be maintained or enhanced?

Water is one of the Forest's most valuable and extensive renewable resources. Approximately 40 percent of Oregon residents rely on the Forest for water in some manner. Water on the Forest is impacted by almost every resource activity and has an important role in almost every resource. Generally speaking, water quality on the Forest is excellent at the higher elevations, but ranges to somewhat lower quality at lower elevations. The range of water quality levels closely follows the degree of past management activities and the resultant current condition of riparian vegetation. Water quality and fish habitat enhancement are responsive to management activities and the management direction that guides activities.

Riparian-dependent resource management under the Forest Plan is at the "moderate" level. Minimum Management Requirements (MMRs) are satisfied through management of "Key" riparian areas as Key Site Riparian Management Areas, and management of Class I, II, III streams, lakes, reservoirs, and wetlands as General Riparian Management Areas. In addition, two drainages with special concerns, Still Creek Drainage and Miles Creeks Drainage, are designated as Special Emphasis Watershed Management Areas with prescriptions emphasizing maintenance or enhancement of fish and water resources.

Including the Bull Run Management Area, a total of 203,700 acres are identified under this Plan for management of riparian dependent resources. Fish habitat will show a modest increase through rehabilitation and enhancement. Net long term increases in aquatic habitat capability will result. The Forest's backlog of rehabilitation projects is planned to be eliminated by the second decade. The existing character of riparian areas associated with perennial streams, lakes, reservoirs, and wetlands is maintained.

3. QUESTION 3: WILDLIFE

How much and what kinds of wildlife habitat should the Forest provide?

Under the Plan, sufficient habitat is provided to maintain minimum viable populations of species. Management activities take into account wildlife distribution needs. Habitat is managed for spotted owls, pileated woodpeckers, and pine martens through management area designations and accompanying prescriptions of wildlife resource activities. In addition to areas especially maintained for wildlife, other, comparable habitat may be provided as a by-product of managing other resources. Old-growth habitat after 50 years, compared to the amount of this habitat now available, will be reduced by 21%.

Forage for deer and elk is provided as timber is harvested. Habitat for these species is enhanced by seeding of grasses and forbs. Nevertheless, local shortages of forage will occur in some drainages for the first 50 years, and the Forest's capacity for deer and elk declines from present levels. Populations of deer and elk are projected to decrease by about half by the year 2030.

Twenty thousand acres of timber in the pine/oak habitat located on the east side of the Forest is managed under Pine/Oak Management Area standards. This will benefit turkeys and silver gray squirrels, and would result in about a 300 percent increase in turkeys and silver gray squirrels (refer to Pine/Oak Management Area Standards in Chapter Four of this proposed Forest Plan).

4. QUESTION 4: RECREATION

How should the Forest manage its outdoor recreation resources to respond to the needs of an increasing nearby population?

The Forest Plan recognizes the importance of recreation to the communities served by the Forest. Developed and dispersed recreational activities, and facility operation and maintenance, including trails, are managed under the Plan at standard service management level. Under these standards all facilities will be upgraded by the end of the first decade. Refer to Chapter Four, Forest wide dispersed recreation standards, standards for developed recreation sites, other recreation management areas standards, and Chapter II of the accompanying DEIS for an explanation of recreation service levels.

Dispersed recreational opportunities in a "roaded natural" setting will more than double, and opportunities in a "roaded modified" setting will increase six-fold during the next 50 years. As a result, semi-primitive, dispersed recreational opportunities will decrease.

The Clackamas, Salmon, and Roaring Rivers are recommended under the Plan for inclusion into the Wild and Scenic Rivers System. The following new Special Interest Areas will be added to the present group of five: The Face of the Columbia Gorge, 40 acres on top of Larch Mountain, the Mitchell Flats extension of the Roaring River Special Interest Area, the northern expansion of the Olallie Lake Special Interest Area, Bagby Hot Springs, the route of the Barlow Road, an expansion to the Little Crater Lake Geologic Area, Lost Lake, the Parkdale Lava Beds, Squaw Meadows, and the Sugar Pine Botanical Area.

Under the Plan, 180,000 acres of Wilderness are managed to provide primitive recreation opportunities. Ecological, scientific, geological, educational, scenic, and historical values are to be left unimpaired. Projects are planned to restore overused Wilderness transition zones and popular Wilderness destinations to more primitive conditions. Opportunities for primitive recreation experiences within Wilderness should remain available for the next several decades.

Seventeen of the Forest's viewsheds are to be maintained in their natural appearing condition under this proposed Plan. Among these viewsheds are those seen from the Columbia Gorge, Highway 26, Timberline Road, Lower Clackamas River, Trillium Lake, Bagby Hot Springs, Mt. Hood Meadows, and Lost Lake. Another 14 viewsheds, 29 percent of all viewsheds on the Forest, should appear only slightly altered; that is, continue in their present condition.

5. QUESTION 5: UNROADED AREAS

How should remaining unroaded areas be managed?

Under the Forest Plan, essentially all of the Eagle and the Olallie unroaded area, and most of the Roaring River unroaded area retain unroaded characteristics through management as Special Interest Areas. Other types of management will result in about half of the Wind Creek area remaining undeveloped for at least 50 years. The following non-wilderness, unroaded areas will be roaded during the first 15 years: Larch, Twin Lakes, Bull of the Woods, Mt. Hood Additions, Salmon/Huckleberry, and Badger/Jordan. No new areas are recommended for designation as Wilderness under the Plan.

About 51,800 acres out of 130,000 acres now unroaded are managed to maintain their unroaded characteristics. Approximately twenty eight million board feet of timber is planned to be harvested from the other unroaded areas each year.

6. QUESTION 6: COMMUNITIES

How should the Forest respond to the social and economic concerns of local communities depending on the Forest?

Economic and social activities carried out in the Forest's area of influence are extremely varied and complex. Management of the Forest's resources affects some communities far more than it does others. Many residents within the area of influence rely on the Forest for commodities; others rely on its amenities for recreation.

The wood-products sector of nearby economies may decrease in importance in the near future. This may be caused by increases in the costs of production or improvements in sawmill technology.

Although the total supply of logs from the Forest decline under the Plan, this supply is expected to continue without large differences decade to decade. This planned stability of long term timber supplies should help communities in their longer range planning.

Tourism and recreation are beginning to play greater roles in the economies of some communities in the Forest's area of influence. Both summer and winter recreation, particularly along major travel routes, are expected to show significant increases. The Forest is a major attraction for visitors as shown by visits in 1983 totaling over seven million recreation visits. Visitor expenditures are substantial contributions to local economies. The Forest's emphasis on maintaining scenic travel corridors and improving recreation facilities reflects an awareness of this fact.

The Forest recognizes Indian treaty rights and remains committed to the protection of those rights. Although no Indian reservations exist on the Forest, one lies within the Forest's primary area of influence. This is the Warm Springs Reservation. An important part of cooperation between the Forest and the Warm Springs Tribes involves the management of fish and wildlife habitats, especially the habitats of anadromous fish.

Indian tribes, such as those at Warm Springs, have guaranteed rights to take anadromous fish from the Columbia River system. These rights have been secured by treaties negotiated with the United States Government. These treaties permit the tribes to take fish that pass their usual and accustomed places, and further guarantee the Indians a fair share of the relevant runs of anadromous fish. Rights like these have not been granted to any other social or ethnic group within the Forest's area of influence. As provided in the American Indian Religious Freedom Act, under this proposed Plan, Native Americans are assured access to sites which allow them to continue their religious practices. Forest officials have cooperated with the leaders of the Confederated Warm Springs Tribes to make sure that access to resource areas is not denied. That cooperation will continue.

CHAPTER FOUR

CHAPTER FOUR

FOREST MANAGEMENT DIRECTION

I. INTRODUCTION

This chapter describes:

- Management Goals established during the planning process.
- The desired condition of the Forest in future years.
- Forest-wide Standards which apply to any area of the Forest.
- Management Area Standards for managing specific areas of the Forest.
- The expected outputs from management of the Forest.
- Summaries of the expected resource conditions under this plan.

Management direction and the expected outputs will be used by the program development and budgeting process to translate the Plan's goals and objectives into on-the-ground results. Appropriated budgets, contracts, and other instruments which currently govern the use and occupancy of the Forest's lands and resources are required to comply with all provisions of the Plan as soon as possible after issuance of the "Record of Decision" (see Glossary).

Implementation and project plans designed to give further guidance for management and development activities are developed "under the umbrella" of the Plan, as discussed in Chapter Five. Table FIVE-1, in Chapter Five of this plan, and Table I-1 in the DEIS, illustrate which Forest management plans now in existence are incorporated into the Plan. These plans, as listed in the table, become part of the management direction in the Plan.

The management direction presented in this chapter is developed within five broad categories:

A. **Forest Management Goals.** These are multiple-use goals established in the planning process to guide desired future conditions and development of the Forest.

B. **Desired Future Condition of the Forest.** What the Forest will look like at the end of 10 years and 50 years after management direction has been implemented.

C. **Forest Management Objectives.** The anticipated level of goods and services to be produced as the Plan, with projected budgets, is fully implemented.

D. **Forest-wide Standards.** Requirements which establish the conditions which must be maintained while attaining the objectives of the Plan.

E. **Management Prescriptions and Management Area Standards.** Management policies and practices that apply to all activities which affect designated land areas.

II. MANAGEMENT DIRECTION

A. Forest Management Goals

The following Forest-wide goals summarize the desired future state or condition of the Forest's resources. Management objectives and prescriptions in the subsequent sections of the Plan are designed to achieve the Plan's specified goals. These goals are designed to address the Public Issues and management concerns discussed in Chapter Three as well as comply with applicable laws and regulations.

1. Provide all persons equal opportunity regardless of race, color, creed, sex, marital status, age, handicap, religion, or national origin.

2. Assess and document all cultural resources; protect, maintain and/or enhance prehistoric and historic sites, buildings, objects, and antiquities of local, regional, or national significance.

3. Protect the unique and valuable characteristics of floodplain and riparian zones; maintain or increase aquatic habitat complexity and diversity; and assure the long-term production of associated wildlife and plant species within the full spectrum of forest riparian areas.

4. Protect and maintain the character and quality of water; provide long-term sustained production of water; and provide a favorable flow from the Forest for both on-Forest and off-Forest water users.

5. Maintain or increase fish habitat capability and assure the long-term sustained production of fish.

6. Maintain and/or restore soil productivity throughout the Forest; stabilize and/or restore damaged or disturbed soil areas.

7. Provide management and maintenance of active landslides and large, slow moving earthflow areas.

8. Maintain viable wildlife population areas in perpetuity; maintain or enhance the overall quality of wildlife habitat; and provide management of deer and elk winter range.

9. Maintain or enhance plant and animal diversity; protect and/or improve habitat for the perpetuation of plants and animals listed by state or federal agencies as threatened, endangered, or sensitive.

10. Provide safe, efficient access for the movement of people and materials involved in the use of forest lands; provide for construction and maintenance of roads at a level that will minimize environmental damage.

11. Facilitate the exploration and development of energy and mineral resources, where available, on the Forest while maintaining compatibility with other resource values.

12. Produce the optimum quantity of wood fiber at sustainable levels consistent with various environmental constraints and economic efficiency; provide adequate restocking of harvested areas.

13. Provide fire protection, fuels treatment, and pest management programs that are responsive to land and resource management goals and objectives.

14. Provide law enforcement and Search and Rescue services that are responsive to public need; provide support to other agencies and local officials.

15. Cooperate with other federal, state, and local regulatory agencies to protect air quality and minimize impacts on smoke sensitive areas.

16. Provide a broad range of year-round, quality dispersed recreation opportunities in an undeveloped forest environment.

17. Provide visitors to the Forest with visually appealing scenery.

18. Manage vegetation and provide quality forage conditions for domestic livestock while preventing unacceptable damage to resources by livestock grazing.

19. Provide the optimum pattern of land ownership within the Forest considering resource goals and management efficiency; provide efficient management of administrative sites and facilities.

20. Provide for the use and occupancy of the Forest's lands by public or private interests when such is appropriate and compatible with other resource objectives.

B. Future Condition of the Forest

As the Forest Plan is implemented over a number of years, the conditions of the Forest will change. The following pages describe what the Forest should be like after 10 years and after 50 years under the Plan.

1. The Forest in ten years.

Ten years is a relatively short time in the life of a forest. Therefore the Forest's overall character a decade in the future will be very similar to its existing condition. For example, significant difference in the supply of individual types of recreational opportunities is not expected to occur during the next ten years. Popular scenic travel routes will retain their natural beauty and character. Timber harvest will be managed intensively where it conflicts least with other resources. Current populations of fish and wildlife will be maintained or increased by emphasizing the habitats of these animals.

Timber. During the next ten years, about half of the timber harvested will be older mature Douglas-fir from high quality, timber-growing sites. In the first several years, planting, precommercial thinning, and plantation control will be common. In subsequent years, however, many new stands will be established by natural regeneration instead of planting. Areas where timber is managed less intensively will exhibit smaller openings, a variety of age-classes, and less intensive silvicultural activity. Road construction will continue somewhat below present levels.

Fish and Water. The Bull Run will continue to be managed for high quality water. In general, there will be little apparent change in Forest-wide riparian areas associated with perennial streams, lakes, reservoirs, and wetlands. These areas will reflect relatively high vegetative and structural diversity most closely associated with mature and old growth stand conditions. Many individual areas, totaling roughly 10-15 percent of the total areas for these riparian area types, will reflect early seral stage vegetation associated primarily with past timber harvest activities. Riparian areas for intermittent streams, seeps, and springs will increasingly show a shift toward early seral stage vegetation, particularly on those lands with a timber emphasis allocation.

There will be localized improvement in riparian area and aquatic habitat (fish habitat and water quality) conditions. This will be most apparent in Special Emphasis Watersheds (Mill Cr., Fifteenmile Cr. and its tributaries, and Still Cr.), Key Site Riparian Areas, and stream systems where rehabilitation and enhancement activities have been completed.

Wildlife. Habitat will be managed for the northern spotted owl, pileated woodpecker, pine marten, and other wildlife species represented by the named indicator species. Fifty-one areas of old growth will be set aside for spotted owl habitat. Identified mature and old growth timber will be managed for the woodpecker and marten along with managing for some timber volume, recreation, and other uses.

The mixture of forage and cover needed by deer and elk will be addressed. Seeding for grass and forbs will enhance these animals' habitat. Timber in the pine/oak habitat on the east side will be managed partly to benefit turkeys and silver gray squirrels.

Snags and trees will be left in areas where timber will be harvested. Large, woody debris will be left on the ground to continue the nutrient cycle and provide shelter for animal species which utilize such materials.

Recreation. Outdoor recreation opportunities on the Forest will be available in a variety of settings. Operation and maintenance of facilities for developed recreation will be financed at standard service level. All deteriorated sites will be rehabilitated or closed. The Forest shall complete a developed site priority ranking to be used to allocate operations and maintenance funds. This process will include evaluating variables such as amount of use, cost per unit of output, and the uniqueness of the site. The ranking may result in closing of some developed sites and the expansion of others. Savings produced by closing some developed sites will be used to further improve or expand capacity at sites operating near capacity.

Opportunities for dispersed recreation in a roaded setting will be plentiful. Activities such as hunting, sightseeing, ORV use, dispersed camping, cross-country skiing, and fishing will be typical. Opportunities for dispersed recreation in unroaded areas will be less plentiful. However, large Special Interest Areas such as Roaring River/Mitchell Flats, and the Face of the Columbia Gorge will offer more primitive types of unroaded recreation.

There are five Wildernesses, plus a small part of the Mt. Jefferson Wilderness, on the Forest that will provide primitive recreation opportunities along with scenic, historical, and ecological experiences. Overused areas that have lost some of their wilderness values will be gradually restored to more primitive conditions. Only the unroaded areas managed as Special Interest Areas, i.e. Roaring River, one half of Eagle, and Olallie, will remain unroaded. The Clackamas River, Salmon River, and Roaring River will be recommended for inclusion into the Wild and Scenic Rivers System.

Major roads and highways designated as scenic travel routes will continue to appear in or near a natural condition.

Air Quality. The existing character of the air quality will continue to improve from the past. Reduced burning during the summer months will provide for increased visibility. The amount of suspended particulates emitted will be reduced significantly due to improved burning technology and improved evaluation techniques to predict when burning is needed.

2. The Forest in 50 years.

After the Forest has been managed for 50 years as provided by this Plan, its present appearance will change to a more managed appearance. For example, it will be obvious that timber in certain areas will have been intensively harvested while wildlife habitats will have been preserved in other areas. Recreation use will intensify. Privately operated recreation sites will be common.

Timber. After 50 years, almost all stands suitable and programmed for timber production will have been harvested. In areas intensively managed for timber, many of the existing mature and overmature stands will have been harvested and replaced with more vigorous and faster growing, managed stands. Regeneration will be accomplished primarily through natural methods. Emphasis on stocking level control measures will increase. More of the total wood fiber in trees will be utilized if markets exist for it, resulting in less residue available for fuelwood.

Fish, Water and Wildlife. Aquatic habitat capability over the long term will be stable and improving. Standards to manage fish and water resources efficiently will be in full effect. The implementation of rehabilitation and improvement programs will increase fish populations. Wildlife habitat diversity will be moderate with identifiable tracts of mature and old growth stands managed for species depending on them. The majority of population levels will stabilize or decrease. Deer and/or elk populations may decrease.

Recreation. Recreation in the Forest 50 years from now will depend to a significant extent on sites privately developed and operated. As demands for winter sports, organizational activities, and overall developed recreation opportunities increase, they will be met by concessionaires or permittees. Primitive and semi-primitive recreation opportunities will be limited to Wilderness and Special Interest Areas where natural conditions will be maintained. In Wilderness, heavily used trails, trailheads, and campsites will have been returned to a more primitive state. As the demand for dispersed recreation in an unroaded setting begins to exceed capacity, systems to limit usage such as reservations, fees, or other methods may be initiated.

Visual corridors along popular travel routes should appear near-natural. Small openings and a variety of vegetation will be visible along with improvements in viewpoints and vistas. Visitors who travel on roads outside main transportation corridors will pass a mosaic of timber-cutting patterns. These will vary in size, shape, and arrangement. These areas will appear as part of an intensively managed forest.

Air Quality. Vegetation and fuel management will require less use of prescribed fire as timber harvesting changes from regeneration harvest to commercial thinning. The number of acres requiring prescribed fire will be approximately half the number in the first decade of the plan. The amount of suspended particulates emitted will subsequently be reduced proportionately. Hence, visibility will continue to be improved.

C. Forest Management Objectives

1. Introduction.

The National Forest Management Act (NFMA) requires the establishment of standards and guidelines for six major forest resource management practices:

- Harvest cutting methods.
- Maximum size and dispersal of timber harvest openings and state of vegetation.
- Timber management intensity and timber utilization.
- Air quality.
- Utility and transportation corridors.
- Northern spotted owl habitat management.

The standards and guidelines required by NFMA were published by the Forest Service in its Regional Guide for the Pacific Northwest Region, May 1984. The standards in this guide specified actual region wide criteria to be applied to management activities on the National Forests in Region 6.

In addition to the standards and guidelines laid out in the Regional Guide, the following Standards and Management Prescriptions are applicable to all lands managed by the Mt. Hood National Forest. They supplement, but do not replace, standards and guidelines in the Regional Guide.

The Standards presented in the following section of the Plan provide the conditions under which management practices will be implemented in achieving the objectives of this Plan. The objectives for management of the Forest are presented in the Management Prescriptions following the Forest-wide Standards, and in the output Table FOUR-12, RESOURCE OBJECTIVES.

Note to readers: In reading the standards it will be helpful to remember the following use of specific verbs that appear in the standards. These verbs are used to convey the intent of the management prescriptions and accompanying standards. (Note that Standards for the Bull Run Management Area are written as they appear in the Bull Run Final Environmental Impact Statement and do not follow these conventions.)

VERB	INTENT OF STANDARD
MUST, SHALL	Action is mandatory.
SHOULD, OUGHT	Action is required unless reason exists for not taking action, as identified in environmental assessments.
MAY, CAN	Action is optional.
WILL*	Is not restrictive: applies only to a statement or future condition or an expression of time. ***Is not used in place of shall.**

D. Forest Wide Standards

1. Introduction

This section presents Forest wide standards that apply to all management activities implemented on the Mt. Hood National Forest without regard to which management prescription governs the management of the Forest's lands. In the section which follows, Forest wide standards are listed by management objective and according to functional activity.

FORESTWIDE STANDARDS by Functional Activity

HUMAN RIGHTS

1. Administration

   A. The Forest shall be managed and administered in such a manner as to provide all persons equal opportunity, regardless of race, color, creed, sex, martial status, age, handicap, religion, or national origin.

   B. The Forest's land shall be managed to minimize social and administrative barriers to legitimate uses of the Forest.

   C. Consultation with other groups (such as Indian Tribal Councils, Human Rights Advisory Board, Federal Women's Program, Hispanic Emphasis Program, Native American Program, The Black American Program) shall occur on a regular basis.

   D. The American Indian Religious Freedom Act must be considered in administration of the Forest's lands.

   E. Appropriate Indian group must be notified if traditional religious values are to be adversely affected by proposed administrative actions.

   F. The Forest should strive to protect the American Indians' rights to use and possess sacred objects on Forest lands, and protect and preserve the freedom to worship through ceremonials and traditional rites.

   G. The Forest shall maintain and implement an affirmative action plan.

   H. The Forest must conduct compliance reviews (required by Title VI of the Civil Rights Act of 1964) to insure administrative actions meet civil rights laws and regulations.

   I. The needs of the handicapped must be considered in employment opportunities.

2. Information and Education

   A. Special efforts will be made to inform the public, including minorities and the underprivileged, of benefits they are eligible to receive from Forest programs. Techniques and the media best suited to increase awareness and participation will be used.

HUMAN RIGHTS (pg. 2 of 2)

3. Facility and Site Management, Administration and Operation

   A. The needs of the handicapped must be considered in the design of Forest facilities.

   B. The Forest should strive to protect and preserve American Indians' access to traditional religious sites and areas.

   C. The Forest should strive to provide appropriate management protection of traditional Indian religious sites and areas. Management must be coordinated with religious leaders of the Confederated Tribes of the Warm Springs Reservation, and other appropriate Indian groups.

CULTURAL RESOURCES MANAGEMENT

1. Planning and Inventory

   A. All cultural resources shall be managed as though eligible for the National Register of Historic Places until fully evaluated and a management decision is reached on the resources' disposition. (Required by law.)

   B. Consultation with other agencies (such as The State Historic Preservation Office, The Advisory Council on Historic Preservation, appropriate Government bodies, and others as appropriate) must occur when required by law or it is in the public interest. (Required by law.)

   C. Depression era administrative buildings must be inventoried. Eligible buildings should be nominated to the National Register. (Required by Forest Service Manual.)

   D. Management plans must be prepared for each National Register property, or historic property of substantial value, or property under Granger-Thye Permit. (Required by Forest Service Manual.)

   E. Cultural resource inventories must be completed during the project planning stage for all proposed projects which may potentially affect a cultural resource. Projects requiring a cultural resource inventory include all Federally funded undertakings, and undertakings requiring a Federal permit. Inventories of other areas on the Forest's lands must be completed as opportunities occur. (Required by Forest Service Manual.)

   F. Field survey results must be documented, to the extent needed to allow a review of their technical adequacy. (Required by Forest Service Manual.)

2. Evaluation and Assessments

   A. All proposed projects which may potentially affect a cultural resource shall be assessed for their potential effect on National Register or eligible properties using the criteria of effect and adverse effect. Projects include all Federal untertakings, Federally funded untertakings, and undertakings requiring Federal permit. (Required by law.)

B. Cultural resources that may be affected by project activities shall be evaluated using the criteria of evaluation to determine their eligibility to the National Register. Evaluations of other cultural resources must be completed as opportunities occur. (Required by law.)

C. Cultural resources that meet the criteria of eligibility should be nominated to the National Register. (Required by law.)

3. Protection and Enhancement

A. When project avoidance of acultural resource is not practicable, a mitigation plan must be completed. Mitigation actions must be completed and documented before project activities begin. (Required by law.)

B. To the extent practicable, cultural resources should be protected from substantial damage by human depredation or natural destruction.

C. Project activities must be monitored when they occur within 200 feet of a known cultural resource.

D. Land use permits, contracts, and other types of land use/occupancy authorities issued or agreed to, should contain stipulations or clauses for the protection or mitigation of cultural resources.

E. National Register or eligible historic buildings must be maintained to the maximum extent feasible. (Required by law.)

F. Suitable cultural resources should be developed and interpreted for recreational use when adequate provisions are available to protect the resource. (Required by law.)

RIPARIAN AREAS

1. These standards apply to all project activities which occur within and affect Forest riparian areas.

   A. Projects which may affect riparian management areas (RMAs) should conform to established standards. Opportunities for rehabilitation or improvement of riparian dependent resources should be identified and scheduled.

   B. RMA will be established as the primary management unit for the riparian area and will include sufficient upland transition zone to meet riparian standards.

   C. General riparian management areas delineated along class I, II, & III streams must include the total riparian area within the selected drainage or subdrainage.

   D. The RMA for lakes, reservoirs, wetlands, seeps, and springs should be established on a case-by-case basis and will define the most logical management unit for single or multiple riparian areas.

RIPARIAN AREAS (pg. 2 of 6)

The following table depicts the Forest wide standards describing conditions to be maintained within riparian management areas. The standards are listed by riparian resource component: soil, water storage, aquatic habitat, terrestrial habitat, water quality.

TABLE FOUR-1 RIPARIAN AREA COMPONENT MATRIX

2. Soils

CONDITIONS					STANDARDS
Class I, II & III Streams	Class IV Streams	Lakes and Reservoirs	Wetlands	Seeps and Springs	
X	X				2A. Generally no more than 20% of a project activity area should have exposed or compacted soils (see soils standards for definition of Activity Area).
		X	X	X	2B. Maintain ground cover on 90% of riparian management areas.
		X	X	X	2C. Less than 10% of the riparian management area should be in a compacted condition.
		X	X	X	2D. Avoid compaction in wet or saturated soil areas within riparian management areas.
X	X	X	X	X	2E. Maintain slope stability in, and adjacent to, riparian management areas.

NOTE: An "x" in a column in the matrix to the left of the standards indicates the riparian area type to which the standard applies. An "x" in parenthesis indicates deviations from the standard.

TABLE FOUR-1 RIPARIAN AREA COMPONENT MATRIX (con't)

3. Water Storage

A. Maintain existing capability of floodplains to store and route floodwaters.

4. Aquatic Habitat

CONDITIONS					STANDARDS
Class I, II&III Streams	Class IV Streams	Lakes and Reservoirs	Wetlands	Seeps and Springs	
X	X		(X) (Ponds)		4A. Maintain or increase existing aquatic habitat complexity.
X					(1) Maintain or increase low flow pool volume.
X	(X) 50%)	(X) (Lakes only)	X	(X) (50%)	(2) Maintain ≥ 90% of in-channel large woody debris (LWD). Emphasize retention of multi-piece accumulations and root wads with attached boles.
(X) (Class I & II only)		(X) (Lakes only)	X (Ponds)		4B. Maintain or increase effective in-stream cover on ≥ 90% of portion of the riparian area that is providing fish habitat.
X	X	X			4C. Maintain or restore streambank or shore line stability of the riparian management area.

TABLE FOUR-1 RIPARIAN AREA COMPONENT MATRIX (con't)

CONDITIONS					STANDARDS
Class I, II & III Streams	Class IV Streams	Lakes and Reservoirs	Wetlands	Seeps and Springs	
X		X	X		4D. Maintain or increase the area and quality of special aquatic habitats. These include but are not limited to: Alcoves, secondary and overflow channels, and associated ponds and wetlands.
X		X			4E. Maintain or improve passage for adult and juvenile anadromous fish. Maintain or improve passage for resident trout unless action is determined impractical in a project environmental assessment.
5. Terrestrial Habitat					
X		X	X		5A. Maintain or increase species and structural diversity of vegetation on 90% of the riparian management area. (RMA).
X		X	X		5B. Maintain at least 45% of the RMA in old growth (a 200+ year age class with multi-layered canopy. Maintain at least 25% of the stand in a mature stand (100-199 year age class) condition.
X		X	X		5C. Maintain or increase the amount and quality of edge habitat.

TABLE FOUR-1 RIPARIAN AREA COMPONENT MATRIX (con't)

CONDITIONS					STANDARDS
Class I, II & III Streams	Class IV Streams	Lakes and Reservoirs	Wetlands	Seeps and Springs	
X		X	X		5D. Maintain or increase the mix of tree species.
X		X	X		5E. Maintain at least 60% of the potential for large woody debris (LWD) input into aquatic ecosystems.
X		X	X	X	5F. Provide dead and defect-tree habitat to sustain 90% of the theoretical maximum population of primary excavators.
X	X	X	X	X	5G. Maintain at least 90% of available dead & down pieces per acre (of at least 40 cu. feet each) in varying stages of decomposition.
	6. Water Quality				
X					6A. Maintain summer water temperature regimes to protect existing on and off-Forest beneficial water uses. Forest management practices shall not cause the 5-day average maximum water temperature to exceed 65°F.

TABLE FOUR-1 RIPARIAN AREA COMPONENT MATRIX (con't)

CONDITIONS					STANDARDS
Class I, II & III Streams	Class IV Streams	Lakes and Reservoirs	Wetlands	Seeps and Springs	
X					6B. Where practical, increase shading on streams where:
					(1) The 5-day average maximum summer water temperature exceeds 65°F.
					(2) Increased water temperatures are likely to reduce off-Forest beneficial water uses.
X	X	X			6C. To the maximum practical extent, prevent accelerated sediment delivery to streams, and seeps and springs.

WATER

These standards are for monitoring and protecting water quality, and for managing water systems on the Forest.

1. Administration/Management

   A. A state water right must be obtained for all water uses on the Forest (Water uses covered by the [Reservation Principle] are excepted.) Under this principle,National Forests have rights to water traditionally used in management.

2. Resource Improvement and Maintenance

   A. The character and quality of water areas should be maintainedconsistent with the Riparian Management Area the water body is located within.

3. FA & O Facility

   A. Operate, maintain, and/or upgrade, potable water systems in a manner which complies with appropriate public laws.

   B. Potable water systems not meeting standards and public health requirements shall be immediately modified, or closed.

   C. Operate, maintain, and/or upgrade, waste water and sewage treatment facilities in a manner which complies with appropriate public laws.

   D. Waste water systems and sewage treatment facilities not meeting public health laws shall be modified, or closed.

4. Dam Administration

   A. Dams within the Mt. Hood National Forest shall be operated, maintained, and managed in a manner that conforms with public laws and provides safety for Forest visitors.

   B. Dams within the Mt. Hood National Forest that become unsafe or do not meet applicable laws should be repaired, modified, or removed.

FISHERIES

1. Administration

   A. Fish habitat capability must be maintained at no less than the existing level.

   B. Impact on habitat for the management indicator species group must be determined for each project in terms of habitat quality, quantity, and distribution.

   C. Management indicator species groups must be monitored to determine relationships of proposed habitat changes to population trends. Monitoring will be conducted in cooperation with the Oregon Department of Fish and Wildlife (ODF&W) to the extent practicable.

2. Habitat Improvement and Maintenance

   A. Increase fish habitat capability through capability, rehabilitation, and/or enhancement project investments. Implementation should utilize a variety of funding sources.

   B. Development and use of lakes must be coordinated to complement ODF&W fish management objectives and maintain the capability of the aquatic habitat:

      (1) The nature and extent of facilities at all lakes should be consistent with site-specific riparian objectives and desired use levels.

      (2) To minimize the potential for over-use, vehicle access should not be provided (normally) or, shall be controlled within 1/2 mile of lakes designated for dispersed, nonmotorized recreation. (See following list.)

TABLE FOUR-2 LAKES THAT SHOULD BE MANAGED FOR "WALK IN" ACCESS

Lake	Location	Ranger District
Anvil	T5S, R8E, S17	Clackamas
Averill	T9S, R8E, S4	Clackamas
Baldy	T3S, R6E, S28	Zigzag
Bear	T2N, R9E, 18, 19	Hood River
Boulder	T45,R8e,32,5	Barlow
Brown, North	T8S,R8E,S27	Clackamas
Brown, South	T8S, R8E, S27	Clackamas
Buck	T5S,R8E,S30	Clackamas
Bump	T8S, R8E, S28	Clackamas
Catalpa	T45,R9E,S14	Bear Springs
Cottonwood Meadows	T5S, R7E, S28	Clackamas
Cripple Creek	T5S, R7E, S28	Clackamas
Cub	T9S, R8E, S5	Clackamas
David	T9S, R8E, S8	Clackamas
Dinger	T5S, R8E, S9	Bear Springs
Donna	T9S, R8E, S10	Clackamas
Double Peaks	T9S, R8E, S9	Clackamas
Enid	T3S, R8E, S13	Zigzag
El	T9S, R8E, S2	Clackamas
Finley	T9S,R8E,S3	Clackamas
First	T9S, R8E, S2	Clackamas
Fish	T8S,R8E,S34	Clackamas
Frazier	T5S,R7E,S9	Clackamas
Gifford	T9S,R8E,S2	Clackamas
Gifford, Lower	T9S,R8E,S2	Clackamas
Head	T9S,R8E,S2	Clackamas
Hidden	T3S,R8E,S12	Zigzag
High	T9S,R8E,S6	Estacada
Huk	T8S,R8E,S27	Clackamas
Huxley	TS4,R6E,S28	Estacada
Indian, South	T9S,R8E,S16	Clackamas
Indian, North	T9S,R8E,S9	Clackamas
Jean	T3S,R10E,S17	Barlow
Jeni	T4S,R7E,S31	Estacada
Little Boulder	TS4,R10E,S31	Barlow
Lower	T9S,R8E,S2	Clackamas
Memaloose	TS5,R8E,S31	Estacada
Mirror	T3S,R8E,S23	Zigzag
Nekbobets	T9S,R8E,S10	Clackamas
Paste Creek Pond	T7S,R6E,S1	Clackamas
Plaza	T4S,R7E,S18	Zigzag
Pyramid	T5S,R7E,S11	Clackamas
Rainy	T2N,R8E,S25	Hood River
Red	T9S,R8E,S8	Clackamas

Table FOUR-2 LAKES THAT SHOULD BE MANAGED FOR "WALK IN" ACCESS (con't)

Lake	Location	Ranger District
Rimrock	T9S,R8E,S10	Clackamas
Ring	T9S,R8E,S10	Clackamas
Rock, Lower	T5S,R7E,S8	Estacada
Rock, Middle	T5S,R7E,S8	Estacada
Rock, Upper	T5S,R7E,S17	Estacada
Round	T8S,R7E,S17	Clackamas
Salmon	T4S,R7E,S16	Zigzag
Sandstone Pond	T5S,R6E,S28	Clackamas
Serene	T5S,R7E,S7	Estacada
Sheep	T9S,R8E,S4	Clackamas
Shellrock	T6S,R7E,S17	Clackamas
Shining	T4S,R6E,S36	Estacada
Si	T8S,R8E,S33	Clackamas
Skookum	T6S,R5E,S35	Estacada
Sluice Creek Pond	T7S,R6E,S1	Clackamas
Sorber Ponds #1 & 2	T6S,R6E,S2	Clackamas
Sportsman, East	T9S,R7E,S1	Clackamas
Sportsman, West	T9S,R7E,S2	Clackamas
Spud, Big	T9S,R8E,S4	Clackamas
Spud, Little	T9S,R8E,S4	Clackamas
Squirrel	T8S,R8E,S34	Clackamas
Surprise #1	T5S,R6E,S27	Clackamas
Surprise #2	T6S,R5E,S27	Estacada
Surprise #3	T8S,R8E,S22	Clackamas
Suzi	T4S,R7E,S31	Estacada
Tag Creek Pond	T6S,R7E,S18,19	Clackamas
Tubb	T9S,R8E,S2	Clackamas
Twin Lakes	T45,R9E,S49	Bear Springs
Upper Lake	T85,R6E,S29,30	Clackamas
Veda	T45,R8E,S2	Zigzag
View	T9S,R8E,S14	Clackamas
Wall	T9S,R8E,S4	Clackamas
Warren	T2N,R8E,S16	Hood River
Wahtum	T1N,R8E,S10,11	Hood River
Wendy Meadows	T5S,R8E,S21	Clackamas
Wind	T3S,R8E,S26	Zigzag
Yellow Jacket	T8S,R8E,S34	Clackamas

SOIL PRODUCTIVITY

NOTE: The purpose of these standards is to protect, and/or restore soil productivity throughout the Forest.

1. Administration/Management

   A. No more than 20% of any activity area, with the exception of developed sites, shall be in a detrimental soil condition from a combined impact of compaction, puddling, or severe burning.

   B. Vertical displacement of compacted soil on activity areas, especially compacted or puddled areas, shall not be deeper than 12 inches below the mineral soil surface.

   C. When projects have the potential for significant soil damage and/or disturbance, as delineated in standards A and B above, stabilization and/or restoration of damaged and/or disturbed areas shall be provided. Stabilization and/or restoration shall be done in a timely manner.

   D. Previously unstabilized and damaged soil areas shall be rehabilitated.

GEOLOGY

1. Inventory and Evaluation

   A. Presently stable areas shall be maintained.

   B. Forest Service activities must be designed such that earth flow areas will not be reactivated or accelerated.

   C. Forest Service activities must be designed so that known active landslides with slopes of 30% or less shall not be accelerated or enlarged:

      (1) Surface drainage should be maintained or improved.

      (2) Where practicable, road construction should not occur.

   D. On active slides with slopes greater than 30%:

      (1) Present stands of timber should be maintained. Chargeable timber harvest activities shall not occur.

      (2) Surface drainage should be maintained or improved.

      (3) Sidecasting of rock material in the construction or maintenance of roads and/or landings shall not occur.

      (4) Where practicable, road construction should not occur.

      (5) If roads are necessary, they shall be closed and put to bed when the necessitating project is complete.

   E. The following standards shall apply in debris slide/debris flow areas:

      (1) Surface drainage should be maintained or improved.

      (2) Sidecasting of rock material in the construction or maintenance of roads and/or landing shall not occur.

   F. Slope stability shall be maintained during construction/reconstruction of roads. Excavated material shall not be allowed to create or accelerate slope instability.

2. Site-specific Development Proposals

   A. Public Safety shall be provided for all activities in high risk geologic hazard areas.

   B. A geologic analysis shall be required for all proposed actions in high risk geologic hazard areas.

WILDLIFE

1. Surveys, Planning, Prescriptions, Coordination, Administration

   A. Viable wildlife populations shall be maintained in perpetuity.

   B. Threatened, endangered or sensitive species, and habitat for those species, shall not be adversely affected.

   C. All projects that may affect threatened, endangered, or sensitive, species and/or habitat for these species, shall have a documented "Biological Evaluation" as part of the project plan.

   D. All Forest Service activities must be reviewed for impacts on habitat for "management-indicator species," and for impacts on T & E species. Impacts will be determined for each project in terms of habitat quality, quantity, and distribution. (Required by Regional Guide for Pacific Northwest Region.)

   E. Management-indicator species shall be monitored to determine relationships of proposed habitat changes to population trends. (Required by Regional Guide for Pacific Northwest Region.)

   F. Plant and animal community diversity shall be maintained or enhanced. Management shall protect and/or improve habitat for T & E species and for management-indicator species.

   G. Activities which are likely to impact federally listed species (threatened or endangered) must be coordinated with the Fish and Wildlife Service.

2. Habitat Improvement and Maintenance

   A. The northern spotted owl shall be considered a "management-indicator species" in Forest Planning. Viable populations of northern spotted owls shall be maintained. (Required by Regional Guide for Pacific Northwest Region.)

   B. In order to insure that viable populations of existing and desired nonnative vertebrate species are maintained, habitat must be provided and managed to support, at least, a minimum number of reproductive individuals, and that habitat must be well-distributed so that those individuals can interact with others in the planning area.

WILDLIFE (pg. 2 of 2)

3. Structural and Nonstructural Habitat Improvement

   C. Dead and defective tree habitat, i.e. a minimum of 4 snags per acre, shall be provided in perpetuity with sufficient habitat improvement quality, quantity, and distribution to maintain dependent species at, or about 60% of their potential population capacity.

   D. A minimum of two down logs per acre, each over 40 cubic feet in gross volume, shall be maintained.

   E. Protection for crane, heron, and raptor nesting sites must be provided through special management direction on a case-by-case basis.

WINTER RANGE

The objective of winter range standards is to manage deer and elk winter range[1] and to provide quality habitat[2].

Winter range management, except as indicated in the following standards, do not restrict the management objectives of other identified management areas.

1. Dispersed Recreation
   (a) Use Administration
   (b) Trails

   A. Dispersed, winter recreation use will not be encouraged.

   B. Off-road vehicle use shall be prohibited from November 1 - June 1.

   C. Existing trails should be used and maintained at the maintenance class consistent with district trail development plans.

2. Developed Recreation

   A. Construction of new developed facilities or improvement of existing developed recreation sites should not be allowed if the project conflicts with winter range objectives.

3. Visuals

   A. The visual quality objectives established for the management area overlaying the winter range must be met.

4. Cultural Resources

   A. Interpretation of cultural resources should be allowed when the activity does not discourage use of winter range by deer and elk.

5. Range

   A. Grazing, when compatible with deer and elk winter use, should be allowed to occur.

6. Timber Management

   A. Existing natural meadows/openings shall not be planted to conifers.

WINTER RANGE (pg. 2 of 3)

B. Silvicultural Prescriptions shall provide for operating seasons to be limited to June 1 through November 1.

C. Firewood cutting shall be limited to designated sites within winter range between June 1 and November 1, and not allowed between November 1 and June 1.

7. Mineral

A. Common variety mineral activities including survey, exploration, and development shall only occur between June 1 and November 1.

8. Lands

A. Recommendations for permits, leases, rights-of-way, and easements must afford protection for deer and elk from November to June.

9. Transportation/Facilities

A. Road construction and maintenance shall be limited to between June 1 and November 1.

B. Effective road density shall not exceed 2 miles per square mile.

C. Road cuts must not disrupt known big game travel ways.

WINTER RANGE (pg. 3 of 3)

10. Protection Functions
    (a) Initial attack fire suppression
    (b) Escaped fire suppression
    (c) Wood residue treatment

    A. Preference shall be given to those suppression methods resulting in the smallest practicable area burned, commensurate with cost effectiveness, and having the least effect on the special wildlife habitat needs for deer and elk when on winter range.

    B. Residue treatment projects shall be restricted to June 1 through November 1.

1/ The "on-the-ground" location of "winter range" will be identified through use of field investigations.

2/ Quality habitat provides a balance of forage and cover within the normal home range of the animal. Forage is defined as vegetative areas with less than 60% combined canopy closure of trees and tall shrubs. Thermal cover is defined as a forest stand at least 40 feet in height with a tree canopy closure of more than 70%. This is achieved in closed sapling-pole stands and by all older stands, unless the canopy is reduced below 70%.

In addition to thermal cover, there is a need to provide optimal thermal cover. Optimal thermal cover is defined as a forest stand with 1) four layers (overstory canopy, sub canopy, shrub layer, and herbaceous layer), and 2) the overstory canopy can intercept and hold a substantial amount of snow, yet has dispersed small openings. It is assumed the optimal thermal cover is provided by areas which prohibit timber harvesting (such as Research Natural Areas, Wilderness, etc.) and other lands not suitable for timber harvest.

TRANSPORTATION SYSTEMS AND ASSOCIATED FACILITIES

1. Planning and Inventory

   A. Road management objectives must be established for all roads.

   B. Design standards for proposed road construction/reconstruction projects must be determined using specific criteria, including:

      (1) The resource management objectives.
      (2) Environmental constraints.
      (3) Safety.
      (4) Physical environmental factors.
      (5) Traffic requirements.
      (6) Vehicle characteristics.
      (7) Road uses.
      (8) Economics.

2. Construction and Operations

   A. Construction or reconstruction of roads must be based on documented needs that meet management objectives.

   B. Arterial or collector roads should normally be constructed and maintained for low clearance, mixed traffic.

   C. Local roads designated for long term constant service should be constructed and maintained to provide seasonal use.

   D. Other local roads, (needed to support Forest management activities) must be constructed/reconstructed, and maintained to a level consistent with road objectives that are based on expected use and need for the road.

   E. All roads shall be maintained to a level that will minimize environmental damage.

   F. Roads should be designated short term when local road construction is planned for project access and no future project needs are identified.

TRANSPORTATION SYSTEMS AND ASSOCIATED FACILITIES (pg. 2 of 2)

G. Construction of roads should minimize landform disturbance.

H. Vegetation control, as needed, must be done along Forest roads to provide safety and protect resources and investments. Work must meet visual quality objectives and the standards for the management area in which the work is performed.

I. As appropriate for the Forest's roads, road information and road entrance information including current road conditions, their situation, and the purpose of the road must be provided to the Forest's visitors.

MINERALS MANAGEMENT

1. Technical Inventory and Evaluations

   A. The impact of management activities on mineral resources must be assessed.

2. Processing Site Specific Proposals

   A. Appropiate stipulations, consistent with land management objectives, must be recommended to the authorizing official for the leasing, exploration, and development activities for mineral resources.

      (1) Facilities and ground disturbing activities which are inconsistent with the goals and standards for the Management Area in which they occur shall not be recommended.

      (2) Recommendations on all projects must minimize adverse impacts to other resources.

   B. Operating plans and supporting environmental analysis documentation shall be prepared prior to development of any surface-disturbing mineral activity.

   C. Proposals for developing minerals shall comply with all applicable laws, regulations, agreements, and environmental analysis requirements.

3. Administration of Operations

   A. No surface disturbing, minerals-associated activities shall take place until and operating plan has been approved.

   B. Rock resource areas should be managed and conserved to provide for future rock demand and other Forest uses.

   C. Unnecessary soil disturbance beyond the common variety mineral source area (quarry) shall be prohibited.

   D. Exhausted common variety mineral source areas (quarries) shall be rehabilitated/restored for other Forest resources and/or uses.

TIMBER MANAGEMENT

1. Silvicultural Systems

   A. Timber stands should not be regeneration harvested until they have reached or surpassed 95% of culmination of mean annual increment in cubic feet. Exceptions may be made where special resource considerations require earlier harvest. (Required by Regional Guide for Pacific Northwest Region.)

   B. Scheduled timber harvest activities shall occur only on those lands classified as suited for timber production. Timber cutting on unsuited lands may occur where necessary to salvage, protect other multiple use values or activities, or to perform research or administrative studies.

   C. The utilization standards to be used in determining harvest levels shall be separated into first decade and future decades. The following standards shall apply, except where individual market areas and/or specific products present opportunities for standards utilizing a higher proportion of the tree. (Required by Regional Guide for Pacific Northwest Region.)

TABLE FOUR-3 UTILIZATION STANDARDS

TYPE TREE	MINIMUM D.B.H. 1/ (inches)		MINIMUM TOP D.I.B. 2/ (inches)
	First Decade	There-after	
Existing mature trees, except lodgepole pine (first and future decades)	9	7	6
Existing commercial thinning size trees and lodgepole pine	7	7	4

1/ D.B.H. = Diameter At Breast Height 2/ D.I.B. = Diameter Inside Bark

   D. Even-aged management has been determined to be the usual management system for timber production on the Forest. (Required by Regional Guide for Pacific Northwest Region.)

E. Forest openings created by the application of even-aged cutting methods shall normally not exceed 60 acres in the Douglas-fir forest type and 40 acres in the other forest types. These acreages may be increased by not more than 50%, if such increases are justified in accordance with Regional Guide direction. (Required by Regional Guide for Pacific Northwest Region.)

F. Created openings must be separated by blocks of land that generally are not classed as created openings and that contain one or more logical harvest units. These areas shall be large enough and contain a stand structure appropriate to meet resource requirements of the plan. (Required by Regional Guide for Pacific Northwest Region.)

G. Refer to Forest-wide standards for winter range for treatments within winter range.

2. Cultural Treatments Reforestation

A. Timber harvesting shall be done in a way that assures that each area can be adequately restocked within 5 years after final harvest. Five years after final harvest means: 5 years after clearcutting, 5 years after final overstory removal, 5 years after seed tree removal, or 5 years after selection cutting. (Required by Regional Guide for Pacific Northwest Region.)

B. A harvested area of commercial forest land should no longer be considered a created opening for silvicultural purposes when trees are 4.5 feet high, meet the required stocking level, and are free to grow. (Required by Regional Guide for Pacific Northwest Region.)

C. Minimum stocking for the Mt. Hood National Forest is 125 trees per acre for all species and site groups. The minimum spacing between crop trees is 6 ft. Higher than minimum stocking levels must be specified by silvicultural prescriptions when desired. (Required by Regional Guide for Pacific Northwest Region.)

3. Vegetation Control and Pest Management

A. Competing vegetation shall be controlled where there is a possibility that timber harvest areas cannot be reforested within the required 5-year period without vegetation control. (Required by Regional Guide for Pacific Northwest Region.)

B. In timber harvest areas, measures shall be taken to:

(1) Prevent damage to plantation crop trees.

(2) Prevent stocking from falling below desired levels.

(3) Insure reforestation to desired levels within the prescribed 5 year period.

(4) Insure animal damage control, if appropriate.

C. Silvicultural methods and cultural treatments should be applied to reduce hazards from insects, diseases, and weed species. If normal insect surveillance indicates the threat of an epidemic, project level detection and control operation (including coordination with other land ownerships) should be accomplished on a Forest-wide basis. (Required by Regional Guide for Pacific Northwest region.)

D. Integrated pest management (IPM) strategies should be utilized to manage pests within the constraints of laws and regulations, and to meet the objectives of the management area.

4. Pesticide Use

A. An analysis of a full range of alternative methods of pest control must clearly demonstrate that pesticide use is the optimum method to use to meet management goals and control the pest before pesticides are used in the Forest environment.

B. Sensitive areas shall be monitored during pesticide operations in order to detect unanticipated non-target effects.

5. Noxious Weed Control

A. Noxious weeds should be controlled in harvest units, tree plantation, and in other openings in the Forest created by management activities.

B. The Forest must cooperate with state, county, other federal agencies, and other interested groups in surveillance and control of noxious farm weeds, and with other federal and state agencies in the monitoring and application of pesticides.

PROTECTION FUNCTIONS

1. Forest Management Non-Wilderness Planning and Analysis

   A. Fire management activities should minimize cost plus net value change commensurate with land management objectives.

2. Fire Prevention

   A. Fire prevention actions on the Forest must be performed to support the integrated fire management plan.

   B. Special attention shall be given to the prevention of industrial and debris disposal fires.

   C. Fire prevention activities shall be at Level III in areas of active industrial operations, at Level II in areas of concentrated public use, and at Level I on other lands (see Glossary for definitions of levels).

3. Secondary Attack Forces

   A. The Forest shall maintain cooperative agreements with other state and federal agencies for secondary fire attack forces.

4. Initial Attack-Fires
   (a) Suppression Action
   (b) Escaped Fire Situation

   A. All Wildfires must receive an appropriate suppression response. (Required by Regional Guide for Pacific Northwest Region.)

   B. Post fire rehabilitation of fire areas shall restore the areas to productivity and to conditions existing prior to the fire, or fires.

   C. Rehabilitation work shall be done in such a manner to meet the land management goals and standards of the management area in which the fire, or fires, occurred.

   D. The environmental impacts of developing pre-attack facilities shall be assessed prior to establishing the facilities.

PROTECTION FUNCTIONS (pg. 2 of 2)

5. Fuels Treatment
   (a) Activity Fuels
   (b) Natural Fuels
   (c) Area Maintenance
   (d) Wood Residue Treatment

   A. (See Forest-wide Air Quality standards for role of Prescribed Fire in Forest environment.) (Required by Regional Guide for Pacific Northwest Region.)

   B. Fuels treatment should provide for reductions in the hazard levels of fuels. The most cost-effective method or combination of methods should be used. Consideration must be given to protection standards and resource objectives.

   C. Management of dead, down woody material loading levels shall occur to support interdisciplinary management activities. (Required by Regional Guide for Pacific Northwest Region.)

6. Search and Rescue

   A. The Forest Service shall be responsive to the public need and must support and cooperate with local officials (county and sheriff).

   B. The Forest Service shall take a temporary lead role in any search and rescue emergency in which immediate and quick response will reduce suffering, reduce risk of personal loss, and save lives and property.

7. Law Enforcement

   A. Appropriate action shall be taken on violations of federal laws and regulations that occur on the Forest's lands.

8. Pest Management

   A. Integrated pest management (IPM) strategies should be utilized to manage pests within the constraints of laws and regulations, and meet the Forest's management objectives. IPM strategies include manual mechanical, cultural, biological, chemical prescribed fire and regulatory means. Strategy selection(s) should be based on environmental analysis. (Required by Regional Guide for Pacific Northwest Region.)

AIR QUALITY

1. Coordination

   A. The Forest Service must comply with all applicable air-quality laws and regulations and coordinate with appropriate air-quality regulatory agencies. (Required by Regional guide for Pacific Northwest Region.)

2. Planning

   A. The role and potential of fire as an integral part of the forest and rangeland environment shall be considered in obtaining multiple-use objectives in forest management:

      (1) Prescribed burning should be considered for use in meeting management objectives in areas where ecological studies show that fire has played a significant role in ecosystem development. (Required by Regional Guide for Pacific Northwest Region.)

      (2) Prescribed burning should be utilized only when careful analysis indicates that it will be effective and feasible. This analysis must include consideration of measures to mitigate impacts on air quality.

3. Operational

   A. Minimize the impact of prescribed burning on smoke-sensitive areas as designated in state smoke management plans and federal class I areas. Total emissions should be reduced 20% by 1995 from the baseline.

DISPERSED RECREATION ACTIVITIES

1. Planning and Inventory

   A. The Forest shall manage for a broad spectrum of year-round dispersed recreation opportunities and experiences in accordance with identified needs, and where they are not in conflict with management area standards. This includes managing for winter sports opportunities in snow zones.

   B. District trail plans must provide for year-round dispersal of use throughout the Forest. This includes winter trails in snow zones (with trails meeting the objectives stated in the plans) where they are not restricted by management area standards.

   C. Segments of older/abandoned/historic trails identified in district trail development plans for incorporation into trail systems should be incorporated into the development of trail systems and/or new trails.

   D. Designated snow-covered roads should be managed as part of the trail system during the winter season (for over-snow vehicles and/or skiing).

   E. Plans for projects with potential to adversely impact trails and associated facilities (identified in district trail development plans), and dispersed recreation sites must include measures to minimize impacts and provide for protection and/or restoration of the impacted trails, sites, facilities, and structures.

2. Facility and Site Management, Administration, and Operation

   A. Occupancy of dispersed recreation sites for other than recreation purposes shall not be allowed. Sites available for use by industrial camping shall be designated by district rangers.

   B. Trails, trailheads, and associated facilities (identified in trail development plans) and dispersed recreation sites impacted and/or adversely affected by timber sale operations, road construction, or other management activities, shall be rehabilitated, restored, and/or relocated (if in accordance with plans) by the activity causing the impacts.

   C. All sites will either be rehabilitated (upgraded to the standard service level) or closed during the first decade.

DISPERSED RECREATION ACTIVITIES (pg. 2 of 2)

3. Use Administration

   A. The "pack-in-pack-out" policy shall be encouraged at all dispersed recreation sites, and within all management areas. This policy may be supplemented with waste disposal "pick-up" if funding is available and the need is identified.

   B. Opportunities for off-road vehicle (ORV) use should be available except where not allowed by management area standards, and where determined to adversely impact land capability and resource values. (See Appendix C.)

4. Recreation Special Uses

   A. (Refer to Forest-wide Standards for Special Uses for Standards governing Recreation Special Uses.)

VISUAL RESOURCE MANAGEMENT

1. Visual Resource Planning

   A. The visual quality objectives adopted in the Plan for a management area (and intensities) are the minimum level of achievement. See Table Four-4.

   B. Rehabilitation actions shall be planned and scheduled in management areas where existing projects do not meet the assigned visual quality objective, provided that vegetation management is allowed in the area.

2. Facility and Site Construction

   A. Buildings must be located and designed to blend with the natural landscape character in both foreground and middleground of retention and partial retention.

3. Timber Management

   A. All harvest units must be located and designed to blend with the natural landscape character.

   B. Diversity of plant species and/or age classes shall be maintained (or increased where possible) in retention (FG and MG) and partial retention (foreground).

   C. Landings must not be visually evident in retention, and should not dominate over natural landscape character in partial retention.

   D. Cut stumps must not dominate over natural form, line, color, and texture in the foreground of retention and partial retention.

4. Soil, Water, and Air

   A. Ground disturbance created by permanent and/or nonpermanent structures or facilities must not remain visually evident in retention areas.

   B. Ground disturbance created by permanent and/or nonpermanent structure of facilities must not dominate over natural form, line, color, and texture in partial retention (foreground).

5. Minerals

   A. New rock quarries and stockpile sites should not be visually evident in retention.

B. New rock quarries and stockpile sites should not dominate over natural form, line, color, and texture in partial retention.

6. Transportation Systems/Facilities

A. Roads should not dominate in the form, line, color, and texture of the foreground and middleground of retention and partial retention.

B. New utility rights-of-way must be located and designed to blend with the natural landscape character in the foreground and middleground of retention and partial retention.

C. New transmission lines and communication towers must be screened, designed, and colored to blend with their surrounding in the foreground and middleground of retention and partial retention.

TABLE FOUR-4 VQO/PRESCRIPTIONS FOR MANAGEMENT AREAS

The following visual quality objectives are the minimum acceptable level of achievement for each management area. For example, PR is a higher level than M and is an acceptable achievement where M is the objective, but M is not an acceptable achievement where PR is the objective.

	SENSITIVITY LEVEL						
	fg 1	mg 1	bg 1	fg 2	mg 2	bg 2	3
CATEGORY A							
A1 BULL RUN	Manage Drainage In Accordance With FEIS						
A2 WILDERNESS	P	P	P	NA	NA	NA	NA
A3 RNA	P	P	P	P	P	P	P
A4 SPECIAL INTEREST	R	R	R	PR	PR	PR	PR
A5 UNROADED REC.	R	R	R	R	R	R	R
A6 ROADED REC.	PR	PR	PR	PR	PR	PR	PR
A7 OLD GROWTH	P	P	P	P	P	P	P
A8 SPOTTED OWL	R	PR	PR	PR	M	M	M
A9 KEY SITE RIP'N	R	PR	PR	PR	M	M	M
A10 DEV. REC.	R	PR	PR	PR	PR	PR	PR
A11 WINTER REC.	PR	PR	PR	PR	PR	PR	PR
A12 OUTDOOR EDUC.	R	R	R	R	R	R	R
B1 WILD RIVER SEGMENTS	P	P	P	P	P	P	P
CATEGORY B							
B1 SCENIC/REC. RIVERS	R	PR	PR	R	PR	PR	PR
B2 VIEWSHEDS	R	PR	PR	PR	M	M	M
B3 ROADED REC.	PR	M	M	PR	M	M	M
B4 PINE/OAK	R	PR	PR	PR	M	M	M
B5 WOODPECKER	R	PR	PR	PR	M	M	M
B6 WATERSHED	R	PR	PR	PR	M	M	M
B7 GEN. RIPARIAN	R	PR	PR	PR	M	M	M
B8 EARTHFLOWS	R	PR	PR	PR	M	M	M
B9 WILDLIFE/VIEWSHED	R	PR	PR	PR	M	M	M
CATEGORY C							
C1 TIMBER EMPHASIS	M	M	MM	M	M	MM	MM

Distance Zone And Sensitivity Level

fg 1 = foreground from level 1 travel route
fg 2 = foreground from level 2 travel route
mg 1 = middleground from level 1 travel route
mg 2 = middleground from level 2 travel route
bg 1 = background from level 1 travel route
bg 2 = background from level 2 travel route
3 = any distance zone from a level 3 travel route

Visual Quality Objective

P = Preservation
R = Retention
PR = Partial Retention
M = Modification
MM = Max Modification

Note: Management for visual purposes requires application of techniques contained in National Forest landscape management handbooks. These techniques may affect costs but are not expected to reduce yields.

RANGE MANAGEMENT

1. Range Resource Planning

   A. All range allotments must have an approved allotment plan under which to operate.

   B. Those lands suitable for providing a sustained yield of AUMs should be considered for commercial livestock grazing.

   C. Transitory forage on suitable lands should be considered for livestock grazing.

2. Range Administration, Operation, and Management

   A. Livestock grazing should not be allowed to cause unacceptable resource damage.

   B. Critical habitats essential to support the needs of other resources shall be protected from damage from livestock grazing within allotments.

3. Range Resource Inventory

   A. A range inventory and analysis must be initiated on range allotments when a significant change occurs in the vegetation or forage component.

   B. An allotment plan update must be initiated whenever a significant change occurs in carrying capacity, grazing system, or management of an allotment.

4. Range Structural Improvements - New

   A. Natural barriers to free movement of livestock, within an allotment, should be replaced with another form of barrier, if the barrier was necessary to maintain the required livestock control.

   B. Boundary fences shall be provided by the permittee.

   C. Permittee cooperation in construction of range improvements ought to be encouraged. The goal is 50% participation by permittees.

5. Range Structural

   A. Range structural improvements ought to be maintained within range allotments by the permittee.

6. Noxious Weed

   A. (Refer to Forest-wide Standards for Timber Management for standards governing Noxious Weed Control.)

LANDS PROGRAM

1. Land Ownership Planning and Land Ownership Adjustment

   A. Emphasis shall be to provide the optimum pattern of land ownership within the Forest, considering resource goals and efficiency of managing the Forest.

   B. All land ownership adjustment activities must be based on an approved land ownership plan.

2. Land Adjustment

   A. Lands that are acquired to meet Forest management or resource conservation needs must be those lands listed in the Forest Land Ownership Plan under the following priorities:

      Acquisition Groups

      Priority 1 - Group 1 Lands (See pg. 2)
      -These are key tracts needed to: (1) meet access or other administrative needs, (2) protect Forest's land against fire or trespass, (3) prevent damage to the Forest's lands, (4) solve important resource management, development, or conservation problems, (5) meet research needs, (6) carry out prescribed acquisition programs, (7) improve effectiveness of programs.

      Priority 2 - Group II Lands
      -(1) Other tracts which will become key tracts in the future, or (2) lands which are intermingled, or adjacent to, the Forest's lands and are valuable for watersheds, timber, or public recreation, or are needed to block in Forest's lands.

      Priority 3 - Group III Lands
      -Remaining lands suitable for exchange to private, or other non-Federal ownership.

B. The Forest's lands that are made available for exchange for lands in other ownership must be grouped within the following priorities:

Land Exchange Groups
GROUP 4 LANDS -- Priority 1
GROUP 3 LANDS -- Priority 2
GROUP 2 LANDS -- Priority 3

3. Land Classifications

A. All Forest land, and land in other ownership within the Forest's boundaries, must be classified into the following **land ownership groups:**

(1) GROUP I - Lands where Congress has either directly or indirectly instructed the Forest Service to retain ownership, or to acquire non-Federal lands for a designated purpose.

(2) GROUP II - Lands needed for special types of management and allocated for that purpose. (The objective is to retain national forest ownership and acquire lands in private ownership.)

(3) GROUP III -
(a) Consolidated areas of National Forest lands that are generally solid blocks. (The objective is to retain these lands to maintain contiguous blocks.)
(b) Areas of mixed private and federal ownership. (The objective is to rearrange ownership patterns to benefit commodity production goals and to utilize National Forest lands to acquire higher priority lands.)
(c) Isolated parcels that can best be managed by the Forest Service or some other public agency.

(4) GROUP IV - These lands include small isolated tracts of Forest land situated away from contiguous blocks of National Forest land. These lands are usually managed intensively for uses such as agriculture or recreation. (The objective is to make these lands available for disposal in exchanges to acquire lands in groups I & II.)

(5) GROUP V - These are lands which need more intensive study and planning before land ownership decisions can be made. (Land acquisition and disposal decisions will be deferred until completion of studies.)

3. Boundaries

   A. Property boundaries shall be located prior to any ground disturbing, or timber harvest activities, that occur near or adjacent to the Forest's property lines.

4. Withdrawals

   A. National Forest lands shall be withdrawn from mineral leasing under the following special circumstances: It is determined that the area, or site cannot be protected through normal regulatory processes.

5. Rights-of-way, Acquisitions, and Cost Share

   A. (Refer to Forest Service Manual and Handbooks on Right-of-way.)

6. Utility and Transportation Corridors

   A. Utility and transportation corridors shall be planned and located in a manner that consolidates the commitment of land to these uses and in a manner that minimizes ground and air disturbance. (Required by Regional Guide for Pacific Northwest Region.)

   B. Needs for new utility corridors must be determined in accordance with regional criteria. New corridors shall be located to utilize existing corridors whenever possible.

   C. Utility corridors shall be managed in accordance with the Forest vegetative plan for utility corridors.

   D. New proposals that cross multi-jurisdictional areas must be planned on an inter-agency basis. (Required by Regional Guide for Pacific Northwest Region.)

   E. Utility corridors should be examined to determine if there are any compatible resource uses for the lands within the corridors.

ADMINISTRATIVE SITES

1. Dispersed Recreation

   A. Public recreation opportunities are generally not compatible on administrative sites and should not be considered.

   B. Vehicles should not be permitted to operate off roads within administrative sites. Vehicle use must not conflict with the purposes of the administrative site.

2. Developed Recreation

   A. Public recreation opportunities are generally not compatible within administrative sites and should not be allowed.

   B. Points of interest such as cultural or biological features must be inventoried. Access may be provided when it does not conflict with the functions of the administrative site, or create security problems.

   C. Development must usually be appropriate to the urban or rural class on the recreation opportunity spectrum. In some instances, development appropriate to roaded modified class may be appropriate.

3. Visuals Management

   A. A minimum visual quality objective of modification must be met on administrative sites.

4. Wildlife

   A. Opportunities for wildlife management and enhancement should be considered, if compatible with the use of the site.

5. Fisheries

   A. Opportunities for management and enhancement of fish habitat and/or fisheries should be considered, if compatible with the use of the site.

6. Range Management

   A. Domestic livestock grazing should not be permitted within administrative sites.

ADMINISTRATIVE SITES (pg. 2 of 2)

7. Timber Management

   A. These shall be no chargeable timber harvest from administrative sites.

   B. Trees may be removed to protect life and property or as necessary for insect attack, disease control, or catastrophic event.

   C. Trees may be removed to allow for facility expansion or vegetation rehabilitation.

8. Soil, Water, & Air

   A. A water right must be acquired for all sources supplying water for domestic use or irrigation at administrative sites. (With the exception of water uses covered by the Reservation Principle; refer to Forest-wide Standards for Water.)

9. Minerals Management and Withdrawals

   A. Administrative sites shall be withdrawn from mineral entry and the mining law if it is determined that a site cannot be protected through normal regulatory processes.

   B. Common mineral materials sources should not be developed within administrative sites.

10. Special Uses

   A. Permits, leases, rights-of-way, or easements inconsistent with the purpose of the administrative site shall not be permitted.

11. FERC License

   A. Feasability studies must be conducted in a manner which does not interfere with operations of the administrative site.

12. Protection Functions

   A. Fire plans are required for all administrative sites.

   B. All persons living on an administrative site, or regularly employed at a site, must have a basic understanding of the fire prevention/suppression plan for that facility and a working knowledge of the location and use of fire fighting equipment available at the site.

SPECIAL USES

1. Recreation Use and Development

   A. Only dispersed recreation and recreation development which is compatible with existing special use permits, leases, or rights-of-way should be approved. Whenever practical, nonconforming recreation uses within existing permit areas must be terminated.

2. Recreation Special Uses

   A. A public service need must be demonstrated and the requested use must apply to a significant number of the recreating public, and/or there must be a genuine public need for the services, before any recreation special-use permits are recommended or issued. Both public benefits and public costs will be considered. If these criteria are met, the following shall apply in issuing recreation use permits:

      (1) The recreation experience provided under the permit must be compatible with the standards for the Management Area in which the use occurs, and all facilities provided must be in keeping with the Forest's environment.

      (2) The number of permits issued for a given recreation use shall be limited to the minimum possible.

      (3) The base of operations for permittees must be on private lands when possible.

      (4) Recreation use permit stipulations and facilities must be designed to minimize the impacts on other users and the Forest's resources.

      (5) Prospective permittees must demonstrate that they have the financial resources to support the proposed venture.

      (6) Permittees shall be expected to pay a fair share of maintaining Forest facilities used by the permittee and to reimburse the government for resource damage cost caused by their operations.

      (7) Prospective permittees shall be required to furnish a demand assessment.

B. The following additional criterion shall apply when issuing permits for recreation events: Applicants must pay a fee and be required to enter into a cooperative agreement.

C. No new recreational residence special use permits shall be issued. Existing permits for residences may be continued unless the site is needed for a higher use.

3. Wilderness

A. Special uses, permits, licenses, easements, patent applications, and rights-of-way applications for uses within wilderness shall not be approved, or reissued, except for those existing uses or permits that conform with, or are valid, under the Wilderness Act, Regulations, and/or, Wilderness Management Plans.

4. Visual Management

A. Structures and facilities allowed on special use permit areas, or proposed in new uses, must conform with visual quality objectives for the applicable management areas.

5. Wildlife

A. New permits, leases,or rights-of-way shall not be recommended for issuance, and existing uses will be discontinued, to the extent practical, in all types of wildlife habitat core and/or foraging areas.

B. Permits must provide sufficient constraints and requirements to minimize impacts to wildlife.

6. Fisheries

A. Permits must provide sufficient constraints and requirements to minimize impacts to fisheries resources.

7. Timber

A. Any timber harvesting regimes proposed for a special use permit area must be based on compatibility with the permit type and the area where permit is located.

SPECIAL USES (pg. 3 of 4)

8. Soil, Water, and Air

   A. Activities and improvements under a special use permit should be located outside riparian areas whenever practicable. Permits must provide sufficient constraints and requirements to minimize environmental impacts to soil, water, riparian, and air resources.

   B. Special use permits and FERC licenses for hydroelectric projects must provide sufficient constraints and requirements to minimize environmental impacts to soil, water, riparian, and air resources.

9. Minerals Management

   A. Permits and licenses for mineral resource exploration and development must provide sufficient constraints and requirements to minimize environmental impacts.

10. Special Uses, Non-Recreation

   A. Emphasis shall be on applicant development of any required environmental assessment of the proposed special use.

   B. Permits, leases, and rights-of-way not consistent, or not in conformance with, the management goals and standards for the management area in which it is planned to be located, shall not be recommended, or issued. Non-conforming uses shall be terminated as soon as possible, or the stipulations or requirements on existing permits (including long-term historical permits) must be negotiated to meet current requirements and standards.

   C. Uses which can be accommodated on private lands should not be recommended, and National Forest land should not be made available for support facilities for private development when private land is available for such support needs.

   D. When a special use permit area is no longer in use, it shall be rehabilitated.

   E. Permittees shall be responsible for, and required to participate in, the rehabilitation of their permit areas.

   F. All special use permit sites on the Forest must be managed in accordance with an approved plan, including those developed for commercial or other agency use.

SPECIAL USES (pg. 4 of 4)

11. Federal Energy Regulatory Commission (FERC) Permits

    A. Responses to proposed energy projects and the Federal Regulatory Commission must be made in a timely manner.

    B. Feasibility studies for proposed FERC permits must be performed in a manner which will not impair public use of the areas.

    C. The Forest must coordinate with the Oregon Dept. of Fish & Wildlife, U.S. Fish & Wildlife Service, the confederated Tribes of Warm Springs, and other agencies and organizations as appropriate when developing FERC permits.

12. Withdrawals

    A. Areas under special use permit or proposed for special use permit and/or other uses having unique or critical resource features shall be recommended for withdrawal under the public land laws if it is determined that the resources cannot be adequately protected through normal regulatory processes.

13. Protection Functions
    (a) Fire Planning, Fire Suppression
    (b) Initial Attack
    (c) Escaped Fire Suppression
    (d) Fuels Treatment

    A. Fire prevention needs for permittees must be determined specific for each permit area, based on compatibility to the permit use and the area where the permit is located.

    B. Fuels treatment required of permittees must be specific for each special use permit area, based on compatibility to the permit use and the area where permit is located.

E. Management Areas, Management Standards and Resource Area Prescriptions

1. Management Areas

Twenty-one management areas described in this Forest Plan are comprised of portions of the Forest managed in accordance with objectives and standards which will respond to the Public Issues.

These management areas form the basis for this Forest Plan and for the monitoring and implementation processes described in Chapter Five of this document. The Management Area maps accompanying this document depict the location of the management areas.

Management areas are grouped into three categories (A, B, and C) according to their type and degree of development. Following is a listing of the twenty-one management areas by category and a summary of the management activities that are designed to occur within each category of management areas.

CATEGORY A - MANAGEMENT AREAS:

Management activities in Category A Management Areas are designed to meet objectives of resources other than timber, and are often designed to result in near-natural conditions over time.

These areas generally have no chargeable timber harvest. Timber salvage operations may be permitted under certain conditions or restrictions. However, the total amount of salvage volume from Management Areas A2 thru A12 is not expected to exceed 1 million board feet per year.

Table FOUR-5 MANAGEMENT AREAS - CATEGORY A

Designation	Area Name	Acres 1/
A1	Bull Run Planning Unit 1/	90,600
A2	Wilderness	185,300
A3	Research Natural Areas	1,300
A4	Special Interest Areas	54,950
A5	Unroaded Recreation-No Timber Harvest	5,950
A6	Roaded Recreation-No Timber Harvest	750
A8	Northern Spotted Owl Habitat Areas 2/	37,350
A9	Key Site Riparian Habitat	11,700
A10	Developed Recreation Sites	650
A11	Winter Recreation Areas	6,450
A12	Outdoor Education Areas	450
	Category A-subtotal	395,450

1/ Scheduled chargeable timber harvesting occurs in the buffer zone as indicated in the existing Bull Run Planning Unit Final Environmental Impact Statement. However the physical watershed drainage is subject only to non-chargeable timber harvest.

2/ Adjusted for overlap. For example, the 12,650 acres of SOHAs (Management Area A8) occurring in Wilderness (Management Area A2) counted as Wilderness in this table.

CATEGORY B MANAGEMENT AREAS:

Chargeable timber harvest is scheduled in these areas. Management objectives are designed to acheive specific resource objectives, as well as produce timber, while achieving an objective of promoting a healthy, growing forest mosaic, through timber management.

In order to achieve the stated resource management objectives for specific management areas in this category and to meet ASQ goals, chargeable timber harvest is required to be scheduled in Category B Management Areas. Compared to Category C Management Areas, these Management Areas have additional restrictions regarding rate of harvest, sizes of openings, and minimum rotations; i.e., how old a timber stand is before it is harvested. It is estimated these additional restrictions have the effect of reducing potential timber harvests by as much as one-third of that expected from Category C Management Areas. Site specific conditions may require more restricted timber harvest or no timber harvest activities to occur in particular geographic areas during a given decade, while in other areas more timber harvesting may occur in order to achieve the overall timber goal.

Table FOUR-6 MANAGEMENT AREAS - CATEGORY B

Designation	Area Name	Acres[1/]
B1	Wild[2/], Scenic & Recreation Rivers	18,200
B2	Scenic Viewsheds	102,500
B3	Roaded Recreation-Reduced Timber Harvest	750
B4	Pine/Oak Habitat	14,850
B5	Pileated Woodpecker/Pine Marten Habitat	61,000
B6	Special Emphasis Watersheds	34,900
B7	General Riparian Areas	66,500
B8	Earth Flows	16,350
B9	Wildlife/Visual Areas	4,450
	Category B Subtotal	319,500

1/ Adjusted for overlap.

2/ Wild segments of Wild & Scenic Rivers have no chargeable timber harvest. Scenic and Recreational segments allow some chargeable timber harvest.

CATEGORY C MANAGEMENT AREAS:

There is only one Category C Management Area, designated as area C1. Chargeable timber harvest is scheduled in this area as a dominant objective, while other outputs would be jointly produced. Management activities in area C1 are designed primarly to provide wood products needed to meet national demand, and to support local communities dependent on timber for employment, while achieving the objective of promoting a healthy, growing forest mosaic through timber harvest. These objectives are achieved while concurrently being sensitive to, and managing for, the other forest resource uses and values including transitory forage production and public recreation use. Timber levels are based on capability and suitability of the land in accordance with applicable laws and regulations.

Table FOUR-7 MANAGEMENT AREA - CATEGORY C

Designation	Area Name	Acres[1/]
C1	Timber Emphasis Areas	344,450

[1/] Includes 34,450 acres which are currently considered unsuitable for timber production. Because these are interspersed with the 310,000 acres of suitable timber land, it is not practical to assign them to other management areas.

2. Salvaging Mortality (Dead and Dying Trees)

The focus of this discussion is on Category B and C Management Areas because it is estimated that less than 1 MMBF/yr will be salvaged from Category A areas. Only the next 10 years will be examined because of data limitations and the fact that this is the expected life of the Forest Plan. Only salvage from old growth trees 200 years or older, is addressed.

a. Salvage Harvest In Category B Areas

The long rotations in Category B are intended to result in more unsalvaged mortality being left per acre than in the Category C Management Area. This additional woody debris is left unsalvaged to benefit the entire ecosystem, i.e. flora, fauna and soil. In particular, the following benefits are to be provided:

1) Dead and defective tree habitat to sustain 90 percent of the theoretical maximum population of primary excavators in riparian areas and 60 percent of potential population capacity in other Category B areas.

2) A minimum of two down logs per acre, each over 40 cubic feet in gross volume in Category B areas to provide sufficient habitat quality and distribution to maintain dependent wildlife species.

3) At least 90 percent of the available dead and down woody debris for stream channel and stream bank stabilization which is to act as a sponge to stablize riparian areas during high water cycles.

4) Abundant large, dead, standing and down wood in Northern Spotted Owl Habitat Areas to support viable populations of owls, prey species, and other old growth dependent wildlife species.

5) Meet scenic quality objectives in Scenic Viewsheds and Wildlife/Visual Areas by maintaining a natural appearing forest and providing for dependent wildlife species that are viewed by Forest visitors.

6) Maintain unique riparian ecosystems, high quality water; waterfowl breeding, nesting, and resting habitat; wildlife cover and nesting habitat; fish spawning and rearing habitat; and the habitat diversity that exists in Key Site Riparian Areas.

7) Streamside vegetation in Category B Areas to minimize stream temperature increases, reduce turbidity, avoid accumulation of wood debris and lessen impacts of any activity on stream water quality.

Some salvage harvest is intended to come from the Category B Management Areas and is included in the ASQ. Some additional mortality, such as firewood and pulpwood not meeting utilization standards, shall be salvaged from Category B areas and comprise a component of the Timber Sale Program Quantity (TSPQ) which is not merchantable and does not contribute to the ASQ. An estimate of the dispositon of mortality which meets utilization standards in Category B Management Areas is shown in the following table.

Table FOUR-8 HARVEST OF DEAD AND DYING TREES IN CATEGORY B AREAS[1/]

ACCOUNTING CATEGORY	MILLION BOARD FEET PER YEAR PER ALTERNATIVE (Only includes volume which meets utilization standards)									
	NC (No Change)	C	B (RPA)	D	E (Preferred)	G	A (No Action)	F	I	H
Gross Mortality.[1/]	55	18	16	21	24	24	12	30	30	14
To Be Salvaged	4	1	1	1	2	2	1	3	3	1
Not Salvaged:										
Not Accessible	18	8	5	7	8	8	4	6	9	5
Amount Reserved To Meet Category B Multiple Use Objectives	33	9	10	13	14	14	7	18	18	8
Approximate Salvage Value Of Amount Reserved For Other Uses ($MM/Year)	$1.8	$0.6	$0.5	$0.7	$0.8	$0.8	$0.4	$1.1	$1.1	$0.5

About 8 percent (2 of 24 MMBF) of the gross mortality will be salvaged. Its species and composition are about the same as that which contributes to the Allowable Sale Quantity (ASQ). Salvage volume includes that which would be part of a sale of green timber, or would comprise a salvage sale.

About an third (8 of 24 MMBF) of the gross mortality will not be salvaged because it is not accessable from an economic standpoint.

About 58 percent (14 of 24 MMBF) of the gross mortality **shall be left unsalvaged in order to meet Category B multiple use objectives.** This "reserve" volume eventually becomes unmerchantable. The rate of deterioration varies by species, climate, and other factors. An average of about ten years of accumulated salvageable material should exist at any given time. In order to compute the approximate values shown in Table FOUR-8, a bid price of $168 per thousand board feet is assumed.

Records regarding salvage sales on the Forest for Fiscal Year 1987 show that only existing roads were used; no new ones were built solely to salvage trees. This is expected to be the case for any economically efficient salvaging to be done in the future, whether they are from Category B Management Areas or Category C Management Areas.

b. Salvage Harvest In Category C Areas

About 20 percent of the gross will be salvaged in Category C areas. The unsalvaged mortality **must be reserved** to meet the following Forest-wide standards:

1) Provide dead and defective tree habitat to sustain 60 percent of the theoretical maximum population capacity of primary excavators in Category C areas.

2) Maintain a minimum of two down logs per acre, each over 40 cubic feet in gross volume in Category C areas to provide sufficient habitat quality and distribution to maintain dependent wildlife species.

3) Manage salvagable streamside vegetation in Category C areas to minimize stream temperature increases, reduce turbidity, avoid accumulation of wood debris and lessen impacts of any activity on stream water quality.

3. Management Standards and Resource Area Prescriptions

Each Management Area functions under written standards designed to avoid or mitigate adverse environmental conditions which could result from management activities within the area. When these management area standards are more restrictive than the Forest wide standards, they supersede the latter standards within the Management Area to which they apply.

Although the standards pertaining to Management Areas often address more than one Public Issue, Management Areas are differentiated from one another by the relative emphasis their specific direction places on resolving particular Public Issues.

Management Area Prescriptions are quite detailed. This is because the mangement practices and intensities of these practices are embedded within the standards for each Management Area.

Following is each prescription and the detailed standards for each of the twenty-one Management Areas to which land is allocated in this Forest Plan.

-CATEGORY A MANAGEMENT AREAS-

a. A1 - BULL RUN PLANNING UNIT

Prescription:

Description: This Management Area designation applies to the lands described in the Final Environmental Statement, Bull Run Planning Unit Land Management Plan (USDA-FS-FES (ADMIN)-76-16), approved by the Regional Forester on January 24, 1979, and further described as the Preferred Alternative, Chapter V, pp 62-77. The Management Direction (Standards) for this Management Area listed below are from the Environmental Statement referred to above (pp 62-75, Management Direction for the Preferred Alternative).

The Management Areas in the Plan, as in the Environmental Impact Statement, are divided into two major parts:

(1) The Bull Run Management Unit which is closed to public entry and includes:

   (a) The Bull Run Drainage above dam headworks.
   (b) The Buffer.

(2) The area outside the Bull Run Management Unit but within the Bull Run Planning Unit boundary. This area is open to public entry.

The Bull Run Management Unit totals approximately 90,000 net acres. Of this, the drainage total is approximately 68,000 acres, plus a buffer of approximately 20,000 acres. The remaining area within the Bull Run Management Area, but outside the Management Unit, comprises approximately 6,000 acres plus approximately 1,000 acres in a Special Interest Zone. Refer to the Bull Run EIS for more details on acreages.

Goal of the Management Area: To serve as the main water supply for the City of Portland and its service areas, and to continue to produce "pure, clear, raw potable" water (for the City of Portland and its service areas) of a quantity and quality that is at least as good as that historically produced as defined by the Bull Run Water Quality Standards.

The dominant management objective is the continued production of "pure clear raw potable water" (91 Stat. 1425) not only for the City of Portland but also for other local governmental units.

The hydrologic condition of the drainage is a key to securing favorable long term water supply. It will be necessary to secure conditions which minimize the vulnerability of the drainages to natural disasters such as flood, fire and windstorms. Improvement in fire resistance and maintenance of stable hydrologic conditions can be brought about through management of vegetative cover and protection of soils.

Management Activities: Management is designed to reduce long term risks to water quality. Water production shall be maintained at or above historical levels. Water quality shall be as high as that defined by the Bull Run Water Quality standards. Management activities within the buffer area of the Management Area (Planning Unit) include chargeable timber harvest and normal salvage operations. Nonchargeable timber harvest and protection of the watershed are permitted within the physical watershed drainage if water quality standards can be met, or if it can be demonstrated the timber harvest is necessary for reducing the potential of catastrophic wild fires while maintaining the watershed's ability to withstand high intensity rainstorms and runoff. Management should be designed to reduce long term risks to water quality while making renewable resources available.

The environmental statement for the Bull Run Planning Unit contains water quality standards developed by the USDA-Forest Service after consultation and in cooperation with the City. (See Appendix P of Bull Run FEIS.) Should any management plan or practice be found to have significant adverse effect on water quality or on quantity of the water produced,[1/] the management plan and all relevant leases, permits, contracts, rights-of-way or other rights, will be altered to eliminate such adverse effects. Should such alteration prove impractical, the plan or procedure will be prohibited. The water quality standards reflect the quality of water by percentile curves developed from data collected from 1967-82. Quality of water will continue to be examined and criteria may be revised to reflect more accurate or more detailed description of water quality. The significance of variation in the annual percentile curves will be determined by assessing the variation in the data from which the standards were developed. Project and source search monitoring data will be assessed to identify natural changes and management impacts. Water quality will not be lower than existing levels recorded during the base period.

1/ Through the process outlined in the new water quality standards for the Bull Run Watershed.

"The Forest Service and the City will meet at least annually to review planned management activities and impacts on water quality and quantity, and to assure that land management and operational activities within the unit are appropriately coordinated." Staff of the Portland Water Bureau and the Forest will meet on a day-to-day basis for effective planning and operational management. Current data will be compared at least annually for the purpose of determining compliance with the standards and the significance of any deviation.

Entry into the Management Unit will not be permitted except as agreed to by the Forest Service and the City. Trespass regulation will be enforced by the Forest Service.

The Pacific Crest Trail will remain in its present location. To replace the existing Huckleberry Trail, an alternative trail will be made available to Lost Lake. This trail will be constructed outside of the Management Unit. The Pacific Crest Trail will be posted and the trespass provision will be enforced by the Forest Service to keep people from leaving the trail. In the event that problems develop regarding public use of the trail, administrative controls and/or trail closure will be utilized as corrective measures. Buck Peak Trail will also remain open for use.

Scientific research will be an important activity within the Management Unit. Direction for research will be toward maintaining water quality through improved watershed management. Research will be specifically targeted to improve predictive capability. The Bull Run Research group will develop research projects.

Management Area Standards:

The Standards (Management Direction) that follow are grouped into Standards for three different areas within the Management Area.

(1) The Drainage.
(2) The Buffer Area.
(3) The Areas Outside the Management Unit.

Standards:

(1) **Management Area Standards for the Drainage**

General Policy for Watershed Management (on 60,844 acres of the drainage)

All activities within the drainage will be conducted to protect or enhance long term supplies of high quality water. The City of Portland and the Forest Service will jointly participate in the planning of all projects in the drainage and will cooperatively conduct water monitoring programs. The results of these program evaluations and their long term implications will provide the basis for decisions relating to future activities and programs in the drainage.

Fire and Fuels Management

The purpose of fire and fuels management direction will be to provide for both short term and long term protection of water quality in the drainage.

Catastrophic fire constitutes potential risk to water quality. Therefore, the primary fire management objectives are: (1) reduce the chances for catastrophic wildfires occurring, and (2) protect the Management Unit from wildfire. Means for achievement of these objectives are outlined in the following policies. Implementations are described in detail in the Fire Management Plans. (See Appendix J of Bull Run FEIS.)

A basic objective will be converting the drainage to a more fire resistant condition while maintaining the hydrologic conditions necessary for continuous production of high quality water. This will be accomplished through harvesting timber and fuel treatment in areas planned for timber harvest. (See Figure 12 of Bull Run FEIS.) Emphasis will be given through a timber sale program for converting old growth hazard level III areas to hazard level I. Secondary priorities will be to convert hazard level II areas to hazard level I. This will be done to maintain a continuous supply of high quality water over the long term. In the process of reducing fuels through a timber management program, controls will be placed on the amount of allowable hazard level III created by harvesting in each subbasin. (See the accompanying table.) Fuelbreaks may be constructed in areas where timber harvest is not planned (except for salvage logging), provided the overall risk to water quality will be reduced.

A crown-closure target of approximately 80% should be maintained after age 15. This will allow heat to dissipate should a fire occur. The 80% crown closure also limits the production of vegetation under the canopy, and thereby minimize live fuel loadings and protect the soil surface and its hydrologic capability. This target will be considered as one of many factors in determining annual timber harvest level, and it must be coordinated with the overall watershed management program.

To reduce risk of man-caused fires, entry into the Management Unit will remain by permit only. During periods of extreme fire weather conditions, entry will be limited to Forest Service and Water Bureau personnel and others needed to protect the watershed and to manage and operate the water system. All contractual operations in areas of potential fire hazard will be suspended during high fire risk periods. During the fire-precautionary period, all contractors operating in the Management Unit will be required to have trained personnel and equipment necessary to extinguish a fire caused by the operation. This is a continuation of existing policy.

Use of Chemicals: Insecticides and herbicides will not be used in the drainage. Aerial retardants to be used for fire suppression must be approved by the Portland Water Bureau. Fertilizer use will be limited to the amounts required for revegetation of exposed areas but will not be used to increase timber production. The Forest Service shall not use chemicals for any other purpose, unless jointly agreed to by City of Portland and the Forest Service. Air space clearance for hazardous cargos will be requested.

Timber Management: The timber management program will be coordinated with the overall watershed management program and will be designed to make the drainage more fire resistant and maintained in a hydrologically stable condition. A high degree of forest residue utilization will be encouraged to reduce forest fire fuels and limit debris burning in the drainage. Where possible, timber will be harvested to mitigate effects of windstorms, floods, and landslides. Unmerchantable material removed will be made available as firewood.

To keep soil disturbance at a minimum, design of logging systems and timing of logging operations will be regulated. Techniques such as suspended logging systems will be employed to minimize exposed bare soil, compaction, and alterations of natural hydrologic characteristics. Timber sale contracts will contain language to control timing of operations. The timing objectives will be prompt completion of contracts to avoid problems associated with multiple contracts.

Timber harvest will generally be limited to stable and low-potential impact sites. Sites which are geologically unstable or are steep (over 50% slope) and erosive are designated for priority I type harvest only. The average clearcut unit will be 25 acres or less in size. Unit size will be designed to meet all controlling factors which will meet long term water quality standards. Adjacent stands will not be harvested until regenerated areas approach preharvest hydrological conditions (approximately 15-25 years) except for priority I type logging. This is more conservative than harvest levels experienced during the base period.

The level of timber harvest may vary from year to year depending on the need and circumstances at a particular time. The following harvest priorities are given to provide directions for project level planning.

Harvest Priorities:

I. First priority will be given to timber harvesting necessary to resolve immediate problems such as stream cleanup, blowdown, insect and disease outbreaks, and serious fire hazard; or to accommodate water development projects such as reservoirs, pipelines, and roads.

II. Second priority for timber harvesting will be to deal with potential long range problems which require treatment. Some of these potential problems are floods, landslides, and wildfire. Treatment of these long term problems will be designed to avoid short term water quality degradation.

III. Third priority for timber harvesting will be to utilize the timber resource where research results and experience has demonstrated that water quality will not be significantly affected.

The Portland Water Bureau/Forest Service staff, the Bull Run Advisory Committee, and the City Council will carefully analyze the level of harvest in any particular year as a review of both its short term and long term effects on water quality. This review is part of the annual management and operational plan. For environmental analysis purposes, this land management plan assumes an annual harvest level of 21 MMBF so that the effects of timber harvest on water quality can be appropriately discussed. Fluctuations in the annual harvest levels will not be compensated for in other areas of the forest. There is no specified annual programmed harvest level for the Management Unit.

Fish Management: The Forest Service Fish Habitat Policy will be followed to protect existing fishery resources. The correspondence and data exhibited in Appendix S, of Bull Run FEIS, indicate there is a conflict of opinion between the City of Portland and the Oregon Department of Fish and Wildlife concerning impacts on water quality resulting from proposed anadromous fish introductions. Since this conflict has not been resolved, the proposal to reintroduce salmon into the watershed above the dams cannot be considered a viable management option in any alternative at this time.

Reservoir Construction: Selection of either Blazed Alder or Cedar Creek Dam facility is planned and will depend on assessment of environmental impacts, cost effectiveness, operational objectives, and construction costs. Completed design plan, environmental and economic assessments, and approval by appropriate state and federal agencies will precede construction of this facility.

Hydroelectric Power: Hydroelectric power generation from existing and proposed dams will be permitted providing generation is compatible with the primary objectives of water quality. Power generation would require new powerline approval by appropriate state and federal agencies and will precede construction of generation and transmission facilities.

Visual Management: Standards for all management activities will consider viewers outside of the Management Unit looking into the drainage, unless achievement would affect meeting the primary water quality objective.

Rock Resource: The rock resource would continue to be utilized on public lands within the Management Unit. Performance standards and reclamation plans for site restoration have been completed for each quarry site. Quarry development, under these plans, is done in a manner to prevent degradation of water quality.

Road Construction and Maintenance: Roads will be constructed, reconstructed and maintained where needed to support management activities within the drainage. Roads will be designed for stability with prompt rehabilitation of disturbed areas in order to maintain water quality. Prior to significant new road construction within the drainage, a transportation plan will be completed. The plan will show general location of major access roads, trails, heliports, powerline rights-of-way and other transportation facilities. Stream crossings will be designed to allow free passage of water during major storm events. Emphasis will be given to bridge construction rather than filling and culverting streams. Culvert arches and pipes will be designed to contain excess flow capability.

-Special Areas within the Drainage-

Fir Creek Subdrainage (2995 acres): Fir Creek Drainage has not been disturbed by land management activities. The land management objective for Fir Creek Drainage is to maintain it in a natural condition and provide an area for water quality research. Other research which is consistent with the water quality research program will be allowed. The Portland Water Bureau and Forest Service will cooperatively conduct a monitoring project, recording and analyzing data on a number of different parameters. There will be no activities permitted which will disturb natural watershed conditions. However, if a catastrophic event should occur (fire, blowdown, insect infestation/or disease) which threatens water quality, corrective measures and activities may be performed.

Big Bend Mountain Protected Area (928 acres): Areas on Big Bend Mountain will be investigated by the Pacific Northwest Forest and Range Experiment Station and others for research potential and possible classification as a Research Natural Area (RNA). The area will remain unroaded. Timber removal will be permitted only in the case of catastrophic events such as fire, windstorm, insect or disease infestation which significantly threaten water quality.

Bull Run Lake Basin (2134 acres): The Bull Run Lake Basin which includes the Bull Run Research Natural Area, will be managed to protect water quality of the lake and continuance of its use for long term water quality monitoring. Timber removal will be permitted only in the case of catastrophic events that significantly threaten water quality.

Bull Run Research Natural Area (915 acres): The existing Research Natural Area will be expanded to include the eastern portion of Bull Run Lake Basin in order that boundaries can be more easily identified on the ground. There will be no timber harvest, roads, trails or other physical improvements (ref. Management Plan for the Bull Run RNA).

Fox Creek Research Area (B-1) (945 acres): The B-1 Study Area which is in the Watershed Management Area, is the site of a watershed experiment project cooperatively undertaken by the Pacific Northwest Forest and Range Experiment Station and the City of Portland to study effects of timber harvesting on water quality. This area will continue to be available for research purposes.

Streamside Protection Areas: Vegetation will be managed adjacent to streamcourses to minimize stream temperature increases, reduce turbidity, avoid accumulation of wood debris, and lessen impacts of any activity on stream water quality. The Streamside Management Unit Guidelines in FSM 8223 will be followed to help achieve this objective. Streamside management units will be periodically reinventoried. Three categories of SMUs are recognized: (1) General Protection. Areas where standard management practices for streamside areas are accepted. (2) Intermediate. Areas where proposed activities are reviewed by an interdisciplinary management team that recommends prescriptions that meet the specific requirements for the conditions at the site. The team includes a hydrologist or fisheries biologist, a soil scientist or geologist, a logging systems specialist or engineer and other specialists, if the need exists. (3) Full Protection. Areas where road construction and timber harvest activities are not permitted except under extreme circumstances.

The width of SMUs is determined by a system that considers stream classification, slope of the area adjacent to the stream channel, geological and soils stability, and erosion potential for the site. (See FSM 8220.) Stream data will be checked against current stream classification as defined by USFS Streamside Management Guidelines. As more data become available, streams may be reclassified.

An inventory of the drainage indicates that 1887 acres require full protection and 3819 acres require intermediate protection. No determination of acreage has been made for general protection.

(2) **Management Area Standards for the Buffer**

General Policy: General Forest Portion of Buffer (18,880 acres)

The principal management objective will be to maintain a healthy forest stand that presents minimum fire risk and optimal buffer conditions for the drainage. This will be accomplished through a management program that emphasizes fuel reduction, fire surveillance and protection, trespass prevention and maintenance of a sustained yield timber program.

Resources and Activities: Entry into the Management Unit will be by permit only.

Fire Management: Fire management activities in the buffer will be conducted at the same level of intensity as in areas within the drainage.

Timber Management: A variety of silvicultural systems will be used to maintain a sustained yield level of timber harvest and protect other resources in accordance with stream water quality standards. Intensive timber management will be practiced where applicable. A part of the timber management program will be to meet fuel management objectives in coordination with overall watershed management objectives. The timber management program includes an active salvage program.

Visual Management Standards: The Management Unit is closed to public entry and is considered background under visual management standards. Therefore, the areas that will be managed to meet visual quality standards are those areas within the Bull Run Planning Unit that can be seen from vantage points outside the watershed, except for areas adjacent to camp areas and recreation travel routes.

Rock Resource: The rock resource would continue to be utilized on public lands. Performance standards and reclamation plans for restoration have been completed for each quarry site. Quarry development is done in a manner to prevent degradation of water.

Road Construction and Maintenance: Roads will be constructed, reconstructed and maintained where needed for the protection, utilization, and administration of available resources. Emphasis will be on providing road stability and rehabilitation of areas in order to maintain water quality. New roads, where needed, will be planned to meet land management objectives with minimum resource damage within the Management Unit.

Powerline Corridors: New powerlines would be limited to existing corridors with the exception of those needed to transmit power produced within the Management Unit. The powerlines from within the Management Unit will generally follow existing road rights-of-way.

General Policy: The Upper Little Sandy River Portion of the Buffer (4,787 acres)

The Upper Little Sandy Drainage is identified as a potential municipal water supply. An active management program will be pursued in the Upper Little Sandy Drainage to condition it for a municipal watershed while meeting state water quality standards for the Sandy River Drainage. A land ownership adjustment program will be followed to convert the drainage to total public ownership.

Resources and Activities: Fuel management activities will be conducted at the same level of intensity as those areas within the drainage. The timber management program will reduce fire fuel levels in hazardous portions of the drainage by converting old growth stands to young stands prior to its use as a domestic water supply. Timber management will be practiced on an intensive, sustained yield basis while meeting state water quality standards. Direction developed for the Bull Run Drainage will apply to transportation facilities in the Little Sandy Drainage. The objective is to complete the road and improvement program prior to use as a municipal watershed.

General Policy: The Eagle Creek Wilderness Study Area within the Buffer (WSA) (2515 acres).

The portion of Eagle Creek within the Buffer that falls within newly designated Wilderness will be managed to protect Wilderness characteristics. In contrast to the Wilderness portion outside the Management Unit, the portion of Eagle Creek within Bull Run Management Unit will be closed to public entry. (See the following discussion of Eagle Creek.)

Resources and Activities: No man-made alterations of the natural landscape such as timber harvest, roads, utility corridors, etc. will be permitted.

Fire suppression will be planned primarily to protect the Bull Run Watershed with the least impact to wilderness values.

General Policy: Special Interest Zone-Scenic portion of the buffer classification will be recommended to the Regional Forester under 36 CFR 294.1a to preserve scenic views from the Columbia River Gorge and Larch Mountain. In contrast to the portion of the Special Interest Area outside the Management Unit, the portion of the Special Interest Area within the Management Unit will be closed to public entry.

Resources and Activities: There will be no programmed harvest. Tree removal would be limited to salvage of trees destroyed by fire, disease, blowdown or insect infestation, and construction of helispots. No new roads would be built.

(3) **Management Standards for Areas Outside the Management Unit**

General Policy: The areas outside the Management Unit boundary will be open to public use. The area will be managed for a variety of resource activities including timber, water, fish and wildlife, and recreation.

General Policy for General Forest portion of the Areas outside the Unit (4,545 acres): The areas will be utilized for a variety of resource activities while maintaining water quality in accordance with state and federal environmental protection laws.

Resources and Activities: In this area, recreation activities will include opportunities from developed sites at Lost Lake to a variety of dispersed uses such as hiking, hunting, and fishing. ORV use will be permitted where designated in the Mt. Hood National Forest ORV Plan.

Private Land Coordination: The Portland Audubon Society is using property in Section 7, T.2S, R.6E as a wildlife sanctuary. Management adjacent to this section will be done in consultation with the Portland Audubon Society.

Fire Management: Fire management activities will provide for identification of fuel hazard areas. Plans and programs will be developed for reduction of fuel hazard to reduce potential for major wildfire. Hazard Level I under 90th percentile weather conditions, will be the objective for fuel management programs. Hazard Level II will be maintained in the natural fuel complex. Fire suppression activities will include improved surveillance, detection, response, and fire support systems as described in the Fire Management Plan.

Timber Management: Timber management will be practiced on an intensive, sustained-yield basis. Timber management activities will include a variety of silvicultural systems and harvest methods. General Forest Service policy and guidelines for all resource management directives will be considered in planning timber activities through the environmental assessment process.

Road Construction and Maintenance: Roads will be constructed, reconstructed and maintained where needed for protection, utilization and administration of available resources. Emphasis will be on providing road stability and the rehabilitation of areas in order to maintain water quality. New roads, if needed, will be planned to maximize resource protection.

General Policy for Gordon Creek (1,453 acres): The Gordon Creek Watershed is the supply source for Corbett and Springdale, Oregon. All activities will be conducted and carried out to meet the water resource goals established for the Sandy Drainage in accordance with Volume 1, State Water Quality Management Plan, DEQ 1976.

Resources and Activities: The timber management program will utilize a variety of silvicultural systems and harvest methods designed to meet primary objectives of state water quality criteria.

The Forest Service will provide for identification of fuel hazard areas. Plans and programs will be developed for reduction of fuel hazard and potential for major wildfire. A hazard level I will be maintained in managed stands.

Roads will be constructed and maintained where needed for protection, utilization and administration of resources. Emphasis will be on providing road stability and rehabilitation of areas in order to maintain water quality. New roads, if needed, will be planned to minimize impacts.

General Policy for the Eagle Creek Wilderness Study Area Outside of the Unit WSA (21 acres): This portion of the Eagle Creek Wilderness Study Area will be managed to protect wilderness characteristics until a decision is made through the Planning process. Oregon Wilderness Act of 1984 did not include this area as Wilderness.

Resources and Activities: Within this area, only man-made alterations consistent with the characteristics and use of wilderness will be permitted as provided for under USDA-Forest Service Wilderness regulations (i.e. trails, bridges, etc.).

Fire suppression will be planned primarily to protect the Bull Run Watershed with the least impact to wilderness values. Geothermal use would not be permitted. Existing mining laws for Wilderness apply.

b. A2-WILDERNESS

Prescription:

Description: This area provides for the management of Wilderness under the requirements of Wilderness legislation and other subsequent regulations and directions. Management intensities within Wilderness will promote, perpetuate, and (where necessary) restore wilderness character to the land. The Forest has inventoried and classified each Wilderness according to the Wilderness Recreation Opportunity Spectrum (WROS) System. The WROS system is based on the fact that Wilderness can and should offer different recreation opportunities and experiences while continuing to feature natural characteristics, and opportunities for solitude, challenge, and inspiration. Each WROS opportunity class has its own definition and set of management objectives that will make it distinct from other classes.

Goal: To provide for primitive recreation opportunities, and ecological, scientific, geological, educational, scenic, and historical values of Wilderness in a manner that would leave each Wilderness unimpaired for use and enjoyment as wild country.

Management Activities: There shall be no timber harvesting, timber salvage operations, road construction, or additional roads permitted in Wilderness. Existing roads shall be closed, obliterated, and rehabilitated. Only the minimum regulations necessary to achieve Wilderness Management objectives shall be applied in Wilderness. Management Activities shall provide for limiting and distributing visitor use in accord with periodic estimates of the maximum levels of use that allow natural processes to operate fully and that do not impair the values for which Wildernesses were created. Three types of zones are found in Wilderness on the Forest: Transition, Semi-primitive Trailed, and Primitive Trailed. The standards for Wilderness have management restrictions for limiting and distributing visitor use in each of these zones. The restrictions are a means to achieve the desired recreation experience for each zone. Periodic meetings, usually on an annual basis, shall be held among adjacent Forests administering the same Wilderness to:

(1) Maintain continuity and consistency in Wilderness management decisions.
(2) Review and discuss priorities for the use of available financial and personal resources.
(3) Review management action plans for impacted areas.
(4) Review commercial use permit administration.
(5) Coordinate joint training of Wilderness management personnel, including volunteers, to achieve consistency in public contact, program accomplishment, and law enforcement.

The three Wilderness Recreation Opportunity Classes are described below.

Transition - This opportunity class is characterized by conditions of relatively concentrated use where encounters with other users are frequent. Opportunities for solitude are limited, and user controls shall be highly evident. The zones of the Wilderness where this opportunity class applies are: (1) short distances along arterial trail corridors, (2) areas where major trails intersect, converge, or lead to places of high interest, and (3) in the vicinity of staging areas or trailheads. The Transition opportunity class is considered a temporary condition that is at present inconsistent with the management objectives for Wilderness. The long-term Management Objective for transition zones is the gradual elimination of the Transition opportunity class in favor of a more primitive Wilderness experience.

Semi-Primitive Trailed - This opportunity class is characterized by predominantly unmodified natural areas which are moderate to large in size. Concentrations of users is usually low, but evidence of other users in the area is often visible. User controls shall be present but must usually be subtle in nature. Facilities shall be provided for the protection of wilderness resource values. Only materials of natural appearance shall be used. Spacing of groups shall be formalized to disperse use and provide low to moderate contacts with other groups or individuals.

Primitive Trailed - This opportunity class is characterized by an essentially unmodified environment. The concentration of users is low and evidence of human use is minimal. These areas shall be managed essentially free from evidence of restrictions and controls. Only essential facilities for resource protection shall be allowed and these shall be constructed of native or natural appearing materials. Facilities for comfort or convenience of the user shall not be allowed unless determined to be historically significant. Spacing of groups shall be informal and dispersed to minimize contacts with other groups or individuals.

Limits of Acceptable Change

Management shall implement the Limits of Acceptable Change System for determining wilderness carrying capacities for each Wilderness during the first decade of implementation of this plan. These "carrying capacity studies" shall focus on two components of recreation use of Wilderness:

(1) The ability of the biophysical environment to withstand recreation use.
(2) The amount and type of use that is consistent with some measure of quality Wilderness experience.

The proposed Limits of Acceptable Change standards that shall apply by WROS class when conducting the carrying capacity studies follow:

Biophysical Standards: Differences in site vegetation are distinct and obvious compared to surrounding area. Exposed mineral soil without a duff layer may be present on 75% of the area around a campsite as well as at key interest points. Loss of ground cover shall not exceed 400 square feet at any one site or 1% of any acre. Tree roots may be exposed on 25% of the trees at destination locations. Some "improvement" such as fire rings, firewood stashes, or log or stone seats are tolerated as long as they are in keeping with the setting. Campsites shall be separated from other campsites and set back far enough from lakes, streams, trails, meadows, and key interest features to minimize the degree of disturbance to the natural ecosystem. (The actual distance of campsites from each other and from sensitive areas shall be prescribed on a site-specific basis.)

Social Standards: Encounters with other groups shall be limited to no more than 12 groups per day during 80% of the use season. No more than 2 other campsites shall be visible or continuously audible from any other site. Group size shall not exceed 12 in any combination of people and recreation stock. Groups exceeding 12 shall be allowed onl under a special use permit. The maximum group size under special use permit shall not exceed 30 in any combination of people and recreation stock.

Biophysical Standards: Ground vegetation may be flattened or show some wear and tear, but must not be permanently injured, and must be able to recover in two growing seasons. The loss of ground cover at heavily-used sites shall not exceed 200 square feet at any one site or 0.5% of any acre. Exposed mineral soil without a duff layer may be present, but shall not exceed 25% of a particular site. Camping sites may be easily recognized up close, but must blend in from a distance. Tree roots may be exposed on 10% of the trees at destination locations. Campsites shall be separated from other campsites and must be set back far enough from lakes, streams, trails, meadows, and key interest features to minimize the degree of disturbance to the natural ecosystem. The actual distance of campsites from each other and from sensitive areas shall be prescribed on a site-specific basis.

Social Standards: Encounters with other groups shall be limited to no more than 6 groups per day during 80% of the use season. No more than 2 other campsites shall be visible, or continuously audible from any other site. Group size shall not exceed 12 in any combination of people and recreation stock. Groups exceeding 12 shall be allowed only under a special use permit. The maximum size under special use permit shall not exceed 30; in any combination of people and recreation stock.

Areas receiving the heaviest use within each Wilderness must be studied first. The Limits of Acceptable Change standards just described shall remain in effect until the carrying capacity studies are completed. If the carrying capacity studies indicate that use levels for a particular Wilderness, or a specific area within a Wilderness, have exceeded the carrying capacity as established through the Limits of Acceptable Change standards, the following corrective actions must be taken subject to approval of the Forest Supervisor.

First Action - Public Information and Site Restoration:

- De-emphasize attraction of excessively used areas and promote use of alternative areas.
- Inform public of the type of campsite and the characteristics of sites they should avoid.
- Adjust or remove administrative and informational signing.
- Emphasize "no-trace" camping.
- Remove or reduce any facilities contributing to concentration of use.
- Decrease or reduce accessibility.
- Revegetate impacted areas and post a message informing the public of the purposes of site restoration.

Second Action - Use of Regulations:

If the first action is unsuccessful, restrict activities by regulation. Possible additional actions include:

- Limit or ban campfires.
- Designate campsites.
- Require minimum spacing between campsites.
- Require that campsites be set back a specified distance from sensitive areas.
- Restrict specific types of use to an area or on trails leading to an area.
- Limit length of stay.
- Restrict or prohibit commercial outfitter use.
- Install toilet facilities to correct major sanitation problems.

Third Action - Restrict Number of Users

If the first and second actions fail to successfully correct the problem, restrict numbers of visitors to carrying capacity level. Possible actions, in addition to previous efforts, include:

- Allow only day use.
- Restrict time of entries.
- Restrict number of entries per trailhead.
- Restrict group size.

Fourth Action - Close Area to All Users:

If first, second, and third actions are not successful, close area to all recreation use until the area is rehabilitated and restored to wilderness condition.

STANDARDS by Functional Activity:

1. Dispersed Recreation (See Use Administration under Activity 3.)

2. Developed Recreation Structures

   A. Permanent structures shall not be allowed unless determined to be historically significant, essential to preserve a national historic site, or otherwise authorized by provision of the Wilderness Act and/or other legislation.

   B. Additional structures, improvements and/or facilities shall be limited to those actually needed for the protection, use, and management of wilderness, where they must be constructed of only native materials and must harmonize with the natural environment.

   C. Toilets of a primitive type shall be provided only for the protection of wilderness values and where there is a hazard to health and safety.

   D. Existing vehicle tracks shall be blocked, stabilized, and allowed to revert to a natural state.

3. Wilderness
   Coordination (Forest Service)
   Use Administration

   A. Each wilderness shall be managed as a single unit regardless of administration boundaries.

   B. Wilderness shall be made available for recreational use and enjoyment of people consistent with preservation of the wilderness resource.

   C. The highest priority shall be accorded those uses which:

      -Are most dependent upon the wilderness environment and cannot be accommodated elsewhere.

      -Least affect the wilderness environment.

   D. Pre-existing or historical uses of wilderness, which are authorized by wilderness leglislation, must adhere to the conditions of the authorization and any special use permits.

E. Visitor contacts shall be for the purposes of:
-Informing users of Wilderness management goals and objectives, emphasing current conditions.
-Encouraging user behavior that is respectful of the wilderness resource, and to addres visitor conduct, of law enforcement, problems.
-Checking compliance of laws and regulations.
-Scientific studies, research, and educational programs are appropriate within wilderness provided they do not degrade wilderness values. Only those studies and programs which depend upon a wilderness environment shall be permitted.

F. Most personal contacts of wilderness users should be outside of wilderness.
-Special emphasis shall be given to pretrip contacts with wilderness users at schools, workshops, and meetings held by interested organizations.
-Signing in Wilderness should be reduced by providing, or assisting, private sectors with accurate maps of each Wilderness.

G. The Forest Service should develop a cooperative process which allows other agencies and private sectors to meet their resonsibilities when using Wilderness while still providing for meeting wilderness objectives.

Recreational Stock

H. Grazing of recreational stock, such as saddle horses, pack stock and llamas, is permitted but must be closely monitored and controlled to prevent resource damage. Use of pelletized feed and tethering of stock away from water, travel routes, and critical areas are required actions.

Motorized and Mechanical Equipment

I. Off-road vehicle use shall not be permitted in wilderness.

J. Existing off-road vehicle tracks shall be blocked, stabilized and allowed to revert to a natural state.

K. Possessing or using a hang-glider or bicycle is prohibited.

L. The use of motorized or mechanized equipment, except small battery-powered-hand-held devices, such as cameras, shavers, or flashlights, is prohibited within wilderness unless authorized by the Forest Service.

M. Landing of aircraft or the dropping or picking up of any material, supplies or person from aircraft is prohibited unless specifically authorized by the Forest Service.

Control of Pets

N. Pets must be under reliable voice control or physical restraint while in the wilderness and may be prohibited from being in a specific wilderness if so stated in the wilderness action plan.

Signing

O. Wilderness signs shall be designed, located, relocated, and maintained in a manner consistent with the purposes of the Wilderness Act and for administration of the area.
-Signing within Wilderness shall not be provided for user convenience or environmental interpretation.
-Directional signing may be placed at trail intersections. This signing must indicate a destination point, such as a lake.
-Heavily used areas shall not be indicated on signs if avoidance is possible.
-Regulatory or informational signs may be used in situations where control of excessive resource damage is needed and other corrective actions have been unsuccessful.

P. The regional standard for color, lettering, and design must be used for all wilderness signs. Existing signs that do not meet the standards shall be replaced.
-Only the minimum number of signs shall be installed.

Q. Trails within wilderness shall be designed, constructed, reconstructed, relocated, and/or maintained in a manner consistent with the intent of the Wilderness Act and to meet minimim requirments for health and safety. They should be consistent with district trail development plans.
-In Primitive Trailed Zones only the minimum trail system necessary to protect resources, provide for visitor safety, and to disperse users shall be provided.
-Trail bridges and culverts should not be installed for visitor convenience. However, these may be installed or maintained for visitor safety or resource protection.
-Use of native-local-materials must be emphasized in trail construction and maintenance.
-The adequacy of each trail system in Wilderness must be assessed to determine the effectiveness of the system in meeting Wilderness objectives.

R. Corrective action shall be implemented when any impact is intolerable, or beyond, that necessary to accomplish the purpose of the trail system.

4. Visual Resurce Management

A. The visual quality objective (VQO) for wilderness is preservation.

5. Cultural Resource Management

A. Cultural and historic resources shall be inventoried and evaluated by qualified personnel according to the following process:
-All structures shall be evaluated for their historical significance.
-After evaluation, any decision to maintain or abandon, but not remove, structures which meet the criteria for the National Register shall be preceded by the process outlines in 36 CFR 800 for comment by the Advisory Council on Historic Preservation. Abandoned structures shall be allowed to deteriorate naturally after following procedures outlined in 36 CFR 800. Any retained or maintained structure must be managed to have a minimum impact on the Wilderness resource.
-If it is determined, after historic evaluation, that a structure is not of significance, it must be removed by a practical method compatible with the goals of the Wilderness Action Plan and the site restored to as natural a condition as possible.

6. Wildlife
   and
7. Fisheries

   A. Fishing and hunting are permitted under state regulations in an orderly manner. Direct wildlife control measures shall be applied only when determined to be necessary.

   B. Management should allow natural ecological successions, including natural infestations of insects, to operate freely provided significant resources outside of wilderness are not endangered.

   C. Wildlife and fish indigenous to the area immediately prior to designation shall be maintained whenever possible. Emphasis shall be on preservation of threatened and endangered and sensitive species.

   D. Improvements and activities mecessaru for wildlife and fisheries management in existence prior to designation shall be permitted and maintained. Work must be performed with nonmotorized equipment unless otherwise authorized by enabling legislation.

   E. Reestablishment of native species or establishment of T&E species is permitted to correct any undesirable influences of human activity.

   F. Barren lakes may be considered for stocking after mutual agreement that scientific and wilderness values are not appreciably affected.

   G. Aerial stocking of fishing waters is permitted where this practice is of record prior to wilderness designation.

8. Range Management

   A. Grazing may be permitted on any allotment where a grazing permit was in existence at the time of wilderness designation and there is documentation of grazing use immediately prior to wilderness designation.

9. Timber Management

Vegetative Management

A. Timber harvesting shall not be permitted.

B. Live trees may be utilized for administrative purposes, such as trail bridges. Locations of cut trees shall be out of sight of common travel ways or camping areas. Stumps shall be flush cut.

C. Wood fires, or firewood gathering, should be prohibited in areas where demand for firewood is exceeding local supply and noticeable impacts from firewood gathering are degrading the wilderness resource.

D. Impacted areas shall be revegetated according to the following process:
-Only native species shall be used for site revegetation.
-Areas to be revegetated may be closed to public use until vegetation is reestablished. Temporary signing or fencing may be used if considered necessary.
-Revegetation work should be achieved in a manner that best fits the needs of the individual site. Work should be accomplished by the use of any or all of the followng practices:
(1) Restrict or eliminate use on a temporary basis to allow natural revegetation to occur.
(2) Prepare seedbed by disturbing the ground, e.g. spading.
(3) Planting of native species.
(4) Use of fertilizer on a limited basis to stimulate growth.

10. Soil, Water, Air, and Riparian

A. Soil displacement and erosion resulting from human activity shall be limited to a rate that closely approximates the natural processes.

B. Soil compaction shall not exceed limits which prevent natural plant establishment and growth except at designated camps, administrative sites, and on trails.

C. Natural quality of streams and lakes must be maintained.

D. Management must allow natural stream and riparian ecological processes to operate freely, provided significant resources outside of Wilderness are not endangered.

E. Pre-existing water impoundments, diversions and other structures may be maintained at a level consistent with enabling legislation.

11. Minerals Management

A. Designated wilderness shall be withdrawn from mineral entry and mineral leasing.

B. No new mineral claims are allowed in wilderness areas. (The Wilderness Laws exclude new Mineral Claims after December 31, 1983.) However, limited prospecting may occur under current prospecting regulations.

12. Geology

A. (Refer to Forest-wide Geology Standards.)

13) Lands: Special Uses

A. Special-use permits may be issued for outfitter-guide type activities. Use must be consistent with the wilderness resources and not compete for opportunities with individual users.

B. Commercial use must be reduced to allow for other public use when wilderness use capacities are reached or exceeded. Commercial use shall not be permitted in heavy use areas if it is found to have an adverse effect on the wilderness experience of other users.

C. Any new commercial services determined to be necessary for the use of wilderness must be advertised.

D. Contests, races, promotions, or fund raisers of any kind shall be prohibited in Wilderness. (This includes foot races, competitive trail rides, survival contests, military exercises, and other similar activities.)

E. Efforts must be made to manage commercial use with as few permittees as possible to insure the economic stability of existing operations and a high quality public service.

F. Existing permittees shall be expected to provide services in other areas of the forest outside their normal operating area.

G. Commercial operators shall be expected to pay or contribute their fair share of trail maintenance and other resource damage costs caused by their operations. This stipulation shall be a condition of the special use permit.

H. All commercial use permit operations shall be evaluated every year and the permit evaluated for continuance or termination. Existing special use permits for nonnecessary services must be phased out when permits expire, or when the opportunity exists.

14. Transportation Systems/Facilities

A. No roads shall be constructed in wilderness.

B. Existing roads in wilderness, except those specifically authorized by wilderness legislation, shall be blocked, stabilized and returned to a natural condition.

C. The potential impact of new road construction outside Wilderness on wilderness access and use patterns should be considered in the development of road management objectives.

D. Administrative facilities shall not be permitted within Wilderness boundaries. (Permanent heliports are permitted only when authorized by the Forest Supervisor.)

15. Protection Functions

Initial Attack Fire Suppression

A. (Refer to Prevention Standards in Forest-wide Protection Standards.)

Escaped Fire Suppression

B. Give preference to those suppression methods and strategies resulting in the most practicable area burned, commensurate with cost-effectiveness, and having the least effect on wilderness values.

C. Man-caused wildfires in Wilderness should be suppressed.

Prescribed Burning

D. Attempt to meet air quality laws within Wilderness at all times. An exception may be allowed for prescribed fires.

E. All naturally occurring ignitions should be managed as prescribed fires until declared wildfires.

F. Scheduled prescribed burning should be considered where analysis has shown that the wilderness ecosystem has been significantly altered from its natural state due to fire exclusion, and to the probability of unscheduled ignitions (wildfires) returning the area to its natural state is low.

Law Enforcement

G. Appropriate law enforcement activities shall be employed to insure that visitor activities are in compliance with established management standards and wilderness regulations, and that visitor safety in wilderness is provided.

Search and Rescue

H. (Refer to Forest-wide Protection Standards for Search & Rescue.)

c. A3-RESEARCH NATURAL AREA

Prescription:

Description: Lands allocated as Research Natural Areas, in this Forest Plan, under 36 CFR 251.23, (Dyrness, et al, 1975.)

This Management Area Designation applies to areas which provide:

- A baseline against which human impacts on natural systems shall be measured.
- Sites of education and research for ecological and environmental studies.
- Gene pool preserves for plant and animal species, in particular those which are threatened or endangered and often contain a distinctive or unique plant community.

Table FOUR-9 RESEARCH NATURAL AREAS

Research Natural Areas	Acres
Mill Creek	800
Bagby	540
Bull Run	360
Bull Run addition	400
Big Bend Mountain	3,900
Gumjuwac	3,300
TOTAL ACRES IN RESEARCH NATURAL AREAS	9,300

A3-RESEARCH NATURAL AREA (pg. 2 of 6)

Goal: To preserve examples of natural ecosystems in an unmodified condition for research and education, and to provide areas to serve as a baseline against which human impacts on natural systems can be measured. Generally, Research Natural Areas are set aside because they contain a distinctive or unique plant community, and serve as gene pool reserves for plant and animal species (particularly those which are threatened or endangered or have been listed as "sensitive").

Management Activities: Management activities shall generally be confined to research and/or studies which must comply with needs determined by the Pacific Northwest Research and Experimental Station (PNW)). Generally public use, roads, timber harvest, including salvage and cultural treatments, and outdoor recreation and facilities are not permitted within RNAs.

RNAs shall be recommended for withdrawal from mineral entry and other inappropriate land uses.

STANDARDS by Functional Activity:

Administration

1. Research

   A. Research and/or studies conducted within RNAs shall comply with needs determined by the RNA scientist and the Pacific Northwest Experiment Station (PNW).

2. Protection

   B. Plant communities which the individual RNA represents must be maintained within the RNA boundaries.

   C. RNAs must be identified in administrative records as to location, purpose, and other objectives.

3. Dispersed Recreation

   A. Dispersed recreation facilities shall not be allowed to be constructed/reconstructed within Research Natural Areas.

   B. Dispersed recreation use must be prohibited if it would compromise the research values of the RNA.

C. No trail construction/reconstruction shall be permitted for dispersed recreation purposes if conflicts arise.

D. Research Natural Areas shall be closed to all forms of off-road vehicle use. Areas shall be posted as closed to ORV use.

4. Developed Recreation

A. Recreation facilities and developed recreation site construction/reconstruction shall not be allowed within Research Natural Areas.

B. Developed recreation use shall not be permitted within Reserach Natural Areas.

5. Wilderness and Wild & Scenic Rivers

A. If alternatives are unavailable, Research Natural Areas may be located within wilderness and/or wild & scenic river corridors administered by the Forest Service.

6. Visual Resource Management

A. The visual quality objectives for RNAs must be preservation.

7. Cultural Resources Management

A. (Refer to Forest-wide Standards for Cultural Resources Management.)

8. Wildlife

A. Surveys and planning related to threatened and endangered (T & E) or sensitive species or unusual combinations of fauna may be conducted.

B. Habitat improvement and maintenance should not be permitted except to maintain unmodified conditions.

9. Fisheries

A. Fish habitat surveys and planning should be conducted within RNAs.

B. Habitat improvement or maintenance work should be consistent with the natural processes and should occur only where shown consistent with individual RNA management objectives.

10. Range Management

A. Grazing by livestock shall be restricted to areas where their use is essential for the maintenance of a specific vegetative type.

B. Livestock improvement structures shall not be permitted except where necessary for protection of the RNA from livestock use.

11. Timber Management

A. Chargeable timber harvest shall not be permitted within RNA boundaries.

B. Cultural timber treatments shall not take place within RNA boundaries unless part of an approved research project.

C. Timber salvage operations shall not take place within RNA boundaries unless part of an approved research project.

12. Soil, Water and Air

A. Improvement, maintenance, or monitoring may take place as necessary to establish a baseline for determining effects of land management practices on terrestial and/or aquatic systems. In rare instances, it may be necessary to establish temporary gauging stations and instrument shelters.

13. Minerals Management

11A. Research Natural Areas shall be recommended for withdrawal from mineral entry, mining laws and mineral leasing laws.

14. Geology

A. Technical inventory, evaluation, and site-specific investigation is permitted if it does not have a detrimental effect on the natural unmodified condition of the area.

15. Lands: Special Uses

    A. Research Natural Areas shall be recommended for withdrawal from most forms of inappropriate land uses, including timber harvest.

    B. Special use permits shall not be issued for special uses within Research Natural Areas.

    C. New rights-of-way shall not be permitted within Research Natural Areas.

    D. RNA boundaries shall be marked in the field to insure integrity of the area. As a minimum, all corners or turning points shall be monumented.

16. Transportation Systems/Facilities

    A. Construction of limited temporary roads may be allowed within some RNAs if they are needed to facilitate appropriate use of research.

    B. Reconstruction and/or maintenance of existing facilities shall be allowed as needed to protect resources and for maintenance of natural unmodified conditions within the boundaries of Research Natural Areas.

17. Protection Functions
    Fire Prevention

    A. (Refer to Prevention standards in Forest-wide Standards for Protection Functions.

    Initial Attack Fire Suppression
    Escaped Fire Suppression

    B. Unless otherwise specified in the RNA establishment report, give preference to suppression methods that result in the smallest practicable area burned commensurate with cost-effectiveness and having the least effect on the studies and values in the Research Natural Area.

    Wood Residue Treatment

    C. Unless required to provide protection to adjacent non-RNAs, fuels treatment shall not occur where the sole purpose of the project is hazard reduction.

A3-**RESEARCH NATURAL AREA** (pg. 6 of 6)

Prescribed Burning

D. Prescribed burning from scheduled or unscheduled ignitions should be considered for areas where natural ecosystem succesion can be perpetuated without treatening public safety or adjacent non-RNAs.

Pest Management

E. Generally, no action shall be taken against endemic insects, diseases, or wild animals unless stands outside the RNA are threatened.

Law Enforcement

F. Law enforcement actions shall be taken appropriate for protecting the integrity of the RNA and providing protection for the on-going research projects.

d. A4-SPECIAL INTEREST AREA

Prescription:

Description: This Management Area Designation is applied to lands which contain unusual scenic, historical, archaeological, geological, botanical, zoological, paleontological, or other special characteristics. These areas shall be designated under 36 CFR 294.1 principally for public recreation use, study, and enjoyment.

Table FOUR-10 SPECIAL INTEREST AREAS

Special Interest Areas	ACRES
Barlow Tollgate	.8
Columbia Gorge	
Old Wagon Road	65
Little Crater Lake	
Geologic Area	4.6
Olallie Lake Scenic Area	10,800
Oneonta Gorge Botanical Area	11.5
Face of the Columbia Gorge	23,000
Barlow Road (Historic travel Route)	6,420
Larch Mountain Recreation Area	40
Roaring River Scenic Area (including Mitchell Flats)	23,852
Lost Lake	3,700
Bagby Hot Springs	363
Sugar Pine Botanical Area	40
Little Crater Lake expansion	300
Squaw Meadows	734
Parkdale Lava Beds Geologic Area	875
Olallie Lake Scenic Area expansion	1,700

TOTAL ACRES IN SPECIAL INTEREST 71,905.9

(54,950 Ac. adjusted for overlap*)

* i.e net acres substracting acres within MMR areas

Prescription:

Goal: To protect and, where appropriate, foster public use and enjoyment of important historic, cultural, and natural aspects of our national heritage and to preserve and provide interpretations of unique geological, biological, and cultural areas for education, scientific, and public enjoyment purposes.

Management Activities: Special interest areas are managed to preserve their unique scenic, historical, archeological, botanical, zoological, paleontological, or other special characteristics in the interest of providing interpretation, recreation, education, and research. Each area has an approved management plan which will provide direction for specific protection requirements, acceptable development and enhancement programs, and other uses or activities which are appropriate for the area. Facilities and opportunities may provide for public interpretation and enjoyment. Uses are restricted to the extent necessary to protect the unique features and benefits of the areas.

Scheduling of chargeable timber harvest is not permitted, however salvage of timber is allowed to provide protection for the special features of the specific area and to provide for the safety of visitors. These areas are recommended withdrawn from inappropriate land uses, including timber harvest.

STANDARDS by Functional Activity:

1. Dispersed Recreation

   A. Protect areas that possess unusual scenic recreation and scientific values so that these special values are available for public study, use, and enjoyment.

      Facilities

   B. Recreation facilities shall be provided only for the purposes of maintaining public health and safety or to mitigate impacts from use.

C. Recreation facilities must be constructed of native or natural-appearing materials whenever available. Dimension and non-native materials may be used, but these shall remain unobtrusive in the landscape and be consistent with a semi-primitive ROS classification.

Use Administration

D. Dispersed campsites shall be located to take advantage of topographic and vegetative screening, and also located outside of foreground view (i.e. 100 feet) from lakes, streams, trails, and key interest features.

E. Recreation stock shall not be tied, grazed or held overnight within the foreground areas of lakes, streams, campsites, and trailsides.

F. Occupation of designated dispersed recreation sites for purposes other than recreation shall not be allowed.

Trails

G. The trail system shall be developed as per the district trail development plans and be designed to disperse use and to realize the semi-primitive nonmotorized recreation opportunities of the management area.

H. Trail construction/reconstruction must be consistent with the semi-primitive nonmotorized ROS class. Trails shall be maintained in the assigned maintenance class.

I. Segments of older/abandoned/historic trails, as identified in District trail development plans for incorporation into trail systems, shall be incorporated when developing trail systems and/or new trails.

J. Special interest areas shall be closed to off-road vehicle use with the exception of oversnow vehicle use where it is demonstrated such use will not detract from the special features of the area. Boundaries of special interest areas shall be posted as closed to off-road vehicle use. (See Appendix C.)

2. Developed Recreation

A. Development and recreation use shall be regulated to prevent adverse effects on special features of the area.

B. Recreational stock shall not be tied, grazed, or held overnight within developed sites unless the site is especially designed and designated for stock use.

C. Facilities should be constructed, or modified, to be consistent with a roaded natural or semi-primitive ROS Classification.

4. Visual Resource Management

A. Visual Quality objectives outlined in special interest area plans must be met.

5. Cultural Resources Management

A. (Refer to Forest-wide Standards for Cultural Resources Management.)

6., 7., & 8. Wildlife, Fisheries and Range

A. Structural and nonstructural habitat improvements shall not detract from special features of the area.

B. Livestock grazing may be allowed within special interest areas if it is determined grazing is beneficial to achieving recreational objectives.

9. Timber Management

A. There shall be no chargeable timber harvest in special interest areas.

B. Salvage shall be allowed only for the protection of special features and to provide for the safety of visitors.

C. Firewood cutting may be permitted for on-site recreation use. Personal use firewood cutting should be allowed under permit if cutting does not detract from the special features of the area or conflict with other recreation uses.

10. Soil, Water, Air, and Riparian

    A. Water and soil improvement projects must not detract from the special features of the area.

    B. Motorized boat use shall not be allowed on lakes in special interest areas.

    C. Where there is overlap with the management areas listed below, the combined management objectives shall be met and conflicts shall be resolved in favor of standards that best protect the resource.

11. Minerals Management

    A. To protect the resource values of special interest areas, they shall be recommended for withdrawal from mineral entry and the mining laws.

12. Geology

    A. (Refer to Forest-wide Geology Standards.)

13. Lands-Special Uses

    A. Areas shall be recommended for withdrawal from appropriate land uses, including timber harvest.

    B. Special uses, permits, leases, rights-of-way and easements compatible with the management objectives of the special interest area plan should be permitted.

    C. Special interest area boundaries shall be marked to be easily recognized, readily enforced, and inclusive of all values to be protected.

    D. Discourage and minimize development of FERC/energy withdrawals.

    E. Lands which are critical to the integrity of the special interest area shall be retained or acquired. Lands acquired shall be allocated to the special interest area management area.

14. Transportation Systems/Facilities

A. Road development, maintenance, and facilities must be consistent with the management objectives of the special interest area plan.

B. Existing roads should remain if they do not adversely affect the special features of the area.

15. Protection Functions
Fire Prevention

A. (Refer to Prevention Standards in Forest-wide Standards for Protection functions.)

Initial Attack Fire Suppression
Escaped Fire Suppression

B. Give preference to suppression methods which result in the smallest practicable area burned, commensurate with cost-effectiveness, and have the least effect on the special features and landscape of the area.

Wood Residue Management

C. (Refer to Wood Residue Standards in Timber Emphasis Management Area Standards.)

Pest Management

D. The suppression and prevention of pests shall be limited to outbreaks which threaten the recreational and special values of the area or adjacent resources.

Law Enforcement

E. Law Enforcement actions shall be taken in special interest areas appropriate to providing safety for Forest visitors and protecting resource values.

e. A5-UNROADED RECREATION-No Timber Harvest

Prescription:

Description: These management areas provide for management of the forest for its value as a dispersed recreation resource and to provide settings for dispersed recreation. These areas are also characterized by an environment that is essentially unmodified, and provides for other multiple uses and resources.

Goal: To provide a spectrum of year-round unroaded recreation opportunities and experiences in an undeveloped forest environment; through the management of user activities and natural resource settings within which these activities are typically associated.

Management Activities: These management areas shall be managed to minimize the presence of on-site contacts and use restrictions except where recreation facilities are provided to mitigate the impact from recreation use. The extent and intensity of management for dispersed recreation opportunities shall vary depending on the relative suitability for those opportunities to provide a spectrum of recreation experiences. Managed recreation activities in these management areas shall be nonmotorized. No new roads shall be constructed in these areas and existing roads must be closed. Specific activities shall be oriented toward both consumptive and nonconsumptive use of the land and water resources of the area including hiking, camping, fishing, hunting, horseback riding, mountain climbing, cross-country skiing, winter sports, and snowplay. There shall be no chargeable timber harvest in these Management Areas. Salvage operations necessary to protect the Forest may be allowed provided the Management Area standards can be met and no roads are constructed.

STANDARDS by Functional Activity:

1. Recreation

Facilities

A. Recreation facilities shall be provided only for the purposes of maintaining public health and safety or to mitigate impacts from use.

B. Recreation facilities must be constructed of native or natural-appearing materials whenever available. Dimension and nonnative materials may be used, but these shall remain unobtrusive in the landscape and must be consistent with a semi-primitive nonmotorized ROS classification.

Use Administration

C. Dispersed campsites shall be located to take advantage of topographic and vegetative screening, and also located outside of foreground view (i.e. 100 feet) from lakes, streams, trails, and key interest features.

D. Recreation stock shall not be tied, grazed, or held overnight within the foreground areas of lakes, streams, campsites and trailsides.

E. Occupation of designated dispersed recreation sites for purposes other than recreation shall not be allowed.

F. Unroaded recreation areas and trails in unroaded recreation areas shall be closed to off-road vehicle use. All areas and trails closed shall be posted.

Trails

G. The trail system shall be developed as per the district trail development plans and be designed to disperse use and to be in harmony with the visual objectives for the area.

H. Trail construction/reconstruction must be consistent with the semi-primitive, nonmotorized ROS class. Trails shall be maintained in the assigned maintenance class.

I. Segments of older/abandoned/historic trails, as identified in district trail development plans for incorporation into trail systems, should be incorporated when developing trail systems and/or new trails.

2. Developed Recreation

   A. (See Standards 1A. through 1J. above.)

3. Wilderness (N/A)

4. Visuals Management

   A. The visual quality objective for unroaded recreation management areas shall be retention.

5. Cultural Resources Management

   A. (Refer to Forest-wide Standards for Cultural Resources Management.)

6. Wildlife

   A. Wildlife habitat improvement structures shall be constructed of native or natural appearing materials whenever possible. Dimensional and nonnative materials may be used but they shall remain unobtrusive in landscape and be consistent with the semi-primitive, nonmotorized ROS class.

7. Fisheries

   A. Fish habitat improvement structures in streams shall be constructed of native or natural-appearing materials whenever available. Dimension and nonnative materials may be used but they shall remain unobtrusive in the landscape and be consistent with the semi-primitive nonmotorized ROS class.

8. Range Management

   A. Livestock grazing should not occur unless demonstrated compatible with dispersed recreation activities and allowed within an approved allotment.

   B. Livestock shall not be grazed, or held overnight within the foreground areas of lakes, streams, campsites, or trailsides.

C. Range improvements shall be constructed of native or natural appearing materials whenever they are available. Dimensional and nonnative materials may be used but they should remain unobtrusive to area users and be consistent with the semi-primitive ROS class.

9. Timber Management

A. There shall be no chargeable timber harvest.

B. Salvage operations necessary to protect the Forest may be allowed, provided no new roads are constructed.

C. Firewood cutting may be permitted for on-site recreation use. Personal use firewood cutting should be allowed under permit if cutting does not detract from the natural appearance of the area or conflict with other recreation uses.

10. Soil, Water and Air

A. (Refer to Forest-wide Standards for Soil, Water, Air and Riparian Areas.)

B. Standards for special emphasis watersheds shall be met in the unroaded recreation portions of the Still Creek Watershed.

11. Minerals Management

A. (Refer to Forest-wide Standards for Minerals Management.)

B. Common variety mineral material shall not be developed within unroaded recreation management areas.

C. Exploration should be performed within a reasonable period of time and in a manner that does not alter the semi-primitive character of the land.

D. Facilities and excavations developed during mineral exploration and/or development must be designed to minimum standards and shall be rehabilitated when no longer needed.

E. Exploration should be timed to avoid conflict with recreational activities, i.e. not on weekends during the summer season.

12. Geology

A. (Refer to Forest-wide Geology Standards.)

13. Lands: Special Uses

A. New recreation and nonrecreation special uses shall meet objectives of maintaining a semi-primitive, nonmotorized ROS setting. When practicable, nonconforming special uses shall be terminated.

14. Transportation/Facilities

A. No new roads shall be constructed/permitted in unroaded recreation areas. Existing roads shall be closed (except for those identified necessary for administrative use). Some existing roads should be obliterated as prescribed in road management objectives.

B. Facilities inconsistent with the semi-primitive nonmotorized ROS setting shall not be permitted.

15) Protection Functions
Initial Attack Fire Suppression
Escaped Fire Suppression

A. Give preference to suppression methods that will result in the smallest practicable area being burned, commensurate with cost-effectiveness, and will result in the least effect on unroaded recreation values.

Pest Management

B. The suppression and prevention of pests shall be limited to outbreaks which threaten the recreation values of the area or adjacent resources.

C. Biological methods for suppression of pests should be the preferred method.

Law Enforcement

D. Law enforcement actions shall be taken in unroaded recreation areas appropriate to providing safety for forest visitors and to protecting resource values.

f. A6-ROADED RECREATION-No Timber Harvest

Prescription:

Description: These management areas provide for management of the forest for its value as a dispersed recreation resource and to provide setting for a wide variety of motorized recreation opportunities. These areas shall also provide for other multiple uses and resources.

Goal: To provide a spectrum of year-round recreation opportunities and experience within a natural appearing environment where dispersed motorized recreation experiences are available.

Management Activities: These management areas shall be managed to provide setting for dispersed motorized recreation uses in settings that are natural-appearing except where modifications of the natural landscape are made to accommodate recreation use. Recreation facilities shall be provided to accommodate use and minimize impacts to natural resources. New roads and trails may be constructed in these areas.

Specific activities shall be oriented toward recreational uses such as off-road vehicle use, motorcycle use, mountain bicycling, boating, snowmobiling, all-terrain vehicle use, and auto camping.

Other dispersed recreation uses that are nonmotorized in nature may also occur within this management area, and shall be provided for and accommodated. Scheduled chargeable timber harvest is not permitted in these Management Areas. Salvage timber harvesting may be allowed to protect the forest, provided Management Area standards can be met.

STANDARDS by Functional Activity:

1. Recreation Facilities

A. Structures and improvements shall be provided to protect resource values, to facilitate recreation use, and for administrative purposes.

B. Recreation facilities in roaded dispersed recreation areas shall be constructed of native or natural-appearing materials, whenever available. Dimension and nonnative materials may be used but they shall remain unobtrusive in landscape and be consistent with a semi-primitive, motorized ROS class.

Use Administration

C. Dispersed campsites shall be located to take advantage of topographic and vegetative screening and placed outside of foreground view (i.e. 100 feet) from roads, lakes, streams, trails, and key interest features.

D. Recreational stock shall not be tied, grazed, or held overnight within the foreground areas of lakes, streams, campsites, and trailsides.

E. Occupation of designated dispersed recreation sites for other than recreation shall not be allowed. Industrial camping sites shall be designated by district rangers.

F. Roaded dispersed recration areas will generally be open for off-road vehicle use, except for the area north of Wahtum Lake, other areas will be closed or restricted. All areas and trails closed or restricted from off-road vehicle use shall be posted.

Trails

G. The trail system shall be developed under the district trail development plans and be designed to disperse use, and realize the full recreational potential of roaded recreation areas by complementing the road system.

H. Trail construction/reconstruction must be consistent with the desired VQO. Trails shall be maintained in the assigned maintenance class.

I. Segments of older/abandoned/historic trails, as identified in district trail devlopment plans for incorporation into trail systems, should be incorporated when developing trail system and/or new trails.

2. Developed Recreation

A. (See Standards A. through I. above.)

3. Wilderness (N/A)

4. Visuals Management

A. The visual quality objective for roaded recreation management areas shall be partial retention.

5. Cultural Resources Management

A. (Refer to Forest-wide Standards for Cultural Resources Management.)

6. Wildlife

A. Wildlife habitat improvement structures are permitted, but they must be consistent in appearence with the desired VQO.

7. Fisheries

A. Fish habitat improvement structures in streams within roaded recreation areas are permitted, but they must be consistent in appearance with the desired VQO.

8. Range Management

A. Livestock grazing should be permitted when compatible with dispersed motorized recreation, and when they occur within an approved allotment.

B. Livestock shall not be grazed or held overnight within the foreground areas of lakes, streams, campsites, or trailsides.

C. Range improvements should be located away from areas of concentrated recration use except for those improvements especially designed for recreation stock.

9. Timber Management

   A. There shall be no chargeable timber harvest.

   B. Salvage operations necessary to protect the Forest may be allowed, provided a natural appearing environment is maintained.

   C. Firewood cutting may be permitted for on-site recreation use. Personal use firewood cutting should be allowed under permit if cutting does not detract from the natural appearance of the area or conflict with other recreation uses.

10. Soil, Water and Air

   A. (Refer to Forest-wide Standards for Soil, Water, Air and Riparian Areas.)

11. Minerals

   A. (Refer to Forest-wide Standards for Minerals Management.)

   B. The development of common variety minerals material shall be discouraged. Permitted development shall occur away from areas of concentrated use.

   C. Exploration should be performed within a reasonable period of time with an attempt to avoid conflict with recreation activity.

   D. Facilities and excavations developed during mineral exploration and/or development must be designed to minimum standards and shall be rehabilitated when no longer needed.

12. Geology

   A. (Refer to Forest-wide Geology Standards.)

13. Land: Special Uses

    A. New recreation and nonrecreation special uses shall meet the desired VQO. When practicable, nonconforming special uses shall be terminated.

14. Transportation/Facilities

    A. New roads and structures must be consistent with the desired VQO.

    B. Existing roads which are not necessary for the recreation opportunities being managed shall be closed.

15) Protection Functions
    Initial Attack Fire Suppression
    Escaped Fire Suppression

    A. Give preference to suppression methods which result in the smallest practicable area burned, commensurate with cost-effectiveness, and have the least effect on the semi-primitive recreation values for which the area is being managed.

    Wood Residue Management

    B. (Refer to standard C. in Timber Emphasis Management Area Standards.)

    Pest Management

    C. The suppression and prevention of pests shall be limited to outbreaks which threaten the recreational values of the area or adjacent resources. Biological methods should be preferred.

    Law Enforcement

    D. Law enforcement actions shall be taken in dispersed roaded recreation areas appropriate to providing safety for forest visitors and to protecting resource values.

g. A8-NORTHERN SPOTTED OWL HABITAT AREAS (SOHA's)

Prescription:

Description: A Spotted Owl Habitat Area (SOHA) is a stand of old growth timber of 1,000 acres having the characteristics:

(1) "Suitable spotted owl habitat" including, in order of priority, old growth and/or mature forest characterized by (as) multi-layered stands with an overstory greater than 200 years, and an uneven-aged understory. Large, dead, standing, and down wood should be abundant.

(2) 1,000 acres of "suitable spotted owl habitat" in a single contiguous area (when possible), or in blocks of 80 acres or larger, within a 2.1 mile radius of the established nest site (area).

(3) 3-pair Spotted Owl Habitat Area (SOHA) groups not over 12 miles apart, with the distance between pairs within a 3-pair group not to exceed 3 miles; and the distance between single pair SOHAs not to exceed 6 miles.

(4) Old growth ecosystems where man's activities may be evident, but are not substantially altered.

The initial location of suitable acreage within a given SOHA may change. This is because some of the acres with originally suitable timber stands may become unsuitable due to fires, diseases, or other changes, and some of the unsuitable stands may, through growth, become suitable habitat for owls. Such changes in timber stands would require "exchanges" (i.e. stands that become suitable owl habitat would be exchanged for others which become unsuitable). Exchanges would facilitate "blocking up", or concentrating, old growth stands into contigious spotted owl management acres within the SOHAs.

Goal: To provide and manage old growth forest habitat in terms of quality, size, and distribution to perpetuate viable populations of northern spotted owls, as an indicator species for old growth dependent wildlife species.

A8-NORTHERN SPOTTED OWL HABITAT AREAS (SOHA's) (pg. 2 of 6)

Management Activities: Management emphasis shall be to protect, maintain, and/or improve quality nesting habitat and foraging areas for spotted owls. Stands of old growth must contain large trees, snags, dead downed material, and in many situations, two or more canopy levels.

Limited activities such as dispersed recreation and livestock grazing are allowed provided conditions are not detrimental to managing for spotted owls. New roads shall not be constructed, road density must be limited, and existing road systems must be controlled and subject to seasonal access restrictions. Scheduling of chargeable timber harvest is not permitted. Salvage timber harvest or cultural treatments are not permitted within SOHAs.

NOTE: See Draft Pacific Northwest Regional Plan, USDA Forest Service, July 1981, for further details of management for spotted owls.

STANDARDS by Functional Activity:

1. Dispersed Recreation

A. Dispersed recreation use detrimental to managing for spotted owls should not be encouraged.

Facility and Site Construction

B. New dispersed recreation sites should not be develped if detrimental to managing for spotted owls.

Use Administration

C. Spotted owl areas and trails in spotted owl areas shall be closed to off-road vehicle use unless they are compatible with managing for spotted owls. All areas and trails closed, or restricted, from off-road vehicle use shall be posted.

Trails

D. Development of new trails and associated facilities is permitted in spotted owl areas; unless determined to be in conflict with the primary management objectives.

E. Existing trails or other facilities in spotted owl areas should be maintained at the lowest standard consistent with district trail development plans.

2. Developed Recreation

A. New developed recreation facilities should not be constructed within spotted owl habitat unless compatible with managing for spotted owls.

3. Wilderness

A. (Refer to Standards for Wilderness when Spotted Owl Habitat Areas lie within Wilderness.)

4. Visual Resource Management

A. The visual quality objective for spotted owl habitat areas shall be retention.

5. Cultural Resources Management

(Refer to Forest-wide Standards for Cultural Resources Management.)

6. Wildlife Management

Surveys and Planning

A. Occupancy of spotted owl habitat areas shall be confirmed (regional direction requirement).

Habitat

B. Suitable habitat shall include (in order of priority) old growth and/or mature forest characterized by (as) multi-layered stands with an overstory greater than 200 years, and an uneven-aged understory. Large, dead, standing, and down wood should be abundant (regional direction requirement).

C. Suitable habitat of 1,000 acres shall be in a single contiguous area (when possible) or in blocks of 80 acres or larger within a 2.1 mile radius of the established nest site (area) (regional direction requirement).

D. The distance between 3-pair spotted owl habitat area (SOHA) groups shall not exceed 12 miles. The distance between pairs, within a 3-pair group, shall not exceed 3 miles. The distance between single pair SOHAs shall not exceed 6 miles (regional direction requirement).

E. The evidence of mans' activities may be present but shall not have substantially altered the old growth ecosystem.

Habitat Improvement

F. Direct habitat improvements for old-growth dependent species should be encouraged.

G. Suitable spotted owl area (SOHA) habitat removed for any reason shall be offset by addition of equal, or better, habitat that is immediately adjacent to the SOHA.

7. Fisheries

A. Rehabilitation and/or fisheries enhancement projects should be permitted. These activities shall be consistent with managing for spotted owls.

8. Range Management

A. Livestock grazing shall not be allowed to substantially impact old growth habitat/ecosystems, and must occur only within an approved allotment.

9. Timber Management

A. Chargeable timber harvest shall not be allowed within spotted owl habitat areas.

B. Timber salvage operations or cultural treatments shall not be permitted within SOHAs (except in the Bull Run Planning Unit to meet the requirements of Public Law 95-200). Removal and/or sale of down trees that are a hazard to road prisms or road access shall be permitted only within cleared rights-of-way.

C. Firewood cutting shall not be allowed within SOHAs except by special permit under special management techniques.

Genetic Improvement

D. Genetic improvement activities within SOHAs shall be limited to select trees.

10. Soil, Water, and Air

(Refer to Forest-wide Standards for Soil, water, Air and Riparian Areas.)

11. Minerals

A. (Refer to Forest-wide Standards for Minerals Management.)

B. Common variety minerals operations shall not be conducted within spotted owl habitat areas between March 1 and August 31. Existing rock quarry operation within SOHA boundaries shall not be expanded, and this should be phased out if possible.

12. Geology

A. (Refer to Forest-wide Geology Standards.)

13. Land: Special Uses

A. Spotted owl habitat areas (SOHAs) shall be recommended for withdrawal from all forms of appropriation including timber harvest. If the area is dropped from consideration as a SOHA, the withdrawal shall be recommended dropped.

B. New rights-of-way shall not be located within spotted owl nesting core areas.

C. Spotted owl habitat areas shall be distributed to support viable populations of spotted owls. Lands needed to achieve this distribution must be placed in category II (retain or acquire).

14. Transportation Systems/Facilities

A. Effective road density shall not exceed 2 miles per square mile within spotted owl habitat areas. Existing roads within spotted owl habitat areas shall be closed as prescribed in road management objectives especially during the breeding and nesting season (March 1 through August 1).

15. Protection Functions
Initial Attack Fire Suppression
Escaped Fire Suppression

A. Give preference to suppression methods which result in the smallest practicable area burned, commensurate with cost-effectiveness, and have the least effect on the old growth habitat characteristics of the areas.

Pest Management

B. Herbicides should not be used within spotted owl habitat areas.

h. A9-KEY SITE RIPARIAN HABITAT

Prescription:

Description: Key Site Riparian Areas are relatively large riparian areas (20 acres) exhibiting high habitat diversity and outstanding capabilities for producing high quality water, excellent fish spawning and rearing habitat, high quality waterfowl breeding, nesting and resting habitat, wildlife cover, and diverse plant communities. To date, the character and function of identified key site riparian areas have not been appreciably altered by competing management activities.

Riparian areas are among the most productive, sensitive, diverse and most geographically limited ecosystems within National Forest Lands (FSM 2526). A variety of important resources, including resident and anadromous fish, various wildlife species, certain plants and vegetative communities, and the water itself depend totally on riparian areas.

Goals: To maintain or improve habitat conditions and hydrological conditions in a well-distributed network of selected riparian areas, notable for their exceptional diversity, high natural quality and key role in providing for the continued production of riparian resources.

A secondary goal is to restrict levels of management for nonriparian dependent resources to those activities with high probability for benefits to riparian resources and that exhibit minimal risk of adverse effects.

Management Activities: Emphasis for management of these areas is the long-term maintenance or improvement of riparian ecosystem character and function, to maintain or improve terrestrial and aquatic habitat conditions associated with each individual area, and to favor natural ecosystem processes. Riparian resource management shall also emphasize preferential consideration of riparian-dependent resources through interdisciplinary planning and management. Other resource management activities shall be managed to complement maintenance of riparian-dependent resources. Soil, water, fish, and wildlife management activities must predominate. Dispersed walk-in recreation and interpretation are encouraged. Roading and developed recreation shall be discouraged. Scheduling of chargeable timber harvest is not permitted, but timber harvest may occur to the extent necessary to meet riparian management objectives. Salvage harvest may occur in order to meet riparian management objectives.

STANDARDS by Functional Activity:

1. Dispersed Recreation, and
2. Developed Recreation

   A. The development of new, or expansion of existing dispersed and developed recreation sites, facilities, and trails (hiking and cross country skiing) should not be allowed within key site riparian areas unless consistent with riparian resource management objectives.

   B. Existing developed and dispersed recreation sites, facilities, and trails (hiking and cross country skiing) must be developed in a manner consistent with riparian management objectives. Where developments are not consistent, modification or rehabilitation of the site or facility must occur.

   C. Off-road vehicle use, other than over-snow vehicles, shall not be allowed within key site riparian areas. Over-snow vehicle use shall be consistent with riparian management objectives.

   D. Closure or obliteration of access roads or equipment trails built or need for rehabilitation and/or enhancement projects shall be required (following project completion).

3. Wilderness

   A. Riparian managemenet objectives must be developed for each key site riparian area within Wilderness.

   B. Distinctive riparian ecosystem attributes of each key site within Wilderness shall be emphasized consistent with wilderness standards.

4. Visual Resource Management

   A. Where key sites are located within a designated Level I Scenic viewshed the visual quality objectives (VQO) of the viewshed must be the standard, see map of adopted VQO.

   B. Where key sites are located within an inventoried Level I Viewshed the minimum VQO must be partial retention in the foreground and modification in the middleground.

   C. Where key sites are located within an Inventoried Level 2 Viewshed the VQO must be modification.

5. Cultural Resources Management

   A. Authorized excavation of cultural resource sites should be conducted in a manner which minimizes impacts on riparian resources within key site riparian ares. Necessary rehabilitation shall be promptly performed.

6. Wildlife, and
7. Fisheries

   A. Riparian resource management objectives must be developed that recognize the site specific characteristics of each key site riparian area.

   B Indigenous plant species should normally be used in revegetation projects within key site riparian areas.

   C. When there is overlap between Key Site Riparian Areas and Wildlife Management Areas (SOHAs and woodpecker/marten areas); the design, timing, location, etc., of project activities must be coordinated to insure consistency with wildlife management objectives.

8. Range Management

   A. Adjust grazing system and/or intensity as necessary to attain riparian objectives within key site riparian areas.

   B. Chemical control of noxious weeds shall not be used in key site riparian areas.

9. Timber Management

   A. There shall be no chargeable timber harvest in key site riparian areas. Timber harvest should occur only to the extent necessary to meet riparian management objectives.

   B. Salvage operations may occur in order to meet riparian management objectives.

   C. Indigenous tree species shall be preferred for reforestation projects within key site riparian areas.

D. Firewood cutting shall not be allowed within key site riparian areas.

E. Chemical control of vegetation shall not be used in key site riparian areas.

10. Soil, Water and Air

A. Site-specific riparian management objectives must be developed for each key site riparian area.

B. Riparian rehabilitation/enhancement projects must:
(1)Have clearly stated riparian management objectives.
(2)Be cost effective.
(3)Contain base level monitoring to quantitatively assess accomplishment of riparian management objectives.
(4)Be coordinated to insure consistency with other management goals where overlap of management areas occurs.

11. Minerals Management

A. (Refer to Forest-wide Standards for Minerals Management.)

B. Common variety minerals development or removal of common variety minerals shall not occur within key site riparian areas unless demonstrated consistent with key site riparian management objectives.

12. Geology

A. (Refer to Forest-wide Geology Standards.)

13. Lands: Special Uses

A. Permits must include appropriate provisions addressing accomplishment of riparian management objectives as well as measures for correcting or minimizing damage that occurs as a result of permitted activities.

B. Existing special use permits not compatible with riparian management objectives shall not be reissued when they reach term.

C. Recurrent activities in key site riparian areas (e.g. industrial camps) shall be evaluated for their impact on riparian values. When adverse conditions are found, corrective action must be promptly taken.

D. Rights-of-way and easements should not be located in key site riparian areas when practical alternatives are available.

E. Minimum instream flow requirements must be established for small hydroelectric development projects.

F. Land exchange proposals which improve management or consolidate Forest Service ownership in key site management areas should be considered.

14. Transportation Systems/Facilities

A. Whenever practicable, roads and other facilities shall be designed to avoid key site riparian areas. Local roads within key site riparian areas shall include provisions for closure, or access control, unless otherwise addressed in environmental assessment.

B. Road crossings at anadromous fish streams shall be designed to provide for adult and juvenile fish passage:
(1) Crossings at nonanadromous, resident trout streams shall provide for fish passage unless shown impractical in project environmental analysis.
(2) Fish passage designs shall be coordinated with fisheries and water personnel.

C. Road crossings of key site riparian areas must specifically address riparian objectives and these objectives must be included in road management objectives.

E. Drainage systems for roads within, or adjacent to, key site riparian areas should incorporate practical features to minimize or eliminate discharge of drainage into key site water bodies (streams, lakes, ponds, wetlands).

G. Closure and access control shall be used in key site riparian areas where needed to prevent damage to riparian values.

15. Protection Functions
Fire Prevention

A. (Refer to Prevention Standards in Forest-wide Standards for Protection Functions.)

Initial Attack Fire Suppression
Escaped Fire Suppression

B. Give preference to suppression methods which result in the smallest practicable area burned, commensurate with cost-effectiveness, and have the least effect on the riparian characteristics of key sites.

Wood Residue

C. When analyzing the layout of harvest units and in fuels treatment plans, consider locating fire lines back into harvest units along key site riparian areas.

i. **A10-DEVELOPED RECREATION SITES Standard service Level** (i.e. "Full Service")

Prescription:

Description: The management areas provided for development of forest areas for their value as recreation sites. At these sites, physical improvements are maintained to offer a wide variety of developed recreation experiences. Included in this category are campgrounds, picnic grounds, boating sites, swimming areas, resorts, observation sites, marinas, organization sites, and recreation residences.

Goal: To provide a range of quality outdoor recreational opportunities for concentrated recreation use at readily accessible, appropriately designed developed sites.

Management Activities: All developed recreation sites are managed at the level of operation and maintenance demanded by the public. It is expected that this will result in Full Service Management for developed sites; as defined below:

Operation and maintenace of developed recreation sites are at a level that shall insure normal life expectancy of facilities, and maintenance at a level that meets established standards and management objectives for public service and use as per information contained in Forest Service Manual 2330 and the "Forest Service Green Book" [1/]; i.e. full service standards of maintenance, service, and compliance. It insures the experience level for which the site is designed, meets standards and objectives for public health, safety, comfort and convenience, and meets other aspects of administration as outlined in Forest Service manuals and and regulations. At this level, facilities are maintained in a full functional condition, i.e. at RIM condition class 1 or 2 (see glossary), and all backlog rehabilitation needs associated with developed sites shall be accomplished by the end of the first 10 years of the Plan.

1/ Reference to standards and the "Forest Service Green Book" pertain to the following: "Cleaning Recreation Sites" U.S. Dept. of Agriculture, Forest Service Publication 8023 1801, ED & T 9009. Equipment Development Center, San Dimas, CA 91773. July 1980.

Developed sites are managed for their value as recreation sites. At these sites physical improvements and often sophisticated facilities are maintained to offer a wide variety of developed recreation experiences for high concentrations of visitors. Visitors with little knowledge of outdoor activities, and the related skills are able to enjoy developed recreation facilities. Activities involve use of motorized vehicles and are often water related. Timber harvest and salvage operations in developed sites shall be in accordance with vegetative management plans for each site. Scheduled chargeable timber harvest is not appropriate in developed sites. Developed recreation sites are recommended withdrawn from timber harvest, mineral entry and the mining laws and other inappropriate land uses.

The Forest shall complete a developed site priority ranking to be used to allocate operations and maintenance and rehabilitation funds. This process should include evaluating variables such as amount of use, cost per unit of output, and the uniqueness of the site. The resulting ranking may suggest closing of some developed sites and expansion of others.

For appropriately ranked developed sites, an operation and maintenance plan must be completed. This plan must specify the season-long operations necessary to manage the site at Standard Service Level. In addition, site and vegetative management plans must be completed for each facility. Reconstruction or expansion of any site requires an approved site plan.

STANDARDS by Functional Activity:

1. Dispersed Recreation

   A. Dispersed recreation opportunities that are complementary to the developed sites shall be managed in accordance with forest-wide standards for dispersed recreation.

2. Developed Recreation Management and Administration

   A. Administration, occupancy, and Management and use of developed recreation sites must conform to operation and maintenance plan specifications. All developed recreation sites shall be maintained at standard service level, as outlined in the regional "Green Book" for developed site maintenance. (See Prescription, previous page.) This maintenance level will insure normal life expectancy of facilities. 100 percent of any backlog rehabilitation shall be completed.

   Facility and Site Construction

   B. Construction/reconstruction of any site shall conform to an approved site plan.

   Reconstruction

   C. Increased capability for existing recreation sites at standard service level funding must conform to approved site plan and developed site priority ranking study. Management direction must be coordinated with adjacent, or overlapping, management areas.

   Use Administration

   D. Occupancy and use of developed sites shall be regulated to the extent necessary to protect resources and facilities and to insure the safety and enjoyment of the recreating public.

   E. All vehicles, except over-snow vehicles, shall be limited to access roads and parking areas.

   F. Recreational stock shall not be tied, grazed, or held overnight within developed sites unless the site is especially designed and designated for stock use.

3. Wilderness (N/A)

4. Visual Resource Management

   A. A visual quality objective of partial retention is the goal for developed recreation sites.

5. Cultural Resources Management

   A. (Refer to Forest-wide Standards for Cultural Resources.)

6. Wildlife Management
   and
7. Fisheries

   A. Wildlife and fish habitat improvement projects and/or structures should be allowed. However, these must not conflict with the purposes and development level of the site. Project design must conform with vegetative plans for the site.

8. Range Management

   A. Use of developed sites for commercial livestock grazing shall not be permitted.

9. Timber Management

   A. Chargeable timber harvest shall not be permitted in developed recreation sites except for that planned in vegetative management plans.

10. Soil, Water and Air

    (Refer to Forest-wide Standards for Soil, Water, Air and Riparian Areas.)

11. Minerals Management

    A. (Refer to Forest-wide Standards for Minerals Management.)

    B. Common variety minerals shall not be developed within developed sites unless according to the general development plan.

C. To protect the facilities and recreational values of developed recreation sites, they shall be recommended for withdrawal from mineral entry and the mining laws.

12. Geology

A. (Refer to Forest-wide Geology Standards.)

13. Lands: Special Uses

A. Developed recreation sites shall be recommended for withdrawal from all forms of inappropriate land uses including timber harvest.

14. Transportation System/Facilities

A. Roads and associated facilities and road signing within developed sites managed at standard service level must conform to the development level and recreation experience level planned for the site within required safety regulations.

15. Protection Functions
Prevention

A. Within Forest-wide standards for prevention activities, prevention actions within developed sites must attempt to complement the development level and experience level planned for the site.

Initial Attack Fire Suppression

B. Give preference to suppression methods which result in the smallest practicable area burned, commensurate with cost-effectiveness, and have the least effect on the developed recreation site.

Escaped Fire Suppression

C. Rehabilitation and revegetation work following a fire shall attempt to follow vegetative plan goals as closely as possible.

Pest Control

D. Biological methods of control shall be preferred. Suppression and prevention actions will attempt to follow vegetative plans for the site as closely as feasible.

Wood Residue Treatment

E. Management of the down woody material must be defined in the vegetative management plans for each developed site.

Law Enforcement

F. Law enforcement actions shall be taken appropriate to providing for safety of developed site users and for protecting facilities and resources in developed sites.

j. **A11-WINTER RECREATION AREAS**

Prescription:

Description: Winter Recreation Management Areas include those areas currently under a special use permit or Master Plan, those areas with the potential to be managed for winter use under such a permit or plan, and those areas currently receiving heavy winter recreation use or those areas with potential to provide dispersed winter recreation opportunities, such as cross country skiing and snowplay or over-snow machine use.

Goal: To provide quality winter recreation opportunities including: downhill skiing, nordic skiing, snowmobiling, and snowplay within a natural appearing forest environment.

Management Activities: Emphasis for management within these areas shall be to provide recreation opportunities and facilities for downhill skiing under special use permit, and provide opportunities and facilities for nordic skiing, snowplay, and snowmobiling, both in areas under permit and in other portions of the Management Area where the potential exists to provide dispersed winter recreation opportunities. New facilities, roads, vegetation management and other development activities are permitted when in compliance with approved master plans and/or special use permits. Scheduled chargeable timber harvest is not permitted within portions of winter use areas under master plans or permits. However, an approved special use permit or Master Plan may allow removal of nonchargeable and salvage timber volume. Timber harvest activities and salvage operations within other portions of winter recreation areas shall provide for retention of a natural appearing forest environment during the winter season. Developed portions of winter recreation areas shall be recommended for withdrawal from mineral entry and the mining laws to protect the facilities and winter recreation values of the area.

STANDARDS by Functional Activity:

A11-WINTER RECREATION AREAS (pg. 2 of 5)

1. Dispersed Winter Recreation

Facilities

A. Recreation facilities shall be provided for the purposes of winter recreation opportunities such as cross-country and nordic skiing, snowmobiling and snowplay, for health and safety or to mitigate impacts from use.

B. Recreation facilities must be constructed of native or natural-appearing materials when available. Dimension and nonnative materials may be used, but these shall remain unobtrusive in the landscape and be consistent with the desired VQO.

Use Administration

C. Dispersed facilities should be located to take advantage of topographic and vegetative screening, and also be located outside of foreground view (i.e. 100 feet) from lakes, streams, trails, and key interest features.

D. Recreation stock shall not be tied, grazed, or held overnight within the foreground areas of lakes, streams, campsites and trailsides, nor grazed within developed areas that are under master plan permit.

E. Occupation of designated winter recreation areas and sites for purposes other than recreation shall not be allowed.

Winter Trails and Roads for Winter Recreation Use

F. Vehicle use and use of over-snow machines shall be managed to: Prevent damage to facilities, resources, and prevent conflicts with other users.

G. Roads, snowplay areas and trails in winter recreation areas that are designated for skiing or snowplay shall be closed to wheeled vehicle use during the snow season. Roads, trails and areas closed to vehicles shall be posted and physically closed during the snow season.

H. Winter trails must be developed as per district trail development plans and be designed to disperse use and to realize the desired VQO.

I. Winter trails and areas must be signed as to intended use; nordic skiing, over-snow machine use, snowplay, etc. Signing shall display proper winter use rules and etiquette.

2. Developed Winter Recreation Use Facilities

A. Development (including new construction, reconstruction, or relocation of improvements), administration, occupancy, and use of developed winter recreation sites under permits must conform to conditions and specifications in approved master plans and special use permits. Expansion proposed beyond the scope of existing master plans or permits shall require a new or revised plan or permit. The permittee, or operator, shall be responsible for completion of the required documents.

2B. Any proposed expansion of facilities shall be coordinated with the State Highway Department and take into account impacts on use levels on major highways on the forest.

C. Consistent with the needs of the users and the Forest Service, occupancy and use of the developed portion of winter recreation areas shall be regulated to the extent necessary to insure that the available facilities provide winter recreation opportunities for visitors.

D. All wheeled vehicles shall be limited to cleared roads and parking areas. Snow related opportunities, snow conditions, and the requirements of individual sites shall determine access by over-snow vehicles.

E. No sites for recreation residences shall be developed within winter recreation areas.

3. Wilderness (N/A)

4. Visual Resource Management

A. A visual quality objective of partial retention is the goal for the developed portion of the areas. Management activity must achieve a visual effect of retention within two years of project completion. The remainder of winter recreation areas must have a visual quality goal of partial retention.

5. Cultural Resources Management

   A. (Refer to Forest-wide Standards for Cultural Resources Management.)

6. Wildlife
   and
7. Fisheries

   A. Habitat improvement projects and rehabilitation projects must be coordinated with recreational objectives for the management area and be consistent with the VQO for the area.

8. Range Management

   A. The use of the portions of winter recreation areas under master plans or permits shall not be available for commercial livestock grazing.

9. Timber Management

   A. Chargeable timber harvest shall not be allowed within the portions of winter recreation areas under master plans or permits. However, an approved master plan or special use permit may allow removal of nonchargeable timber volume.

   B. Timber harvest activities and salvage operations within other portions of winter recreation areas shall provide for a natural appearing Forest environment during the winter season.

10. Soil, Water, and Air

    A. (Refer to Forest-wide Standards for Soil, Water, Air and Riparian Areas.)

11. Minerals Management

    A. (Refer to Forest-wide Standards for Minerals Management.)

    B. Removal of common variety minerals within portions of winter recreation areas under a master plan or permit shall not be allowed.

C. Developed portions of winter recreation areas shall be recommended for withdrawal from mineral entry and the mining laws to protect the facilities and winter recreation values of the area.

12. Geology

A. (Refer to Forest-wide Geology Standards.)

13. Lands: Special Uses and Master Plans

A. Privately financed developments and Forest Service owned developments operated by concessionaires under permit or master plans shall be inspected regularly to insure that the terms of the master plans and/or special use permit are being met.

14. Transportation/Facilities

A. Roads and associated facilities must be consistent with the VQO for the area and are permitted if in compliance with approved master plans and special use permits.

B. Emphasis should be given to ehancement of winter recreation opportunities and to maintaining natural appearing surroundings when designing and constructing roads and associated facilities.

C. Roads unnecessary to the winter recreation opportunities shall be closed except for roads identified in the master plan or permit as necessary for operation or administrative use.

15. Protection Functions
Initial Attack Fire Suppression
Escaped Fire Suppression

A. Give preference to suppression methods that will result in the smallest practicable area being burned, commensurate with cost-effectiveness, and which result in the least effect on unroaded recreation values.

Law Enforcement

B. Law enforcement actions shall be taken as necessary to provide safety for forest visitors, reduce conflicts between users, and protect resource values.

k. **A12-OUTDOOR EDUCATION AREAS**

Prescription:

Description: These management areas are specific sites on the forest set aside for outdoor education purposes. The sites are partially developed, with facilities for interpretative services, picnicking and camping facilities, shelters, and viewpoint facilities. The remainder of these management areas are mostly in a natural state.

Goal: To provide opportunities for outdoor public education programs, environmental education, interpretative work, and other general recreation activities for groups.

Management Activities: In general, management emphasis shall be to preserve the majority of these management areas in their natural state. Facilities such as interpretative trails, picnic and camping sites, shelters and viewpoint facilities shall be allowed and provided. Development and facilities permitted must follow existing site development plans. At "Wyeth Bench Education Site" plans are to develop a major education retreat complex. Timber harvest and salvage operations in Outdoor Recreation Areas shall be in accordance with vegetative management plans for each site. For each outdoor education site, an operation and maintenance plan must be completed. This plan will specify the season-long operations necessary to manage the site. In addition, site and vegetative management plans must be completed for each area. Reconstruction or expansion of any site requires an approved site plan. Scheduled chargeable timber harvest is not appropriate in Outdoor Education Areas. Developed portions of Outdoor Education Areas shall be recommended for withdrawal from mineral entry and the mining laws and other inappropriate land uses to protect the facilities and educational values of the area.

STANDARDS by Functional Activity:

1. Dispersed Recreation and Interpretation Facilities

   A. Recreation facilities shall be provided for the purposes of maintaining public health and safety, to mitigate impacts from use and to enhance outdoor education efforts.

   B. Recreation facilities must be constructed of native or natural-appearing materials whenever available. Dimension and non-native materials may be used, but these shall remain unobtrusive in the landscape and be consistent with a semi-primitive nonmotorized ROS classification.

   Use Administration

   C. Dispersed campsites shall be located to take advantage of topographic and vegetative screening, and also located outside of foreground view (i.e, 100 feet) from lakes, streams, trails, and key interest features.

   D. Recreation stock shall not be tied, grazed, or held overnight within the foreground areas of lakes, streams, campsites, and trailsides.

   E. Occupation of facilities within Outdoor Education Sites shall be only for purposes allowed in development plan.

   F. Vehicle use within outdoor education areas shall be managed to prevent damage to facilities, vegetation, and interpretive and outdoor education values of the area.

   G. Outdoor education areas and trails in outdoor education areas shall be closed to off-road vehicle use. All areas and trails closed shall be posted.

   Trails

   H. The trail system must be developed under the district trail development plans and be designed to disperse use and be in harmony with the desired VQO.

   I. Trail construction/reconstruction must be consistent with the semi-primitive desired VQO. Trails shall be maintained in the assigned maintenance class.

2. Developed Outdoor Education and Interpretation Facilities

   A. Administration, occupancy, and use of developed recreation facilities must conform to operation and maintenance plan specifications. All sites shall be maintained to standard service level.

   B. Consistent with the needs of users and the Forest Service, occupancy and use of the developed portion of outdoor education areas shall be regulated to the extent necessary to insure that the available facilities provide outdoor education opportunities for visitors.

   C. All vehicles shall be limited to access roads and parking areas, with the exception of snow related opportunities. Snow conditions and the requirements of individual sites shall determine access by over-snow vehicles.

   D. No sites for recreation residences shall be developed within outdoor recreation areas.

3. Wilderness (N/A)

4. Visual Resource Management

   A. A visual quality objective of management retention is the goal for the developed portion of the areas. The remainder of the areas must have a visual quality objective goal of retention. Activity will be consistent with development plan.

5. Cultural Resources Management

   A. (Refer to Forest-wide Standards for Cultural Management.)

6. Wildlife

   A. Wildlife habitat improvement structures must be constructed of native or natural appearing materials whenever possible. Dimensional and non-native materials may be used, but these shall remain unobstructive in landscape.

8. Range Management

   A. With the exception of designated areas, the use of outdoor education areas for commercial livestock grazing shall not be permitted.

9. Timber Management

   A. Chargeable timber harvest shall not be allowed within outdoor education areas.

10. Soil, Water, and Air

   A. (Refer to Forest-wide Standards for Soil, Water, Fir, and Riparian Areas.)

11. Minerals Management

   A. (Refer to Forest-wide Standards for Minerals management.)

   B. Removal of common variety minerals within outdoor education areas shall not be permitted.

   C. To protect the facilities and educational values of the outdoor education areas, they shall be recommended for withdrawal from mineral entry and the mining laws.

12. Geology

   A. (Refer to Forest-wide Geology Standards.)

13. Lands-Special Uses

   A. Outdoor education areas shall be recommended for withdrawal from most forms of inappropriate land uses, including timber harvest.

   B. New recreation and nonrecreation special uses must meet objectives of maintaining the desired objectives for the particular Outdoor Education Area. Whenever practicable, nonconfirming special uses shall be terminated.

14. Transportation/Facilities

    A. Roads and associated facilities must be consistent with the VQO and development plan for the area.

    B. Roads unnecessary to the educational purposes shall be closed except those identified necessary for administrative use. Some existing roads shall be obliterated as prescribed in road management objectives.

15. Protection Functions
    Initial Attack Fire Suppression
    Escaped Fire Suppression

    A. Give preference to suppression that will result in the smallest practicable area being burned, commensurate with cost-effectiveness, and will result in the least effect on the educational benefits of the area.

    Pest Management

    B. The suppression and prevention of pests should be limited to outbreaks which threaten the educational values of the area or endanger adjacent resources.

    C. Biological methods for suppression of pests should be the preferred method.

    Law Enforcement

    D. Law Enforcement actions shall be taken in outdoor education areas appropriate to providing safety for Forest visitors and to protecting resource values.

-CATEGORY B MANAGEMENT AREAS-

1. B1-WILD, SCENIC & RECREATIONAL RIVERS

Prescription:

Description: River segments of three rivers on the Forest are recommended under this Plan for inclusion in the National Wild & Scenic Rivers System. The river segments recommended are parts of the Clackamas, Roaring, and Salmon Rivers. River corridors that are approximately one-half mile wide have been delineated for these three rivers. These management prescriptions and standards apply to Forest lands within these corridors.

Goals: To provide for the management of an approximately one-half mile wide river corridor along specified segments of the **Clackamas**, **Roaring**, and **Salmon Rivers**, eligible for designation as **Wild**, **Scenic**, or **Recreational** Rivers so as to avoid, or mitigate any actions that might possibly affect their potential for designation until Congress decides the deposition of candidate rivers under the National Wild and Scenic Rivers Act of 1968.

The following table displays the number of acres and specific goals associated with each classification. The data incorporates acres of river segments included within a more restrictive Management Area designation.

Table FOUR-11 WILD & SCENIC RIVER CLASSIFICATIONS

Classification	Number of Acres	GOAL
Wild	17,404	Perpetuate a primitive recreational experience and protect the river corridor to maintain an essentially unmodified environment.
Scenic	11,220	Maintain or enhance quality scenery and protect the essentially undeveloped character of shoreline.
Recreational	17,788	Provide opportunities for recreational activities and maintain visual quality of the river corridors.

Management Activities: The following prescriptions describe the activities that may occur within the approximately one-half mile wide river corridors by the type of river classification. The segments of the rivers to which the prescriptions apply are summarized below. For details on the exact river segments to which the prescriptions apply, refer to Appendix E of the accompanying DEIS and to the Wild and Scenic River segments map in Chapter III of the DEIS.

(1) **WILD RIVER SEGMENTS:** This management area intensity applies to the river corridors along the entire Roaring River, and segments of the Salmon River that are generally inaccessible by road, but can be reached by trail or water. The river corridors of these river segments shall be managed essentially free of recreation facilities; except when needed to protect a site from physical degradation. Management must perpetuate an essentially unmodified natural environment. There shall be no chargeable timber harvest or road construction in the river corridor of the Roaring River and the river corridor for these segments of the Salmon and White Rivers. Only those salvage operations necessary to protect the forest are permitted in these river corridors. No timber harvest operations are allowed in the foreground as seen from the riverbank in these river segments. Designated river corridors for wild segments shall be recommended for withdrawal from mineral entry and the mining and mineral leasing laws.

(2) **SCENIC RIVER SEGMENTS:** This management area intensity applies to the river corridors along segments of the Salmon and Clackamas Rivers that are accessed in some places by road and seen in some instances from a major travel route paralleling the river. Some structures, farming, and evidence of timber harvest may be visible, but the shorelines are largely undeveloped. These river segments shall be managed to maintain or enhance the high quality scenery and the essentially undeveloped character of its shoreline. Only those roads for necesary access shall be built within these river corridors. Scheduled chargeable timber harvest and some salvage necessarry to protect the forest may occur to maintain, restore, or enhance a natural appearing forest cover within the corridor width. No timber harvest operations are allowed in the foreground as seen from the riverbank in these river segments. Designated river corridors for scenic segments shall be recommended for withdrawal from mineral entry and the mining and mineral leasing laws.

(3) RECREATION RIVER SEGMENTS: This management area intensity applies to the river corridors along the lower segment of the Clackamas River below Timber Lake Job corps that is accessible by public roads or other methods of motorized access, and that segment of the Salmon River from its headwaters for approximately one-half mile downstream. Visible public roads parallel these river segments, along with habitations and other developments within close proximity. The scenery in these segments has undergone substantial human modification. These river segments shall be managed to provide opportunities for a wide range of recreation activities which are oriented to the river. New roads may be built within the corridor width of these segments, but the roads must remain inconspicuous from the riverbanks. Scheduled chargeable timber harvest, and salvage harvesting as needed to protect the forest, shall be permitted in these river corridors in order to maintain the existing natural appearing forest cover within the designated corridors. No timber harvest operations are allowed in the foreground as seen from the riverbank in these river segments.

STANDARDS by Functional Activity:

1. Dispersed Recreation

   A. Dispersed Recreation shall be managed to provide opportunities appropriate to each river classification (i.e. segment):
   Wild segments must provide primitive/semi-primitive recreational opportunities in an unroaded setting.
   Scenic segments must foster a broad range of river related recreational opportunities in a semi-primitive nonmotorized/roaded natural setting.
   Recreational segments must provide maximum river related opportunities in a roaded natural setting.

   Facility and Site Construction/Administration and Management

   B. Dispersed recreation improvements shall be provided to: Minimize site degradation in wild and scenic segments. Provide for comfort and convenience of users in recreational segments, and a minimum of convenience in scenic segments.

   C. Dispersed Recreation Facilities, such as trails and trail structures, must be designed to be harmonious with the environment and consistent with the desired VQO. Native materials must be used for construction when possible.

   D. Facilities shall be located so that they are screened from view from the river and the river bank.

   Use Administration

   E. River use levels should be managed to maintain the quality of the recreation experience.

   F. Wild segments of W & S Rivers shall be managed to remain in a free flowing and unpolluted state.

   G. In wild river corridors, motorized use shall not be allowed.

   H. In scenic and recreational river corridors, motorized use shall be limited to forest highways and system roads.

I. In recreational segments, motorized water craft may be allowed. Areas, roads and segments of rivers closed to vehicle use shall be posted. Administrative use of motorized vehicles shall be allowed in all classifications.

J. Management should encourage user behavior that is respectful of the river and area reservoirs in all classifications.

K. Recreational stock use should be allowed in all classifications. Stock shall not be tied, grazed, or held overnight within foreground areas of river, campsites, and trails.

2. Facility and Site Construction/Administration and Management

A. Developed recreation improvements shall be provided to: Minimize site degradation in wild and scenic segments. Provide for comfort and convenience of users in recreational segments, and a minimum of convenience in scenic segments.

B. No new developed recreational sites shall be planned for wild segments. (In addition, some existing developed recreation sites may be converted to dispersed sites.) New developed sites are allowed in both scenic and recreational segments.

C. Developed sites of more than 20 units should be discouraged in Scenic river corridors.

D. Developed sites shall be screened from view from the river and river bank.

3. Wilderness

A. N/A

4. Visual Resource Management

A. The Visual Quality Objective (VQO) for wild segments must be retention in both foreground and middleground, as seen from the river and river banks.

B. For scenic and recreational segments, the VQO must be retention for the foreground and partial retention for the middleground, as seen from the river, river banks, U.S. and State Highways, Forest Highways and roads, trails and recreation facilities.

5. Cultural Resources Management

   A. (Refer to Forest-wide Standards for Cultural Resources.)

6. Wildlife
   and
7. Fisheries

   A. Wildlife and Fisheries habitat improvement projects should be permitted, provided they do not significantly modify the river bank, channel direction, or character (volume, direction, turbidity) of the mainstem,

   B. Wildlife and Fisheries habitat improvement projects should be permitted, provided they do not introduce nonnative species that could significantly change the natural ecosystem.

   C. Habitat improvement structures must utilize native or natural-appearing materials when possible. Projects must be coordinated with appropriate Forest specialists.

8. Range Management

   A. Domestic livestock grazing (under permit within approved allotments) should be allowed, providing river banks and riparian vegetation are protected from adverse impacts. No new grazing permits shall be issued within any river segment.

   B. Range improvement (in any river classification) should be limited to that necessary for proper distribution and control of livestock drift. Example: present adverse impacts on river resources and river banks, and to prevent trespass.

   C. Range improvements should be constructed of native or natural-appearing materials when possible.

9. Timber Management

   A. There shall be no chargeable timber harvest within wild river segments.

   B. In scenic segments, chargeable timber harvest shall be designed to restore, maintain, or enhance the natural appearing landscape and maintain old growth forest conditions through the river corridor.

C. In recreational segments, prescriptions and silvicultural systems for timber harvest should maintain general forest cover. Partial cutting should be utilized. Timber harvest should be planned in unseen areas to the extent possible.

D. Harvest units in recreational segments must be shaped and blended to protect or enhance the areas' scenic quality.

E. Permit salvage operations to harvest blowdown, insect attack, or other similar natural mortality for protection of the Forest. Permit salvage operations in middleground of all river segments (middleground as seen from the river), but prohibit all logging activity in the foreground of any river segments. Insure protection for all river banks during logging operations.

10. Soil, Water, Air and Riparian

A. Safeguard against water pollution from any management activities.

B. Resource management activities may be allowed provided they do not significantly modify the river bank, channel alignment, or character (volume, direction or velocity) of the flow of the main stem.

C. Limit bank stabilization to protection of improvements where probability of large scale damage is 70 percent or greater.

B. Where overlap with other management areas occurs, any conflict in management objectives shall be resolved in favor of the standards that best protect the scenic and river resources of the river corridor.

11. Minerals & Energy Management

A. Designated river corridors for wild and scenic segments shall be recommended for withdrawal from mineral entry and the mining and mineral leasing laws.

B. Congressionally designated scenic and recreational river segments shall be recommended for withdrawal from locatable mining laws.

C. Geothermal leasing and Federal Energy Regulatory Commission (FERC) applications for drilling, development, or small hydroelectric projects within wild and scenic river corridors shall be recommended for denial to the Secretary of the Interior, and recommended for denial within main stem segments of recreational rivers or if main stem is affected.

D. Common variety minerals shall not be removed in any river segments.

E. Mineral exploration and development shall be performed in a reasonable period of time with an attempt to avoid conflict with recreational activities. The character of any river corridor shall not be allowed to be altered by mineral activities. Occupancy, if allowed, shall be designed to minimum standards. Disturbance from mineral activities shall be rehabilitated within a reasonable time.

12. Geology

A. (Refer to Forest Wide Geology Standards.)

13. Lands, Special Uses

A. Lands within recommended river corridors shall be retained.

B. Wild river segments of wild and scenic river corridors shall be recommended for withdrawal from certain forms of appropriation including timber harvest.

Permits

C. Existing special land uses, including recreation uses, may be allowed to continue where compatible with a river classification. Nonconforming existing special uses shall not be reissued when they reach term. New developmental special use permits shall not be issued in wild river segments.

D. The construction of new utility and/or transmission lines (gas lines, geothermal and water pipelines, electrical transmission lines, etc.) shall be discouraged in all river segments.

E. Recommend denial of all Federal Energy Regulatory Commission licenses to construct any impoundment, water conduit, reservoir, powerhouse, transmission line, or other hydroelectric work within wild and scenic river segments. Recommend denial for FERC licenses that propose construction of improvements on the mainstem, or on other water bodies in any river corridors if the flow of the mainstem is affected.

14. Transportation Systems/Facilities

A. New roads shall not be constructed within designated wild river corridors and existing roads shall be phased out and rehabilitated.

B. In scenic segments, new roads may be constructed when no other reasonable alternative for necessary access exists.

C. In recreational segments, new roads must be located and designed to maintain visual quality as seen from the river and the river bank.

15. Protection Functions
Fire Prevention

A. (Refer to Prevention Standards in Forest-wide Standards for Protection functions.)

Initial Attack Fire Suppression
Escaped Fire Suppression

B. Give reference to those suppression methods which result in the smallest practicable area burned, commensurate with cost-effectiveness, and have the least affect on the characteristics of the river segment.

C. Off-road vehicle travel within the designated river corridors is not permitted except for emergency fire suppression purposes.

D. Use of tractors to construct firelines is not permitted except for emergency fire suppresion purposes.

E. Direct fire retardant "drops" in such a manner to minimize entry of chemicals into water courses within the designated river corridors.

Pest Management

F. The prevention and suppression of pests should be limited to outbreaks which threaten the recreational values of a river corridor or adjacent resources. Biological methods of pest suppression should be preferred.

Law Enforcement

G. Law enforcement actions shall be taken as needed for providing safety for forest visitors and for protection of wild and scenic river resource values.

m. B2-SCENIC VIEWSHEDS - LEVEL I & II VIEWSHEDS

Prescription:

Description: These management areas provide for management of the portions of the forest landscape that include Level I and II viewsheds for the value of these viewsheds as scenic resources as well as for other uses and resources.

This management area designation includes four scenic viewshed visual intensities that represent combinations of two distance zones and two visual quality objectives:

-	Foreground	Retention	F-RET
-	Middleground	Retention	MG-RET
-	Foreground	Partial Retention	FR-PRET
-	Middleground	Partial Retention	MG-PRET

Each of these management intensities represents a different level of scenic quality. The level of scenic quality to be provided governs the relative degrees of acceptable alteration of the natural landscape. The degree of landscape alteration associated with each management intensity is determined by the standards established for the intensity.

Goal: Provide Forest visitors with visually appealing scenery.

Management Activities: Landscapes within Level I and Level II viewsheds that are seen from popular travel routes and areas of recreation use shall be managed to maintain or enhance their appearance. Limited timber harvesting shall be planned within these scenic viewsheds but only to maintain the natural appearance of the forest within the viewshed or enhance the visual quality of the timber stands now and in the future, or to provide opportunities for opening views to unique landscape features. Such opportunities must be considered in management activities and projects within viewsheds. Salvage harvest operations may occur, but must meet visual quality objectives and leave dead and down or standing dead material in sufficient quantity to leave the forest within the viewshed in a natural appearing condition. Contrast with the natural landscapes created by management activities must be minimized using shape, scale, and distribution of resource treatments. Negative visual elements such as spur roads, gravel pits and utility corridors must be screened or rehabilitated.

STANDARDS by Functional Activity:

B2-SCENIC VIEWSHEDS (pg. 2 of 6)
(Includes four Visual Intensities) - F-RET, MG-RET, FR-PRET, MG-PRET

1. Dispersed Recreation
   Use Administration

   A. All visual intensity areas shall generally be open for off-road vehicle use, except where specifically closed or restricted to allow for meeting the visual quality objectives for each intensity. All areas and trails closed or restricted from off-road vehicle use shall be posted.

   Trails

   B. Trail use and maintenance level for trails must be consistent with the desired VQO.

2. Developed Recreation

   A. (Refer to Developed Recreation Site Management Area Standards.)

3. Wilderness (N/A)

4. Visual Resource Management Visual Quality Objectives

   A. In foreground and middleground retention areas visible from major travel routes, recreation use areas, and large water bodies, the visual quality objective shall be retention.

   B. In foreground and middleground partial retention areas visible from major travel routes, recreation use areas, and large water bodies, the visual quality objective shall be partial retention.

   C. In retention visual intensity areas:
      Alterations of the natural landscape must not be visually evident to observers from designated viewpoints.
      Results of activities must repeat only form, line, color and texture elements frequently found in the characteristic landscape.
      Changes in the qualities of size, amount, intensity, direction and pattern must not be evident to viewers.

D. In partial retention visual intensity areas:
Alterations of the natural landscape must remain visually subordinate.
Results of activities must repeat form, line, color and texture elements common to the characteristic landscape, but changes in the qualities of size, amount, intensity, direction and pattern must remain visually subordinate to the characteristic landscape.
Activities may also introduce changes in form, line, color, or texture that are not found, or found infrequently, in the landscape but they must remain subordinate to the visual strength of the characteristic landscape.

Enhancement (all intensities)

E. Unacceptable changes in form, line, color or texture as a result of management activities must be corrected within the first year after the activity occurs. Insect and disease activity or catastrophic occurrences may require short term deviation from visual objectives.

F. When possible, opportunities for viewing unique landscape features (e.g. peaks, rock forms, water forms, etc.) must be designed into development of projects in scenic viewsheds.

5. Cultural Resources Management

A. (Refer to Forest-wide Standards Cultural Resources Management.)

6. Wildlife

A. Structural wildlife habitat improvements must be located and designed to meet the visual quality objectives for the visual intensity areas in which the structure is built.

7. Fisheries

A. Structural and nonstructural fisheries habitat improvements must be located and designed to meet the visual quality objectives for the visual intensity area in which it occurs.

8. Range Management

   A. Livestock grazing should be permitted within all visual intensity areas if it occurs within an approved allotment.

9. Timber Management Silvicultural Systems

   A. Rotation age on the average growing site shall be:
      -250 years in FG and MG retention.
      -200 years in foreground partial retention.
      -125 years in middleground partial retention.

   Logging Systems/Sale Planning

   B. Temporary spur roads, landings, or harvest units must not dominate over line, form, color, or texture in any intensity area.

   C. Salvage harvest operations may occur, but must meet visual quality objectives and leave down material and standing dead in sufficient quantity to leave the forest within the viewshed in a natural appearing condition.

10. Soil, Water, Air and Riparian (all intensities)

   A. (Refer to Forest-wide Standards for Soil, Water, Air and Riparian Areas.)

11. Minerals Management

   A. (Refer to Forest-wide Standards for Minerals Management.)

   B. Surface mines, geothermal activities, rock quarries and stockpiles, etc. shall not be located in the foreground retention areas unless they can be screened from view, and they must not dominate over natural form, line, color and texture of the characteristic landscape.

   Site Specific Development

   C. All mineral developments shall require a complete development plan, including restoration and landscaping prior to development. Existing developments that do not meet the visual quality objective for the visual intensity in which they are located must be rehabilitated.

12. Geology (Refer to Forest-wide Geology Standards.)

13. Lands
Boundaries, Ownership Planning

A. Lands that fall within foreground retention or middleground retention must be placed in a land category to be retained, or acquired, if not Forest land. (Also refer to Forest-wide Standards for Land.)

Rights-of-Way

B. Utility corridors, towers and/or rights-of-way must be located outside of scenic viewsheds where possible. Clearings and structures required by rights-of-way must be designed and/or modified to blend with the natural landscape character in all visual intensity areas.

14. Transportation Systems/Facilities

A. Road location and design must be adjusted to the extent practicable, to preserve or enhance scenic quality and to meet visual quality objectives for the visual intensity area.

Road Operation

B. Vegetation adjacent to major travel routes or recreation sites will be managed in such a manner that will not create dead (brown) leaf conditions.

FA & O Construction

C. Buildings and other road-associated structures must be located and designed to blend with the natural landscape character.

D. Where possible, signing within scenic viewsheds must complement visual quality objectives.

15. Protection Functions
Initial Attack Suppression
Escaped Fire Suppression

A. Give preference to the suppression strategy and methods which result in the smallest practicable area burned, commensurate with cost-effectiveness, and have the least effect on the visual resource.

B. Post-fire rehabilitation shall attempt to restore areas to meet the visual quality level that existed before the fire.

Wood Residue Treatment

C. (Refer to Standards in Timber Emphasis Management Area.)

n. B3-ROADED RECREATION-REDUCED TIMBER HARVEST)

Description: These management areas provide for management of the forest for its value as a Dispersed Roaded Recreation resource and to provide settings for dispersed motorized recreation where modifications from the natural setting may be noticeable as well as to provide for other multiple uses and resources.

Goal: Provide a spectrum of year-round recreation opportunities and experiences in settings where roaded recreation activity opportunities are provided and managed. Other management activities that are compatible with the standards may occur including dispersed nonmotorized recreation activities and management for other resource objectives including timber harvest.

Management Activities: These management areas shall be managed to provide dispersed motorized recreation uses in settings that are characterized by an environment where limited modifications of the natural landscape may occur. However, along sensitive travel routes and within public use areas, modifications must appear subordinate to the surrounding area.

These management areas shall be managed to provide for motorized use and timber harvesting. Recreation facilities shall be provided to accommodate use and minimize impacts to natural resources.

Specific activities shall be oriented toward recreational uses such as off-road vehicle use, motorcycle use, mountain bicycling, boating, snowmobiling, all-terrain vehicle use, and auto camping.

Other dispersed recreation uses that are nonmotorized in nature may also occur within this management area, and shall be accommodated. Chargeable timber harvest is scheduled at extended rotation ages of about 125 years in middleground partial retention, and 250 years in foreground and middle-ground retention, in order to maintain a natural appearing or only slightly modified forest environment. Timber harvest operations must be designed to produce an "roaded natural" ROS setting for dispersed recreation. Salvage harvest operations may occur, but must also leave a roaded natural ROS setting.

STANDARDS by Functional Activity:

1. Recreation Facilities

   A. Structures and improvements shall be provided to protect resource values, for administrative purposes, and to accommodate recreational use.

   B. Recreation facilities and improvements in roaded dispersed recreation areas should be constructed of native-like materials, when practicable.

   Use Administration

   C. Dispersed campsites shall be located to take advantage of topographic and vegetative screening and placed outside of foreground view (i.e. 100 feet) from roads, lakes, streams, campsites, and trailsides.

   D. Recreational stock shall not be tied, grazed, or held overnight within the foreground areas of lakes, streams, campsites, and trailsides.

   E. Occupation of designated dispersed recreation sites for other than recreation purposes shall not be allowed. Industrial camping sites shall be designated by District Rangers.

   F. Roaded dispersed recreation areas will generally be open for off-road vehicle use except for Black Lake (south of Indian Springs) and Sherar Burn road (2613) and other areas otherwise closed or restricted to meet the VQO criteria. All areas and trails closed or restricted from off-road vehicle use shall be posted.

   Trails

   G. The trail system should be developed through the district trail development plans and be designed to disperse use, and realize the adopted VQO.

   H. Trail construction/reconstruction must be consistent with the adopted VQO. Trails should be maintained in the assigned maintenance class.

   I. Segments of older/abandoned/historic trails, that are identified in district trail development plans for incorporation into trail systems, should be incorporated when developing trail systems and/or new trails.

2. Developed Recreation

   A. (See Standards 1A. through 1J. above.)

3. Wilderness (N/A)

4. Visual Resource Management

   A. Management activities must result in visual conditions that range between meeting a visual quality objective (VQO) of partial rendition in foreground areas and meeting modification in middleground areas.

5. Cultural Resources

   A. (Refer to Forest-wide Standards for Cultural Resources.)

6. Wildlife

   A. Wildlife habitat improvement structures are permitted, but must be consistent in appearance with the adopted VQO.

7. Fisheries

   A. Fish habitat improvement structures in streams within roaded recreation areas are permitted, but must be consistent in appearance with the adopted VQO.

8. Range Management

   A. Livestock grazing may be permitted when compatible with dispersed motorized recreation, and when occurring within an approved allotment.

   B. Range improvements should be located away from areas of concentrated recreation use except for those improvements designed especially for recreation stock.

9. Timber Management

   A. Timber harvest shall be subordinate to providing the recreation experience.

B. Created openings along roads, trails, and streams, around lakes and adjacent to designated dispersed camping sites shall conform to adopted VQOs.

10. Soil, Water and Air

A. (Refer to Forest-wide Standards for Soil, Water, Air and Riparian Areas.)

11. Minerals

A. (Refer to Forest-wide Standards for Minerals Management.)

B. Where practicable, the development of common variety minerals may be permitted away from areas of concentrated use.

C. Exploration must be performed within a reasonable period of time with an attempt to avoid conflict with recreation activity.

D. Facilities and excavations developed during mineral exploration and/or development shall be designed to minimum standards, and shall be rehabilitated when no longer needed.

12. Geology

A. (Refer to Forest-wide Geology Standards.)

13. Lands-Special Uses

A. New recreation and nonrecreation special uses must meet objectives of maintaining the desired VQO. Whenever practicable, nonconforming special uses shall be terminated.

14. Transportation/Facilities

A. New roads and associated structures must be consistent with the desired VQO.

15. Protection Functions

Initial Attack Fire Suppression
Escaped Fire Suppression

A. Give preference to those suppression methods which result in the smallest practicable area burned, commensurate with cost-effectiveness, and have the least effect on roaded recreation values.

Wood Residue Treatment

B. (Refer to Standard 15C. in Timber Emphasis Management Area Standards.)

Pest Management

C. (Refer to Forest-wide Standards for Protection Functions.)

Law Enforcement

15D. Law enforcement actions shall be taken in dispersed recreation areas appropriate to provide safety for forest visitors, reduce conflicts between users, and protect resource values.

o. B4-PINE/OAK HABITAT (Special Wildlife)

Prescription:

Description: The Pine/Oak habitat on the Forest's east side provides critical habitat for four management indicator/hunted species (deer, elk, silver gray squirrel, and turkey). The Pine/Oak habitat provides the largest almost contiguous transition winter range for deer/elk on the forest. This same habitat, almost exclusively, provides nesting/feeding/breeding habitat for turkey and squirrel. The major characteristic of this habitat is an average of five or more old growth/mature (200-250 years) ponderosa pine per acre, along with the existing oak component.

Goal: Manage to maintain or enhance the Pine/Oak portion of the east side of the Forest, a major special wildlife habitat, for dependent wildlife species. To provide a sufficient quantity and quality of Pine/Oak habitat to meet the needs of resident populations of silver gray squirrel and wild turkey, and also provide sufficient transitory range to maintain the number of deer and elk recommended by the Oregon Department of Fish aand Wildlife. To concurrently provide for wood products and other resource uses.

Management Activities: Vegetation shall be managed to provide, over time, a minimum of five trees per acre of well-distributed mature or old growth ponderosa pine throughout the Pine/Oak habitat. The natural oak component of the pine/oak timber stands are to be maintained through timber management. Timber harvest thinnings are scheduled to achieve wildlife objectives. Salvage operations are permitted and designed to complement wildlife objectives.

Facilities, such as roads and trails, are designed, or closed, to minimize wildlife harassment and loss of effective habitat. Other resource activities are allowed provided they are consistent with wildlife objectives.

STANDARDS by Functional Activity:

B4-PINE OAK HABITAT (for Special Wildlife) (pg. 2 of 5)

1. Dispersed Recreation

   A. Nonconsumptive use of wildlife should be encouraged.

   Use Administration

   B. Enhancement of nonmotorized recreation opportunities which do not conflict with management indicator species maintenance/enhancement should be encouraged.

   C. Pine/Oak habitat areas shall be closed to off-road vehicle use. All areas and trails closed to off-road vehicle use shall be posted.

   Trails

   D. Existing trails should be used and maintained at the maintenance class consistent with District trail development plans.

2. Developed Recreation

   A. Developed recreation sites should not be constructed within special wildlife habitat areas unless compatible with managing for special wildlife needs.

3. Wilderness

   A. (N/A)

4. Visual Management

   A. Where Pine/Oak is located within a designated Level I scenic viewshed, the adopted visual quality objective (VQO) for the viewshed shall be met or exceeded.

   B. Where Pine/Oak is located within an inventoried Level I viewshed, the minimum VQOs must be partial retention in the foreground and modification in the middleground.

C. Where Pine/Oak is located within an inventoried Level II scenic viewshed, the minimum VQO must be modification.

5. Cultural Resources Management

A. (Refer to Forest-wide Standards for Cultural Resources Management.)

6. Wildlife

A. Direct habitat improvements should be emphasized.

B. Habitat quality/quantity and distribution should be improved continually to meet public demand to the extent economically feasible.

7. Fisheries

A. (Refer to Forest-wide Fisheries Standards.)

8. Range

A. Grazing should be permitted, within approved allotments, IF grazing maintains or enhances the quality of the habitat for management indicator species.

9. Timber Management

A. Average timber harvest unit size in Pine/Oak habitat shall be limited to twenty (20) acres or less.

B. Timber harvest unit size, dispersion, and shape shall reflect habitat needs of silver gray squirrel, turkey, and deer/elk.

C. Precommercial thinning shall occur ONLY when beneficial to featured management indicator species.

D. Maintain a minimum of five (5) old growth mature ponderosa pine per acre, along with maintaining the existing oak component. Pine and oak left in units should be clumped or evenly dispersed. No forested area over 15 acres shall be minus this habitat.

E. Commercial thinning should be used whenever possible to enhance the quantity, quality and dispersion of preferred nesting habitat for turkey.

F. Firewood cutting may be permitted in specified marked/designated areas provided all standing snags are protected.

10. Soil, Water, and Air

A. (Refer to Forest-wide Standards for Soil, Water, Air and Riparian Areas.)

11. Minerals Management

A. (Refer to Forest-wide Standards for Minerals Management.)

B. Common variety mineral resources may be developed if present management indicator species are not impacted, number of animals reduced, and if 100% of any adverse impacts are mitigated.

12. Geology

A. (Refer to Forest-wide Geology Standards.)

13. Lands: Special Uses

A. New rights-of-way permits shall be discouraged.

B. Study and project permits must recommend measures to insure minimal disturbance to wildlife and wildlife habitat.

C. Lands critical to the integrity of Pine/Oak management areas must be placed in Ownership Category II (Retain or Acquire).

14. Transportation/Facilities

A. Effective road density shall not exceed two (2) miles per square mile.

B. New roads and associated facilities shall be minimized in order to reduce wildlife harassment potential. Those roads that are necessary shall be developed at a minimum standard.

15. Protection Funtions
Fire Prevention

A. (Refer to Prevention Standards in the Forest-wide Standards for Protection Functions.)

Initial Attack Fire Suppression
Escaped Fire Suppression

B. Give preference to those suppression methods which result in the smallest practicable area burned, commensurate with cost-effectiveness, and have the least effect on the special wildlife habitat characteristics of the Pine/Oak area.

Wood Residue Treatment

C. (Refer to Wood Residue Standards in Forest-wide Timber Management Standards.)

p. B5-PILEATED WOODPECKER/PINE MARTEN HABITAT

Prescription:

Description: Nesting and feeding habitat of mature or overmature stands of timber containing a required number of snags, and large downed logs well-distributed throughout the Forest with the following characteristics:

(1) Nesting Habitat

(a) Woodpecker: 300 acres of contiguous (where possible) old growth and/or mature forest per pair within a contiguous 600-acre managed area. This 300 acres must have an average of two hard snags per acre greater than or equal to 12 inches in diameter at breast height (d.b.h.). At least 45 hard snags (of these 600 snags) must be greater than or equal to 30 inches in diameter at breast height.

(b) Pine Marten: 160 acres of contiguous (where possible) old growth and/or mature forest within a contiguous 320 acre managed area. This 160 acres must have an average of two hard snags per acre greater than or equal to 12 inches in diameter at breast height. At least 24 hard snags (of these 600 snags) must be greater than or equal to 20 inches in diameter at breast height.

(2) Distribution: These areas must be distributed an average of 5 miles apart (between centers of nesting habitat) (2 miles for pine marten habitat areas) laid out on a grid system (throughout the forest) on lands capable of growing timber suitable for woodpeckers and pine martens.

Goal: To manage mature or old growth forest habitat of sufficient quality, quantity, and distribution to sustain reproductive pairs of pileated woodpeckers and pine martens. in 600 acre unit-areas for pileated woodpeckers, and 320 acre unit-areas for pine martens.

Management Activities: Scheduled chargeable timber management activities within woodpecker/marten areas shall occur over extended harvest periods. Salvage operations are not permitted within the unit-acres since mimimum mature/old growth forest acreage, including snags and large down logs, must be maintained continuously. Other management programs, such as recreation, fisheries and range may be allowed provided activities are consistent with wildlife objectives and must attempt to maintain minimum acreages of mature, or old growth timber within these management areas at all times.

STANDARDS by Functional Acitivity:

1. Dispersed Recreation

-Facilities

A. Facilities and dispersed use that disturb nesting woodpeckers and pine martens shall not be permitted within the mature old growth ecosystem unless consistent with maintaining the ecosystem.

Use Administration

B. Woodpecker and marten areas and trails in these areas shall be closed to off-road vehicle use unless use is demonstrated compatible with managing for woodpeckers and martens. All areas and trails closed or restricted from off-road vehicle use shall be posted.

C. Nonconsumptive use of wildlife consistent with managing for woodpeckers and pine martens should be emphasized.

Trails

D. When compatible with managing for woodpecker and martens, existing trails should be maintained and use allowed consistent with District trail development plans.

2. Developed Recreation

   A. Facilities should not be permitted within mature/old growth ecosystem unless consistent with managing for woodpeckers and martens.

3. Wilderness

   A. Wilderness standards shall prevail in woodpecker/marten areas when they are located within wilderness.

4. Visual Resource Management

   A. Where area B5 is located within a designated Level I scenic viewshed, the adopted visual quality objective (VQO) for the viewshed shall be met or exceeded.

   B. Where area B5 is located within an inventoried Level I scenic viewshed, the minimum VQOs must be partial retention in the foreground and modification in the middleground.

   C. Where area B5 is located within an inventoried Level II viewshed, the minimum VQO must be modification.

5. Cultural Resources Management

   A. (Refer to Forest-wide Standards for Cultural Resources Management.)

6. Wildlife Management Habitat

   A. Woodpecker: Establish and maintain 300 acres of contiguous (where possible) mature and/or old-growth forest per pair within a contiguous 600-acre managed area.

      Pine Marten: Establish and maintain 160 acres of contiguous (where possible) mature and/or old-growth forest within a contiguous 320-acre managed area.

B. Pileated woodpecker areas shall be distributed an average of 5 miles apart: pine marten areas shall be distributed an average of 2 miles apart. There shall be laid out on a grid system (throughout the forest on lands suitable for woodpeckers and pine martens):
-one pair woodpeckers per 12,000 to 13,000 acres
-one pair martens per 14,000 to 15,000 acres.

7. Fisheries

A. Fisheries and riparian rehabilitation projects should be permitted.

8. Range Management

A. Livestock grazing shall not be permitted unless compatible with maintaining the old growth mature ecosystem and if occurring in an approved allotment.

9. Timber Management

A. Commercial timber land within the 600-acre managed portion of woodpecker areas, and within the 320-acre managed portion of pine marten areas, shall be maintained at no less than a 250 year rotation.

B. Salvage harvest shall not be permitted within contiguous 300-acre mature old growth pileated woodpecker habitat (160-acre area for marten habitat) removal and/or sale of down or danger trees shall be permitted only within cleared road rights-of-way.

C. Commercial thinning and salvage logging shall be permitted only within the nonmature habitat and only during the first half of the rotation. Removal or sale of down trees that are a hazard shall be permitted only within the cleared road rights-of-way.

D. Firewood cutting shall not be permitted within the 300 acre mature old growth pileated woodpecker habitat areas or within 160 acre mature/old growth marten habitat areas.

E. Genetic improvement activities should be limited to select trees within the mature/old growth habitat areas.

10. Soil, Water, and Air

    A. Rehabilitation and enhancement projects should be permitted.

11. Minerals Management

    A. (Refer to Forest-wide Standards for Minerals Management.)

    B. Common variety mineral material sources shall not be developed within the mature old growth habitat of woodpecker or marten areas.

12. Geology

    A. (Refer to Forest-wide Geology Standards.)

13. Lands

    A. New rights-of-way shall not be loated within mature old growth habitat of woodpecker or marten areas.

14. Transportation/Facilities

    A. Effective road density shall not exceed two (2) miles per square mile within mature old growth habitat of woodpecker or marten areas.

15. Protection Functions
    Initial Attack Fire Suppression
    Escape Fire Suppression

    A. Give preference to suppression methods which result in the smallest practicable area burned, commensurate with cost-effectiveness, and have the least effect on the pine marten habitat requirements. No tractors shall be permitted in the core area.

    Wood Residue Treatment

    B. (Refer to Standards for Timber Emphasis Management Areas.)

q. **B6-SPECIAL EMPHASIS WATERSHEDS**

Prescription:

Description: This designation applies to select watersheds where special management emphasizes unusually high combinations of riparian resource values and high sensitivity due to generally demanding site conditions. These include the Still Creek watershed (a tributary to the Sandy River) and the Miles Creeks drainage, which includes Fifteenmile Creek and its tributaries, as well as Mill creek and Dog River within The Dalles Municipal Watershed.

Goal: To maintain or improve watershed conditions within selected watersheds having special management needs in order to maintain or improve water quality for municipal uses and fish production. To maintain or improve the diversity of the riparian and aquatic habitats for the sustained, long term production of fisheries.

Management Activities: Each entire area is managed with sensitivity for the special needs of Forest watersheds. General watershed condition and the diversity of terrestrial and aquatic habitats are maintained or improved. Long-term watershed stability receives special emphasis throughout each area.

Most multiple use management activities, including scheduled chargeable timber harvest and salvage operations may take place in these areas. However, these activities must reflect consideration for watershed needs through their timing, intensity, extent or duration. Such considerations are especially important next to streams, lakes, reservoirs, wetlands, seeps and springs within the watersheds. These considerations also apply to a lesser degree to all upland areas within the Watershed. Where municipal water supplies are derived from Special Emphasis Watersheds, additional considerations may be applied to reflect needs to restrict public access and recreation use.

STANDARDS by Functional Acitivity:

1. Dispersed Recreation
   and
2. Developed Recreation

   A. Existing and/or new developed recreation sites or expansions to existing sites shall not substantially reduce flood storage and routing ability.

   B. The development of new or expansion of existing dispersed and developed recreation sites and facilities and trails (hiking and cross-country skiing) should be located to avoid or minimize conflicts with standards for managing special emphasis watersheds, and shall avoid special aquatic and terrestrial habitats (side channels, ponds, wetlands, etc.)

   C. Existing developed and dispersed recreation sites and facilities and trails (hiking and cross-country skiing) shall be developed in a manner consistent with riparian management objectives. Where developments are not consistent, modification or rehabilitation of the site or facility shall occur.

   D. Recreation management of lakes within special emphasis areas should complement Oregon Department of Fish & Wildlife (ODFW) fish management objectives and shall maintain aquatic habitat.

   E. New trails should be located outside of wetlands and other special riparian or aquatic habitats within special emphasis watersheds.

   F. Existing trails or trail segments within special emphasis watersheds should be modified, or relocated, to the maximum extent practical to conform with riparian management objectives.

   G. Facility and site construction must include contract provisions or mitigation measures designed to prevent or minimize adverse effects to riparian resources.

   H. Off-road vehicle use, other than over-snow vehicles, shall not be allowed within the following special emphasis watersheds:
      (a) Still Creek.
      (b) The Dalles Watershed.
      (c) In other watersheds off-road vehicle use may occur where determined consistent with riparian management objectives.

      Watersheds closed to off-road vehicle use shall be posted.

3. Visual Resource Management

   A. Where area B6 is located within a designated Level I Scenic Viewshed the adopted visual quality objective (VQO) for the viewshed shall be met or exceeded.

   B. Where area B6 is located within an inventoried Level I Scenic Viewshed the minimum VQOs must be partial retention in the foreground and modification in the middleground.

   C. Where area B6 is located within an inventoried Level II viewshed, the minimum VQO must be modification.

4. Cultural Resources Management

   A. Authorized excavation of cultural resource sites shall be conducted in a manner which minimizes impacts on riparian areas. Necessary rehabilitation shall be promptly performed.

5. Range Management

   A. Establish riparian objectives for each range allotment plan.

   B. In special emphasis watersheds, chemical control of noxious weeds should normally be done only by hand application methods.

   C. Rehabilitation and enhancement of riparian resources should be considered in the planning and scheduling of range improvement projects.

   D. Range improvement projects within special emphasis watersheds must include provisions and/or mitigating measures to prevent or minimize damage to riparian-dependent resources.

6. Timber Management

   A. Scheduling of timber harvest activities in special emphasis watersheds shall reflect considerations for accomplishment of riparian management objectives.

B. Hydrologic recovery shall be assessed as part of timber sale project scheduling.

C. Silvicultural prescriptions must provide direction for accomplishment of riparian management objectives for designated resources within special emphasis watersheds.

D. Maintain or increase the tree species mix in special emphasis riparian areas.

E. Site preparation prescriptions must provide direction regarding accomplishment of riparian objectives for designated special emphasis resources.

F. Biological and manual methods of vegetation management shall be generally favored in special emphasis riparian areas.

Sale Planning

G. Riparian resources must be delineated and evaluated as part of timber sale project planning within special emphasis riparian areas.

H. Special measures, required to meet riparian objectives, must normally be highlighted in timber sale prospectus.

Sale Administration

I. Firewood cutting of large-woody-debris in channels, wetlands, or lakes shall not be allowed unless specifically designated by a firewood cutting permit.

J. Activities involving fertilization or chemical treatment of vegetation, or pest or disease treatment in a municipal or domestic watershed must be coordinated with appropriate water users.

7. Soil, Water and Air

A. Site-specific riparian management objectives shall be developed for each special emphasis watershed.

B. Obtain a state water right for any diversion and/or reservoir (existing or planned) from surface sources, for consumptive or non-consumptive national forest purposes, not covered under the reservation principle.

C. Rehabilitation/enhancement projects for riparian dependent resources (RDR) will:
   (a) Have clearly stated riparian objectives.
   (b) Be cost effective.
   (c) Provide base level monitoring to quantitatively assess accomplishment of riparian management objectives.

8. Minerals Management

   A. (Refer to Forest-wide Standards for Minerals Management.)

9. Geology

   A. (Refer to Forest-wide Geology Standards.)

10. Lands-Special Uses

   A. Permits must include measures for correcting or minimizing damage that occurs as a result of permitted activities.

   B. Recurrent activities in special emphasis riparian areas (e.g. industrial camps) must be evaluated for their impact on riparian values. When adverse conditions are found, corrective action shall be taken promptly.

   C. When practical alternative locations are available, rights-of-way and easements should not be located in special emphasis watersheds.

   D. Minimum instream flow requirements insuring maintenance of water quality and fish habitat must be established for small hydroelectric development projects.

11. Transportation Systems/Facilities

   A. Where roads are located within special emphasis watersheds, road management objectives must address methods of meeting riparian objectives.

   B. Measures to minimize adverse effects of roads in, or adjacent to, riparian area must be included in road management objectives.

C. Road crossings at anadromous fish streams shall be designed to provide for adult and juvenile fish passage. Road crossings at non-anadromous, resident trout streams should provide for fish passage unless this is shown impractical in project environmental analysis.

D. Road crossings within special emphasis watersheds shall be designed with appropriate location/design features to meet specific riparian resource objectives.

E. Drainage systems for roads, in or adjacent to special emphasis resource areas, shall incorporate practical features to minimize or eliminate discharge or drainage directly into streams, lakes, wetlands, or spring/seeps.

F. Access control shall be utilized within The Dalles Watershed as necessary to meet water quality management objectives.

12. Protection Functions
Fire Prevention

A. (Refer to Preventions Standards in Forest-wide Standards for Protection Functions.)

Initial Attack Fire Suppression
Escaped Fire Suppression

B. Give preference to those suppression methods which result in the smallest practicable area burned, commensurate with cost-effectiveness, and have the least effect on the riparian and watershed characteristics of the area.

Wood Residue Treatment

C. Project environmental analysis and fuels (residue) treatment plans, involving special emphasis watersheds must include methods for accomplishment of riparian objectives.

D. (Refer to Wood Residue Standards in Timber Emphasis Management Area Standards.)

r. B7-GENERAL RIPARIAN AREAS

Prescription:

Description: General Riparian Areas include the riparian and aquatic ecosystems (true riparian vegetation and water), and upland transition zones of varying width. Areas include those associated with streams, lakes, reservoirs, wetlands, seeps and springs. Riparian areas are among the most productive, sensitive, diverse, and geographically limited ecosystems on National Forest Service lands. Riparian areas directly support a variety of important resources such as water, resident and anadromous fish habitat, cover and other habitat for various wildlife species. Certain plant and vegetative communities are also totally dependent on riparian zones, including several plants now on the sensitive list.

The average width of the riparian areas associated with Class I, II, and III streams, lakes/reservoirs, wetlands, and seeps/springs was modeled as 100 feet horizontal from the water's edge. For streams in this category; this results in a total width of 200 feet (100 ft. horizontal from each streambank). For Class IV streams a width of 50 feet was assumed from each bank (or 100 feet total). Actual location of management area boundaries will depend on local site conditions which are evaluated during project planning activities.

Goal: To maintain or improve riparian habitat conditions for the sustained, long-term production of fish, selected wildlife and plant species, and high quality water for the full spectrum of the Forest's riparian areas.

Management Activities: These areas are managed to maintain or improve the general diversity of their terrestial and aquatic habitats. Management emphasizes a relatively high density of vegetative species, multiple canopy layers, frequent small openings, standing and down woody material.

Multiple-use management activities, including scheduled chargeable timber harvest and salvage operations, shall take place in these areas. However, these operations must be modified to provide for maintenance of the riparian zone through their location, timing, intensity, extent, or duration. The mixture of tree species must be maintained or increased within the riparian zones. Walk-in recreation and other dispersed activities are generally compatible with management for General Riparian Areas.

B7-GENERAL RIPARIAN AREAS (pg. 2 of 7)

Actual "on-the-ground" delineation of General Riparian Management Areas shall be made during on-site area reconnaissance conducted in conjunction with project planning. The actual boundaries of any given area shall be located to meet specific Forest-wide riparian resource management objectives. (These objectives describe expected riparian conditions over entire drainages.) Once delineated, General Riparian Management Areas must be entered in the current monitoring data files.

STANDARDS by Functional Acitivity:

1. Dispersed Recreation
   and
2. Developed Recreation

   A. New developed recreation sites, or expansions to existing sites, within general riparian areas shall not substantially reduce flood storage and routing ability.

   B. The development of new, or expansion of existing, developed and/or dispersed recreation sites and facilities and trails (hiking and cross-country skiing) should be located to avoid or minimize conflicts with general riparian area objectives. Any such developments or expansions shall avoid special aquatic and terrestrial habitats (side channels, ponds, wetlands, etc. within general riparian areas).

   C. Existing developed and dispersed recreation sites, facilities, and trails (hiking and cross-country skiing) should be developed in a manner consistent with riparian management objectives. Where developments are not consistent, modification or rehabilitation of the site or facility shall occur.

   D. Management of lakes should complement Oregon Department of Fish & Wildlife (ODFW) fish management objectives and shall maintain aquatic habitat.

   E. New trails should be located outside of wetlands and other special riparian or aquatic habitats.

F. Facility and site construction within riparian areas must include contract provisions or mitigation measures designed to prevent or minimize adverse effects to riparian resources.

G. Whenever damage occurs to riparian resources in general riparian areas because of recreational activities, streamsides and other riparian areas the damage shall be promptly restored and, if possible, enhanced by revegetation and stabilization.

H. Off-road vehicle use in general riparian areas shall be managed to prevent damage to riparian resources and values.

3. Wilderness

A. Riparian management objectives must be established for each wilderness area.

4. Visual Resource Management

A. Where Area B7 is located within a designated Level I Scenic Viewshed, the visual quality objective (VQO) for the adopted viewshed shall be met or exceeded.

B. Where Area B7 is located within an inventoried Level I Viewshed, the minimum VQOs must be partial retention in the foreground and modification in the middleground.

C. Where Area B7 is located within an inventoried Level II Viewshed the minimum VQO must be modification.

5. Cultural Resources Management

A. (Refer to Forest-wide Standards for Cultural Resources Management.)

B. Authorized excavation of cultural resource sites shall be conducted in a manner which minimizes impact on general riparian areas. Necessary rehabilitation shall be promptly performed.

6. Wildlife
   and
7. Fisheries

   A. Wildlife and fisheries rehabilitation and enhancement projects should be permitted and encouraged within general riparian areas.

   B. Manage selected areas to maintain a healthy gene pool of wild or naturally self sustaining stocks of anadromous and resident trout species.

   C. For fish or wildlife projects, objectives must be developed. These will normally include identification of a target species or species group.

8. Range Management

   A. In general riparian areas, chemical control of noxious weeds should normally be done only by hand application methods.

   B. Range management and/or improvement projects within general riparian areas will/must include provisions for mitigating damage to riparian resources and shall be managed in such a manner as to prevent, or minimize damage to riparian resources.

9. Timber Management

   A. Timber harvest in general riparian areas shall be designed to accomplish riparian objectives.

   B. Maintain or increase the tree species mix in general riparian areas.

   C. Site preparation, release and timber stand improvement (T.S.I.) prescriptions must address objectives for general riparian management areas that lie within a project area.

   D. Activities involving fertilization or chemical treatment of vegetation, pest or disease treatment in general riparian areas must be coordinated with appropriate downstream water user permittees.

E. Chemical treatment of vegetation, pests or diseases should be accomplished only by hand application.

F. General riparian areas must be delineated and evaluated as part of timber sales project planning.

G. Salvage sales occurring within general riparian areas must address accomplishment of riparian management objectives.

H. Cutting of permit-firewood in stream channels shall not be allowed unless specifically designated in the firewood cutting permit.

Sale Administration

I. Stream protection and cleanout activities shall be sensitive to maintaining stream bank and stream channel stability.

10. Soil, Water and Air

A. (Refer to Forest-wide Standards for Soil, Water, Air, and Riparian Areas.)

B. Riparian dependent resource rehabilitation/enhancement projects must:
(a) Have clearly stated Riparian Management Objectives.
(b) Be cost-effective.
(c) Contain base level monitoring to qualitatively assess accomplishment of project work.

C. Rehabilitation projects following a catastrophic natural event must utilize a riparian dependent resource assessment to establish project objectives and design criteria.

11. Minerals

A. Removal of common variety minerals shall be managed to prevent damage to riparian resources within general riparian areas.

12. Geology

A. (Refer to Forest-wide Geology Standards.)

13. Lands-Special Uses

A. Permits must include measures for correcting or minimizing damage that occurs as a result of permitted activities.

B. Recurrent activities in general riparian areas (e.g. industrial camps) must be evaluated for their impact on riparian values. When adverse conditions are found, corrective action shall be promptly taken.

C. When practical alternatives are available, rights-of-way and easements shall not be located within general riparian areas.

D. Minimum instream flow requirements must be required for all small hydroelectric development projects.

E. FERC licenses must provide requirements and mitigating measures to minimize damage to riparian dependent resources.

F. Riparian values must be considered in proposals for land exchange.

14. Transportation Systems/Facilities

A. Roads and other facilities shall avoid general riparian areas wherever practicable. When roads must be in general riparian areas, road management objectives must address methods of meeting riparian objectives. (Refer also to Forest-wide Standards for Transportation Systems.)

B. Road crossings at anadromous fish streams shall be designed to provide for adult and juvenile passage. Crossings at nonanadromous, resident trout streams should provide for fish passage unless shown impractical in project environmental analysis.

C. Road crossing designs within general riparian management areas must consider riparian management area standards.

D. Drainage systems for roads, in or adjacent to general riparian areas, should incorporate practical features to minimize or eliminate discharge of drainage directly into streams, lakes, wetlands, springs or seeps.

15. Protection Functions

A. (Refer to Prevention Standards in Forest-wide Standards for Protection Functions.)

Initial Attack Fire Suppression
Escaped Fire Suppression

B. Give preference to those suppression methods which result in the smallest practicable area burned, commensurate with cost-effectiveness, and have the least effect on the riparian characteristics of the area.

Wood Residue Treatment

C. (Refer to Wood Residue Standards in Timber Emphasis Management Area Standards.)

s. B8-EARTH FLOWS

Prescription:

Description: An earth flow occurs when one or more blocks of coherent land fall on bowl shaped slip surfaces at the head of the landslide while the less coherent subjacent material flows at the toe of the landslide (refer to the Affected Environment in Chapter III of the DEIS for a detailed description of earth flows). These landslide features can be several acres to square miles in size. The earth flow moves slowly as a unit, however, individual parts can be active to varying degrees of intensity.

Goal: To provide for the management and utilization of forest resources, on large, slow moving earthflows and to provide special management practices to reduce the risk of reactivating or accelerating large, slow-moving landslide areas (called earth flows).

Management Activities: Earth flow areas require special management practices that will reduce the risk for the reactivation or acceleration of any or all parts of an earth flow area. Management emphasis must be to maintain the important hydrologic and physical balance. Scheduled chargeable timber harvest is programmed on earthflow areas; however, vegetation shall be managed to maintain at least 80 percent of each earth flow in a timber cover at least 30 years of age at all times. Openings created by timber harvesting, wildlife habitat improvement projects or other management activities are limited in size were they would impact these areas. Salvage and thinning operations are permitted providing standards for management area are met. All management activities must be designed and analyzed to meet the objectives of not reactivating, or accelerating, movement of an earth flow area.

STANDARDS by Functional Acitivity:

B8-Earth Flows (pg. 2 of 4)

1. Dispersed Recreation

   A. (Refer to Forest-wide Standards for Dispersed Recreation.)

2. Developed Recreation

   A. Development projects shall be designed so that earth flow movement shall not be reactivated, or accelerated.

3. Wilderness

   A. Where earth flows lie within wilderness, the standards for wilderness shall override standards for management of earth flows.

4. Visual Resource Management

   A. Where scenic viewsheds overlie earth flows, the most restrictive standards for a given activity shall apply.

5. Cultural Resources Management

   A. Forest-wide standards for cultural resources shall apply unless a planned activity would reactivate or accelerate movement of an earthflow.

6. Wildlife

   A. Wildlife improvement projects must be designed so that earth flow movement is not reactivated or accelerated.

   B. Created openings for wildlife habitat improvements must be no greater than 20 acres.

7. Fisheries

   A. Fisheries management activities must be designed so that earth flow movement is not reactivated or accelerated.

8. Range Management

   A. Created openings on earth flows for range improvement projects shall not be greater than 20 acres, and must be within an approved allotment.

9. Timber Management

   A. Created openings for silvicultural purposes on earth flows shall not exceed 20 acres in size.

   B. Maintain at least 80% of earth flow areas in timber 30 years of age or greater. If this condition does not exist, maintain existing stands. (As technology and harvest practices advance and monitoring information becomes available, alternate standards shall be formulated and implemented that best meet the goals and standards for Earth Flow Management Areas; e.g. management and utilization of forest resources, without accelerating or reactivating earth flow areas.

   C. Precommercial thinning and commercial thinning should be acceptable forest practices on earth flow areas as long as standard 9B above is met.

10. Soil, Water, and Air

   A. Management activities must be designed so that earth flow movements will not be reactivated or accelerated.

11. Minerals

   A. Mineral activity shall be regulated to insure that exploration and development activities do not reactivate or accelerate earth flow movement.

12. Geology

   A. (Refer to Forest-wide Geology Standards).

13. Lands: Special Uses

   A. Permits for special uses that reactivate or accelerate movement of earth flows shall not be approved.

14. Transportation/Facilities

   A. Roads must be designed and located in such a way that earth flow areas are not reactivated or accelerated.

15. Protection Functions
Fire Prevention

A. (Refer to Prevention Standards in Forest-wide Standards for Protection Functions.)

Initial Attack Fire Suppression
Escaped Fire Suppression

B. All wildfires on earth flow areas should receive an appropriate suppression response. This response and associated suppression strategies is the most cost-effective response considering land management goals and standards for earth flow areas.

Wood Residue Treatment

C. Management of dead, down, woody material loading levels shall occur to support interdisciplinary management activities.

D. Encourage wood residue removal.

t. B9-WILDLIFE/VISUAL AREAS

Prescription:

Description: These areas encompass lands that are valuable for wildlife, principally big-game animals, and also are important to forest visitors for their contribution to the scenic quality of the Forest.

Goal: Provide quality habitat for big-game and other wildlife species including those associated with or dependent upon quality riparian habitat, and provide a contribution to the scenic quality of the Forest. A secondary goal is to provide wood products, such as firewood and timber.

Management Activities: Management in these areas shall emphasize developing, improving, and maintaining quality forage and quality thermal cover for deer and elk. Vegetation management must attempt to maintain in each area a minimum amount of very young timber stands, or forage condition, at all times, also maintain quality thermal cover in proper size and distribution. Seasonal restrictions shall also be applied in these areas to public use and management activities such as timber harvest.

Management activities shall be required to meet certain visual quality standards where landscapes can be seen from popular travel routes. Scheduled chargeable timber harvest and salvage operations are permitted in the Management Area, but are constrained by wildlife and visual standards and are allowed only between July 1 and November 1 each year. Salvage operations shall leave dead and down material and standing dead in sufficient quantity to meet wildlife needs as stated in forest wide wildlife standards and to leave the forest within the management area in a natural appearing condition. New roads may be allowed, but these shall be closed after each project or management activity. Existing roads shall also have use restrictions, or shall be closed during certain periods. Other resource management activities may be allowed, provided they meet wildlife and visual objectives. Recreation use, such as nordic skiing, shall be encouraged and included in management activities. Some chargeable timber harvest shall occur in these Wildlife Visual Management Areas.

STANDARDS by Functional Acitivity:

B9-WILDLIFE/VISUAL AREAS (pg. 2 of 5)

1. Dispersed Recreation

   A. Wildlife/visual areas and trails in the areas shall be closed to off-road vehicle use. All areas and trails closed shall be posted.

   Trails

   B. (Refer to Standards for Scenic Viewshed Management Areas.)

2. Developed Recreation

   A. No additional developed recreation sites should be constructed in wildlife/visual areas.

3. Wilderness

   A. (N/A)

4. Visual Resource Management

   A. (Refer to Table FOUR-4 for VQOs pertaining to Management Area B9).

5. Cultural Resources Management

   (Refer to Forest-wide Standards for Cultural Resources Management.)

6. Wildlife

   A. Five to 10 percent of the area shall be maintained in timber stands zero to 10 years old other than natural forage areas such as meadows, that are adequately stocked with trees less than 6 feet tall, and with no forage area more than 600 feet from a cover component.

   B. Seeding with quality forage species, along with fertilization should be provided, if compatible with silvicultural objectives.

C. A minimum of 15 to 20 percent of the area shall be maintained in optimal thermal cover. The thermal cover areas must be at least 30 acres in size and have a minimum width of 600 feet at the narrowest point.

See definition in Forest-wide Winter Range Standards.

7. Fisheries

A. (Refer to Forest-wide Fisheries Standards.)

8. Range Management

A. Livestock grazing shall not be permitted within wildlife/visual areas.

9. Timber Management

A. Chargeable timber harvest and salvage operations shall be constrained by wildlife and visual standards for this management area and shall leave sufficient dead and down material and standing dead to mmet wildlife needs as stated in forest wide standards for wildlife and to leave the forest, within the management area, in a natural appearing condition.

Silvicultural Systems

B. Logging shall be restricted to the period between July 15 and November 1 each year.

C. Fuelwood cutting shall be limited to designated wood decks only.

10. Soil, Water, and Air

(Refer to Forest-wide Standards for Soil, Water, Air, and Riparian Areas.)

11. Minerals Management

A. (Refer to Forest-wide Standards for Minerals Management.)

B. Common variety mineral resources may be developed if present big game species habitat are not reduced nor migration affected.

12. Geology

    A. (Refer to Forest-wide Geology Standards.)

13. Land: Special Uses

    A. Lands that fall within wildlife/visual areas must be placed in a land category to be retained or acquired if not forest land. (Refer to Forest-wide Standards for Lands.)

    Rights-of-Way

    B. New rights-of-way permits shall be discouraged.

    C. Utility corridors, towers, and/or rights-of-way must be modified, and/or located outside of foreground retention areas. Clearings, required by rights-of-way, must be designed and/or modified to blend with the natural landscape character in all visual intensity areas.

    Permits

    D. Special use and study permits must have stipulations to provide for minimum disturbance to wildlife habitat and to big game.

14. Transportation/Facilities

    A. Effective road density shall not exceed 2 miles per square mile.

    B. New roads and associated facilities shall be minimized in order to reduce wildlife harassment potential. Those roads that are necessary shall be developed at a minimum standard.

    C. Road location and design must be adjusted, to the extent practicable, to preserve or enhance scenic quality, to meet visual quality objectives for the area, and to reduce wildlife harassment potential.

D. Vegetation adjacent to major travel routes shall be managed in such a manner that will not create dead (brown) leaf condition.

E. Buildings and other road-associated structures must be located and designed to blend with the natural landscape.

15. Protection Functions
Initial Attack Fire Suppression
Escape Fire Suppression

A. Give preference to those suppression methods which result in the smallest practicable area burned, commensurate with cost-effectiveness, and have the least effect on the special wildlife habitat needs for big game.

B. Post-fire rehabilitation shall attempt to restore areas to meet the visual quality level that existed before the fire.

Wood Residue Treatment

C. (Refer to Standards in Timber Emphasis Management area.)

D. Residue treatment shall be restricted to the period between July 15 and November 1.

u. C1-TIMBER EMPHASIS AREAS

Prescription:

Description: All suitable lands within this Management Area are available for producing commercial quantities of timber.

Goal: Chargeable timber harvest scheduled in this area as a dominant objective, while other outputs would be jointly produced. Management activities in area C1 are designed primarly to provide wood products needed to meet national demand, and to support local communities dependent on timber for employment, while achieving the objective of promoting a healthy, growing forest mosaic through timber harvest. These objectives are achieved while concurrently being sensitive to, and managing for, the other forest resource uses and values including transitory forage production and public recreation use. Timber levels are based on capability and suitability of the land in accordance with applicable laws and regulations.

Management Activities: Timber is managed to provide a mixture of timber stands in a variety of age classes. Timber stands are to be managed to promote vigorous, healthy trees while utilizing the productive potential of the designated sites. Management shall employ a specific set of practices, under standards for this Management Area, that include a full range of silvicultural systems and harvest methods and stand treatments including controlling stocking levels, maintaining satisfactory growth rates, protecting stands from insects and disease, controlling species composition, and employing several methods of regenerating stands. Timber stands shall be managed for retention of mimimun required amounts of standing dead (snags) and dead and down woody debris.

Extensive road systems must be developed in these management areas to facilitate management. New construction and reconstruction shall be planned at the lowest practicable mileage and standard required while providing for efficient transportation of goods, safety of users, and exhibiting the least impact upon resource values. Maintenance of these roads will be predicated upon these same variables.

Forage within these management areas shall be available for use by livestock and wildlife. Recreation activities allowed shall focus on use of existing or new transportation systems including trails, and on other dispersed recreation activities such as hunting, berry picking, use of ORVs, gathering of various forest products, and firewood cutting.

C1-TIMBER EMPHASIS AREAS (pg. 2 of 6)

The Management intensities that may be applied within Timber Emphasis Areas are described in Section 1.E.1 of Appendix B of the Draft Environmental Impact Statement (DEIS). This section addresses the different combinations, or intensities, of silvicultural practices which may be applied to working groups (Douglas-fir, true fir and pine/oak) of specified age. All of these intensities must be applied in a manner consistent with the standards for this Management Area. The intent of this plan relative to this Timber Emphasis Management Area is to allow any intensity to be chosen by the manager on a project-by-project basis provided that all of the following requirements are met.

(a) The outputs shown on Table FOUR-4 (page FP4-190 of this plan) are produced.

(b) The standards for this Management Area (i.e., Timber Emphasis Management Area C-1) are met.

(c) The most cost-effective intensity is chosen given (a) and (b) above.

STANDARDS by Functional Acitivity:

C1-TIMBER EMPHASIS AREAS (pg. 3 of 6)

1. Dispersed Recreation

   A. Dispersed recreation opportunities not in conflict with timber management activities shall be provided.

   B. Where appropriate, recreational activities compatible with intensive commodity management may be encouraged. Hiking and trail use, driving for pleasure, hunting, wildlife viewing, berry picking, cross-country skiing, the use of off-road vehicles, and cultural resource interpretation are examples of possible activities. Timber management activities shall protect existing dispersed recreation facilities and structures such as trails, trailheads, bridges, and sites.

2. Developed Recreation

   A. (N/A)

3. Wilderness

   A. (N/A)

4. Visual Management

   A. The visual quality objectives shown in Table FOUR-4 pertaining to Management Area C1.

5. Cultural Resource Management

   A. (Refer to Forest-wide Standards for Cultural Resources Management.)

6. Wildlife

   A. (Refer to Forest-wide Standards for Wildlife Management.)

   Winter Range/Summer Range

   B. (Refer to Forest-wide Standards for Winter Range.)

   C. Meadows should be maintained if possible.

7. Fisheries

A. (Refer to Forest-wide Fisheries Standards.)

8. Range Management

A. Grazing under allotment plans should be considered when not in conflict with seedling survival and growth.

B. Select plant species for range improvement work which do not significantly compete with desired forest tree species.

9. Timber Management

Silvicultural Systems

A. Full timber harvest should be scheduled in timber emphasis areas. (Also Refer to Forest-wide Standards for Timber Management for guidance.)

Logging Systems/Timber Sale Prep.

B. Appropriate logging systems must be used to harvest timber.

Cultural Treatments:

Site Preparation

C. Appropriate site preparation shall be done if cost effective and site preparation is necessary for reforestation. This should be accomplished in a manner that considers other resources and meets standards for soil protection. (Refer also to Forest-wide Standards for Soil Protection.)

Reforestation

D. The acceptable stocking level at 5 years is 250 to 415 well spaced crop trees per acre.

Pest Management

E. An aggressive timber salvage program shall be maintained to help restrict insect and disease losses.

F. If insect epidemics threaten in spite of good silvicultural practices, consider biological as well as chemical control.

G. An aggressive animal damage program shall be conducted if cost-effective and necessary to protect plantations.

Vegetation Control

H. Vegetation in plantations shall be managed for optimum return on investment. All plantation in timber production areas should be considered for need of release treatment, and those needing release scheduled and/or planned for treatment.

TSI: Precommercial Thinning

I. Depending on the selected timber management intensity, precommercial thinning should result in about 300 trees per acre and no more than 400 trees per acre in Douglas-fir species zones, and 400 trees per acre in true fir zone.

Fertilization

J. The use of fertilization shall not lower water quality in the fertilized area or downstream.

TSI: Commercial Thinning

K. Commercial thinning should maintain the desired stocking level control to achieve a vigorously growing stand throughout the rotation.

Genetic Improvement Program

L. A genetic improvement program shall be conducted where applicable and if feasible.

10. Soil, Water, and Air

A. (Refer to Forest-wide Standards for Soil, Water, Air and Riparian Areas.)

11. Minerals Management

A. (Refer to Forest-wide Standards for Minerals Management.)

12. Geology

A. (Refer to Forest-wide Geology Standards.)

13. Lands

A. (Refer to Forest-wide Standards for Lands and Special Uses.)

14. Transportation Systems/Facilities

A. (Refer to Forest-wide Standards for Transportation Systems/Facilities.)

15) Protection Functions

Fire Prevention

A. (Refer to Forest-wide Standards for Protection Functions-Fire Prevention.)

Initial Attack Fire Suppression
Escaped Fire Suppression

B. Give preference to the suppression strategy and methods which result in the smallest practicable area burned, commensurate with cost-effectiveness, and have the least effect on timber management.

Wood Residue Treatment

C. Management of dead, down woody material loading levels shall occur to support interdisciplinary management activities. Where available, leave 2-4 unmerchantable logs per acre 9+ inches in diameter, containing at least 40 cubic feet. (Refer also to Forest-wide Timber Standards.)

D. Encourage wood residue removal.

III. RESOURCE OUTPUTS

A. Introduction

The National Forest Management Act (NFMA) regulations define an objective as "a concise, time-specific statement of measurable planned results that respond to pre-established goals." Objectives reflect mixes of outputs or achievements which can be obtained at a given budget level within a stated time period.

Objectives in this Plan are the annual resource outputs that serve to accomplish the Forest's management goals stated in the beginning of this chapter and in the Management Area Prescriptions immediately preceding this discussion.

Goods and services to be provided by the Forest under this Plan are summarized in the following Table FOUR-12. This table also indicates the funding levels necessary to meet these planned outputs. If final budgets are different than those shown in Table FOUR-12, outputs will vary according to the final funding levels. Data presented are for average annual outputs for the first, second, and fifth decades.

See section IV. of this chapter for narrative descriptions of the resource conditions under which the outputs in Table FOUR-12 are developed.

Table FOUR-12 RESOURCE OBJECTIVES

Output or Activity	Unit of Measurement	Decade		
		FIRST	SECOND	FIFTH
Developed Recreation Use	M RVDs/yr. (See note)	1,643	1,889	2,873
Developed Site Construction Reconstruction	PAOT. (See note)	275	137	137
Non-Wilderness Dispersed Recreation Use				
Roaded	M RVDs/yr.	2,403	3,989	8,746
Unroaded	M RVDs/yr.	218	182	75
Wilderness Use	M RVDs/yr.	144	144	144
Unroaded Areas Unroaded characteristics retained	Areas	Olallie, 90% of Roaring River, Major part of Eagle, 1/2 of Larch, 1/2 Wind Creek		
Trail Construction and Reconstruction	Miles/yr.	28	14	14
Wild and Scenic Rivers Proposed				
Recreational Segments	Miles	<--------31.2------>		
Scenic Segments	Miles	<--------26.5------>		
Wild Segments	Miles	<--------28.5------>		
Expected Visual Condition	(See note)			
Preservation	Acres	<------187,200----->		
Retention	Acres	<------152,800----->		
Partial Retention	Acres	<------148,100----->		
Modification	Acres	<------125,700----->		
Maximum Modification	Acres	<------139,200----->		

Notes: M represents 1000 units. PAOT: Persons at one time. 1 campground unit is equal to 5 PAOTs. Expected Visual Condition of 753,000 acres of inventoried viewsheds. Does not include 347,700 acres of "seldom seen" land, which is expected to be either modification or maximum modification.

TABLE FOUR-12 RESOURCE OBJECTIVES (con't)

Output or Activity	Unit of Measurement	Decade		
		FIRST	SECOND	FIFTH
Management Indicator Species				
Spotted Owls	Pairs	85	85	85
Pileated Woodpeckers	Pairs	102	102	102
Pine Martens	Pairs	231	231	231
Silver Gray Squirrels	Numbers	3,400	9.200	14,000
Turkeys	Numbers	700	1,800	3,300
Deer	Numbers	9,200	27,200	13,600
Elk	Numbers	4,300	4,000	2,000
Salmonids (smolt)(See note)	Index	100	107	107
Legal Trout (See note)	Index	100	103	103
Anadromous Fish				
Commercial Harvest	M Pounds/yr.	497	506	507
Habitat Improvement	M Pounds/yr.	1.3	12.0	12.0
Wildlife Habitat Improvement	(8% increase in mitigation)			
Non Structural	Acres/yr.	430	2.052	88
Structural	Number of Structures	135	116	67
Wildlife and Fish Use	M WFUDs/yr. (See note)	289	315	444
Range				
Permitted Grazing	M AUMs/yr.	10.2	9.5	9.5
Timber				
Allowable Sale Quantity (ASQ), Green	MMBF/yr. MMCF/yr (See Note)	255/50.3	45.5 MMCF	43.8 MMCF
Other Timber Volume*	MMBF/yr. MMCF/yr.	92/18.2	Not Est.	Not Est.
Timber Sale Program Quantity	MMBF/yr MMCF/yr.	347/68.5	Not Est.	Not Est.
Fuelwood	MMCF/yr.	3.4	Not Est.	Not Est.

Notes: 100 equals the current potential habitat capability for 2,622,000 smolt or 1,511,700 legal trout. Entries less than 100 or more than 100 represent proportionate decreases or increases in habitat capability. WFUD equals "wildlife and fish user day;" AUM equals "animal unit months;" MMBF equals millian board feet; MMCF equals million cubic feet.

*Other Includes: Allowable Sale Quantity Salvage, Other Sawtimber, and Submerchantable Volume, (refer to Table II-23, DEIS).

TABLE FOUR-12 RESOURCE OBJECTIVES (con't)

Output or Activity	Unit of Measurement	Decade		
		FIRST	SECOND	FIFTH
Timber, continued				
Reforestation	M Acres/yr.	4.38	3.36	2.50
Timber Stand Improvement	M Acres/yr.	5.40	4.98	9.95
Long-Term Sust. Yield Cap.	MMCF/yr.	<--------43.8----		----->
Timber Growth in 2030	MMCF/yr.	<--------39.7----		----->
Water/Sediment				
Water Yield	M Acre Ft./yr.	<--------5,466---		----->
Sediment Delivery	Index	34.8	31.7	25.9
Roads Constructed and Reconstructed (See note)				
Arterial and Collector	Miles/yr.	9	8	6
Timber Purchaser	Miles/yr.	25	24	25
Roads Suitable for Use				
Passenger Car (See note)	Total Miles	1353	1420	1616
High Clearance Vehicles	Total Miles	1791	1942	2386

Note: Watershed Index - minus entries indicate a decline, other entries indicate improvement in watershed condition.

Note: Miles were generated on a road density, taking existing densities into account. Actual on-the-ground location of the projects will determine actual miles required.

TABLE FOUR-12 RESOURCE OBJECTIVES (con't)

Output or Activity	Unit of Measurement	Decade		
		FIRST	SECOND	FIFTH
Fire Management				
Effectiveness Index	$/M Acres Protected/yr.	3,846	3,791	3,805
Fuel Treatment	M/Acres/yr.	10.04	6.01	7.35
Air Quality	Suspended Particulates	6,266	3,547	3,624
Energy/Minerals				
Energy Minerals Produced	Billion BTUs	0	3,800	33,000
Non-energy Minerals Produced	MM$	.130	.125	.110
Geothermal Resources				
High Potential Available (See Note)	M/Acres	<--------4,300--------->		
Moderate Potential Available	M/Acres	<------123,300--------->		
Economics/Social				
Operational Costs	MM $/yr.	26.0	25.2	25.1
Capital Investment Costs	MM $/yr.	3.0	2.2	1.9
Total Budget	MM $/yr.	29.0	27.4	27.0
Returns to Government	MM $/yr.	32.0	32.0	32.0
Payments to Counties (See note)	MM $/yr.	8.0	8.0	8.0
Change in Jobs	Jobs	-521	Not Estimated	
Change in Income	MM $/yr.	-19.4	Not Estimated	
Human Resource Program	Person Years	276	278	280

Notes: High and moderate potential geothermal acres that have few or no access restrictions. Payments, by law 25 percent of all monies received by the National Forests shall be paid to counties within which the Forest is located. Payments are for the benefit of public roads and schools within these counties.

IV. SUMMARIES OF EXPECTED RESOURCE CONDITIONS

A. Vegetation - Timber

Timber harvest will operate on a suitable land base of 513,900 acres. In the first decade, 58,000 acres will be harvested. About half of the timber harvested in the first decade will be Douglas-fir from high quality sites. Very little timber will be harvested in the associated species group in this decade. Clearcutting will be the harvest method for two-thirds of the land designated for timber management. Harvest levels will be constant over time under this Plan.

Many new stands will be established by natural regeneration methods instead of planting. Thinning will become more common over time. About one-third of the suitable timber lands will be managed in consideration of the needs of other resources which will limit the timber yields obtainable. The average rotation length will be about 120 years. By the end of the fifth decade most managed timber stands will be less than 50 years old. All or parts of six unroaded areas will be available for regularly scheduled timber harvest.

Firewood for personal use is expected to come from logging residues in the early decades of this plan. In subsequent decades, a larger proportion of firewood will come from better utilization of thinning slash, better access, and areas set aside for firewood uses.

1. Determination of Land not Suitable for Timber Production

NFMA Regulations require the identification of lands not suited for timber production (36 CFR 219.14). The first stage is a determination of tentative suitability. The results of this first stage determination are displayed in Table FOUR-14.

The process used in this first stage is characterized by four screens through which National Forest lands must pass to identify those not suitable for timber production. These screens are described in Table FOUR-13 below.

Table FOUR-13 SUITABILITY SCREENS FOR DETERMINING SUITABLE TIMBER LAND BASE

SCREEN	Description
1	Non Forest land (36 CFR 219.3) (a) Not 10 percent occupied by Forest trees of commercial species. (b) Developed for non-Forest use.
2	The land has been withdrawn from timber production by: (a) Congress (b) Secretary of Agriculture (c) Chief of the Forest Service
3	Technology not available to ensure timber production without irreversible resource damage.
4	No reasonable assurance that lands can be adequately restocked within five years after final harvest.

2. Timber Resource Summary

Lands **tentatively suitable** for timber production, lands **suitable** for chargeable timber harvest and timber management practices by management area category are detailed in Tables FOUR-14, FOUR-15 and FOUR-16.

Table FOUR-17 that follows these tables summarizes the timber management program objectives under this Plan.

TABLE FOUR-14 LAND TENATIVELY SUITABLE FOR TIMBER PRODUCTION

NATIONAL FOREST LANDS	NOT SUITED FOR TIMBER PRODUCTION	TOTALS
I. TOTAL NATIONAL FOREST AREA		1,100,713
A. Other ownerships	41,274	
II. NET NATIONAL FOREST AREA		1,059,439
A. Water (lakes and streams)	14,441 Screen I 1/	
B. Non-Forest (not stocked with 10% tree cover)	189,880 Screen I	
C. Lands Developed for other than timber production purposes. (crops, improved pasture, residential, administrative areas, improved roads, power-line clearings)	22,877 Screen I 1/	
Subtotal	227,198 Screen I	
III. FORESTED LANDS		832,241
A. Withdrawn from timber production (219.14(a)(4))		
1. Wilderness	118,659 Screen II	
2. Research Natural Areas	1,194 Screen II	
3. Other such as (Wild & Scenic Areas, Experimental Forests--Listed by reason).	7,487 Screen II	
Subtotal	127,340 Screen II	
		704,901

1/ For detailed calculations, see Suitability Process Paper: Determination of Land not Suitable for Timber Production on the Mt. Hood National Forest.

TABLE FOUR-14 LAND TENATIVELY SUITABLE FOR TIMBER PRODUCTION (con't)

NATIONAL FOREST LANDS	NOT SUITED FOR TIMBER PRODUCTION		TOTALS
III. FORESTED LANDS (con't)			
B. Irreversible resource damage (219,14(a)(2))	28,220 Screen III		
C. Regeneration difficulty (219.14(a)(3))	28,177 Screen IV		
D. Lands growing less than 20 ft./ac./yr.			
1. Lands classified as unsuitable.	1,386		
2. Lands classified as suitable.		(0)	
3. Lands classified as Seperate Suitability Component		(0)	
E. Regeneration Difficulty Lands Classified as a Separate Suitability Component		(0)	
IV. TENTATIVELY SUITABLE FOREST LAND		(a) (0) (D2,D3+E)	(b) 647,118

Table FOUR-15 LANDS SUITABLE FOR CHARGEABLE TIMBER HARVEST

Tentatively Suitable Forest Land **-Minus-** **Category A Management Areas:** -These are the management areas that generally have no scheduled chargeable timber harvest. Some timber salvage operations may be permitted under certain conditions or restrictions. However, the total salvage volume is not expected to exceed 1 MMBF/year.	647,200 Acres -133,300 Acres
TOTAL	513,900 Acres

Table FOUR-16 MANAGEMENT AREA CATEGORIES WITH CHARGEABLE TIMBER HARVEST

Category B Management Suitable Areas: -These are the management areas that have scheduled chargeable timber harvest with restrictions that generally reduce potential timber harvests by as much as two thirds. Salvage timber operations may occur, but the long rotations in these management areas result in more unsalvaged mortality being left per acre than in Category C Managment Areas.	203,900 Acres
Category C Management Suitable Areas: -Chargeable timber harvest is scheduled in this management area as a dominant objective, to meet national demand and to support local communities dependent on timber for employment, while promoting a healthy growing forest mosaic through timber harvest. Approximately 20 percent of the gross mortality will be salvaged in Category C Management Areas.	310,000} Acres
TOTAL	513,900 Acres

Notes: Refer to definitions of Management Area Categories in the first part of this chapter.

There may be some additional unsuitable acres interspersed with the suitable acres in Category B and C Management Areas not determined as unsuitable during screening process. Final determination of suitability of a given acre will be done at the project level of planning.

Table FOUR-17 TIMBER RESOURCE SUMMARY

OUTPUT/ACTIVITY	Unit of Measure	Average Annual Quantity Produced Per Period		
		FIRST DECADE	SECOND DECADE	FIFTH DECADE
Land Suitable for Timber Production	Acres	513,900	513,900	513,900
Silvicultural Practice				
Regeneration Harvest	Acres			
Selective Cut		241	184	232
Shelterwood/ Seed Tree		1,343	1,050	1,334
Clearcut		4,193	3,352	4,234
TOTAL		5,777	4,592	5,800
Intermediate Harvest	Acres			
Commercial Thinning		8	18	446
Timber Stand Improvement	Acres			
Precommercial		4,900	3,845	6,317
Fertilization		0	750	3,001
Release		490	385	632
TOTAL		5,390	4,980	9,950
Reforestation	Acres			
Planting		4,384	3,361	2,495
Natural Regeneration		1,393	1,231	3,305
TOTAL		5,777	4,592	5,800
Allowable Sale Quantity (ASQ), Green				
	MMCF	50.3	45.5	43.8
	MMBF	255.0	<--Not Estimated-->	
Other Timber Volume	MMCF	18.2	<--Not Estimated-->	
	MMBF	92.0	<--Not Estimated-->	
Personal Use Fuelwood	MMCF	3.4	<--Not estimated-->	

B. Vegetation - Forage

Livestock grazing should continue at a moderate level on the east side of the forest. West side grazing is expected to decline to a low level. As the yield of timber harvest declines from current to long-term sustained yield capacity, available forage should also decline. Forage capacity will begin to be reduced in the second and third decades. This may lead to reducing the amount of livestock permitted to graze.

Emphasis on protecting riparian habitat is given high priority in allotment plans and management direction. Coordination with wildlife and other range resources users has also received high priority.

C. Soil

As shown in the sediment delivery index, soil losses should be about the same throughout the first five decades. After that, soil losses should decline in response to reduced levels of timber harvest. Emphasis of scheduled harvest on high-site Douglas-fir areas in the first decade may result in higher sediment production on west side subdrainages.

Tractor harvesting is projected to decline from the current levels, and in the second decade acreages of tractor harvesting is planned to decline sharply.

D. Fish and Water

Riparian allocations and management emphasis for riparian resources is at higher levels than base level, or, MMR requirements. Fifteen key riparian areas and two special emphasis watersheds, Miles Creeks drainage and Still Creek, are added to improve the Forest's overall distribution of riparian areas. The Miles Creeks drainage includes two municipal water supply sources, City of The Dalles and the town of Dufur, and more than 30 miles of critical anadromous fish habitat. Still Creek, which includes many areas of steep, sensitive terrain, is managed to provide high value anadromous fish habitat, big game winter range, and domestic water supplies. A total of 158,000 acres, representing 29 percent of the total potential area that could be managed for riparian-dependent resources, has riparian and watershed management direction. The Bull Run Watershed is managed under current direction.

The riparian resource management program strikes a basic balance between the management of fish habitat, water quality, and the requirements of other resource programs. The planned program to rehabilitate and enhance riparian resources is moderately aggressive and geared to produce modest but sustained improvement in aquatic habitat capability.

The mix between rehabilitation and enhancement work, on riparian and aquatic habitats, is of roughly equal proportions. Work in special emphasis watershed management areas has high priority. The Forest's backlog of aquatic rehabilitation projects should be eliminated by the second decade. Maintenance costs will probably increase steadily through the first decade.

The net result of the Plan's riparian allocations and management emphasis should be a general, Forest-wide maintenance of riparian resource conditions. Variations in these conditions, however, are likely to occur in some drainages, attributable to differences in land allocations, timber harvest scheduling, and physical characteristics. The risk of conditions dropping below the Forest-wide average is most likely in the Badger/Jordan, White River, Oak Grove and Upper Clackamas drainages. It is least likely in the two special emphasis watersheds and the Columbia, Bull Run, Salmon, and Lower Clackamas drainages. Riparian areas associated with intermittent streams, seeps, and springs in areas receiving intensive timber management should often have earlier successional stages of vegetation accompanied by larger and more frequent openings.

E. Wildlife

Habitat is managed through Minimum Management Requirements to maintain viable populations of species associated with mature and old growth forests. Additional habitat is available in allocations to Wilderness, and other areas excluded from timber management. Increased habitats provide additional assurance that many old growth related species will prevail. These habitats should also provide high natural levels of snags and down logs. When snags and down logs in timber management areas are combined with habitats resulting from Minimum Management Requirements, habitat is provided for cavity nesting species at more than 60 percent of their biological potential.

All methods stated above, along with the protection of special habitats such as meadows and riparian areas, should improve opportunities for wildlife viewing.

Over time, the amount of timber in forage-producing stages; that is, less than 20 years old, will decline. Populations of associated species, including deer and elk, may correspondingly decline. However, planned investments in forage improvement projects should lessen the impact. Road closures, whether seasonal or permanent, should improve habitat quality for big game and enhance the quality of the hunting experience for many people. In the Pine/Oak zone, management for wildlife habitat includes retaining mature pine and oak trees. There may be a decline in squirrel and turkey populations.

F. Research Natural Areas

The three existing Research Natural Areas, Bull Run, Bagby, and Mill Creek, are continued to be managed for scientific, research, and educational purposes. Three new RNAs are established. They are an addition to the Bull Run RNA; Big Bend, located in the Bull Run Watershed, and Gumjuwac-Tolo located in the northwest corner of the Badger Wilderness.

Table FOUR-18 RESEARCH NATURAL AREAS

Research Natural Areas	Acres
Mill Creek	800 Ac.
Bagby	540 Ac.
Bull Run	360 Ac.
Bull Run addition	400 Ac.
Big Bend Mountain	3,900 Ac.
Gumjuwac	3,300 Ac.
TOTAL ACRES IN RESEARCH NATURAL AREAS	9,300 Ac.

G. Recreation

The following table presents projected recreation uses of the Forest in three representative time periods.

Table FOUR-19 RECREATIONAL OPPORTUNITIES AND USES OF THE FOREST (Projected to the Fifth Decade)

Activity	Unit of Measure	Years		
		1987-1995	1996-2005	2026-2035
Developed Recreation Use	MRVDs	1643	1889	2873
Developed Site Reconstruction/ Construction	PAOT	275	137	137
Non-Wilderness Dispersed Recreation Use Roaded	MRVDs	2799		
Unroaded	MRVDs	284	3261	5180
Wilderness Recreation Use	MRVDs	144		
Trail Reconstruction/ Construction	Miles	28	14	14
Unharvested Acres (Gross) Remaining in Unroaded Areas	Acres	51,800	114,300	87,300

Notes: MRVD=1,000 recreation visitor days. PAOT=Stands for People at One Time. 5 PAOT=one campground unit.

1. Developed Recreation

Recreational use will continue to be heavy at popular sites like the Timothy Lake area, Lost Lake, Trillium Lake, and the Clackamas River drainage. The possibility of limited expansion of a few popular sites may partially relieve overcrowding and excessive deterioration of resources and facilities. Developed recreation on the Forest as a whole is expected to exceed practical site capacities by the third decade of the planning horizon.

Based on the Forest Developed Site Priority Study, sites which are little used or not economical to operate may be closed. Existing facilities are improved to a standard level, and a limited number of popular sites are to be expanded. No new developed sites are developed under this Plan. All facilities are operated at standard service level and are expected to be physically maintained over the planning horizon.

The Forest plans to complete the identified backlog of developed recreation rehabilitation needs in the first decade. Once the sites have been improved to full service management levels, approximately 71 percent of the recreation budget, exclusive of cultural and visual management programs, is planned to be used to operate the facilities and provide routine maintenance. In the second through fifth decades following the completion of backlog maintenance, developed reconstruction and construction investments are planned to be approximately half of those made in the first decade.

Developed campgrounds and other developed sites will continue to be offered for operation by concession. The potential to operate specific sites by concession shall be evaluated in terms of the costs and benefits to the government. Contracting some essential services associated with developed site management, such as garbage collection and sewage disposal, shall continue.

The volunteer and hosted human resources programs are an important component of the developed recreation program under this Plan. Continuation of the campground host program, federal assistance programs, and community service groups are necessary under this Plan to provide the expected quality of visitors' recreation experience.

Developed portions of Winter Recreation Management Areas are managed through approved master plans and special use permits. The proximity of the developed ski facilities to the Portland metropolitan area forecasts increased use of these sites. Proposed expansions that exceed the scope of the existing master plan or permit shall require a new or revised master plan coordinated by the proponent when this is possible. Any proposed expansion of winter sports facilities shall also require coordination with the Oregon State Highway Department to assess its effects on Highway 26.

Management of other types of developed recreation such as recreation residences, organization camps, resorts, and restaurants continues under special use permits. No new recreation residence tracts shall be developed, and any other proposed development should be evaluated on a case by case basis.

2. Dispersed Recreation

Most dispersed recreation on the Forest continues in a roaded setting. Approximately 79 percent of the total dispersed recreation use occurs in the roaded natural and roaded modified classes. An additional 10 percent of the dispersed use occurs in rural settings. Only one percent of recreation use under this Plan occurs in semi-primitive, nonmotorized settings. Total dispersed recreation uses associated with an unroaded setting, primitive and semi-primitive, nonmotorized classes is not expected to exceed 10 percent of the total recreation use on the Forest.

Identified backlog rehabilitation needs for facilities associated with dispersed areas are planned to be completed the first decade. Approximately 19 percent of the recreation budget, exclusive of cultural and visual resource programs, is planned for dispersed recreation, including trails, administration, operation, and management.

This Plan provides adequate opportunities for roaded, dispersed recreation including driving for pleasure, viewing scenery, gathering forest products, and short hikes. Through transportation planning and other management activities, opportunities to improve or establish appropriate scenic views may be developed. The Forest's proximity to major population centers suggests that activities associated with day-use will remain dominant. There are some small, minimally improved facilities presently exisiting on the Forest that are available for either day or overnight use.

Dispersed recreation opportunities in primitive and semi-primitive ROS classes are limited. Of the existing 10 unroaded areas, essentially all of Eagle and Olallie roadless areas, and the majority of Roaring River (51,800 acres) retain their unroaded characteristics, throughout the planning horizon.

The Mt. Hood vicinity has many opportunities for winter sports activities such as cross-country skiing and snowmobiling. Several dispersed areas provide groomed trails for track skiing. Trail marking and grooming should continue in cooperation with user groups under special use permits. Sno-parks are developed on a priority basis as funds allow.

Commercial outfitters, guides, and other commercial services are encouraged where demand and Forest management direction reveal opportunities. Each private proposal shall be evaluated on an individual basis and a special use permit prepared when it is justified.

The use of off-road vehicles is expected to increase. A system of trails and roads is available for ORV use. The Off-Road Vehicle Use Plan in Appendix D provides additional information which will also be presented on an ORV use-map. This map is planned to be reviewed annually.

3. Trails

The Forest has approximately 1,300 miles of recreation trails to complement other forms of dispersed recreation activities. The trail system includes 176 miles managed for cross-country skiing and snow machine use. Of the hiking trails, 268 miles are in Wilderness.

Use of the Forest trail system is projected to increase. Users will probably include both day and overnight visitors. A variety of opportunities for year-round hiking is available under this Plan, with use expected to increase in proportion to growth in the Portland metropolitan area. The Forest will continue to manage its trails for a range of opportunities according to difficulty, time of travel, and distance.

The backlog of needs for identified trail rehabilitation is planned to be eliminated in the first decade. Approximately 18 percent of the recreation budget is planned for operation of the trails and to provide routine maintenance, once the trails and trail structures have been improved to an acceptable level for full service level management. The planned miles of reconstruction and construction in the first decade focuses on both the repair of trail structures and tread work to correct the backlog of inadequate trails that currently exist. In the second decade, when the backlog of trail rehabilitation has been completed, work is planned to primarily involve tread work.

H. Wilderness

The Mt. Hood, Columbia, Salmon-Huckleberry, Bull-of-the-Woods, Badger, and the Forest's section of the Mt. Jefferson Wilderness is maintained and managed as Wilderness. Wilderness management emphasizes not only the preservation of the areas' primitive characteristics, but also the restoration of a more primitive character to popular sites and other areas which have lost some of their Wilderness values through overuse.

Although management should gradually restore overused Wilderness destinations to more primitive conditions, this Plan anticipates that recreational use of Wilderness will continue to concentrate in the most popular locations. The Forest plans to complete the identified backlog rehabilitation needs for Wilderness by the end of the first decade. Opportunities for a primitive recreation experience within Wilderness should continue to be available for the next several decades. Areas adjacent to the Columbia Wilderness are managed to preserve opportunities for solitude within the Wilderness.

I. Wild & Scenic Rivers

This Plan recommends that the Clackamas, Roaring, and Salmon Rivers be included in the Wild and Scenic River system. A study report for each river will be prepared for submission to the U.S. Congress. Pending congressional designation, the values contributing to a particular river's classification shall be protected. The following table shows the river segments that are recommended for wild and scenic designation.

Table FOUR-20 RIVER SEGMENTS RECOMMENDED FOR WILD & SCENIC RIVERS DESIGNATION

River Segment	Segment	Length (miles)	Recommended Classification
Clackamas	1	4.0	Scenic
Clackamas	2	3.5	Recreational
Clackamas	3	10.5	Scenic
Clackamas	4	9.0	Recreational
Clackamas	5	5.5	Scenic
Clackamas	6	14.5	Recreational
Roaring	1	13.5	Wild
Roaring	2	.2	Recreational
Salmon	1	.5	Recreational
Salmon	2	6.5	Scenic
Salmon	3	15.0	Wild
Salmon	4	3.5	Recreational

Recommendations shown here are based on studies of river eligibility and suitability. River segments are classified as wild, scenic, or recreational. Appendix E in the DEIS provides additional information.

J. Special Interest Areas

The following table identifies the Special Interest Areas designated under 36 CFR 294.1 for public recreation use, study, and enjoyment.

Table FOUR-21 SPECIAL INTEREST AREAS

	ACRES
Barlow Tollgate	.8 Ac.
Columbia Gorge	
Old Wagon Road	65 Ac.
Little Crater Lake	
Geologic Area	4.6 Ac.
Olallie Lake Scenic Area	10,800
Oneonta Gorge Botanical Area	11.5 Ac.
Face of the Columbia Gorge	23,000 Ac.
Barlow Road (Historic travel Route)	6,420 Ac.
Larch Mountain Recreation Area	40 Ac.
Roaring River Scenic Area (including Mitchell Flats)	23,852 Ac.
Lost Lake	3,700 Ac.
Bagby Hot Springs	363 Ac.
Sugar Pine Botanical Area	40 Ac.
Little Crater Lake expansion	300 Ac.
Squaw Meadows	734 Ac.
Parkdale Lava Beds Geologic Area	875 Ac.
Olallie Lake Scenic Area expansion	1,700 Ac.
TOTAL ACRES IN SPECIAL INTEREST	71,905.9 Ac. (54,950 Ac. adjusted for overlap*)

*i.e net acres substracting acres within MMR areas

These Special Interest Areas shall have management plans updated to bring them into conformance with the Special Interest Area standards previously stated. These management plans must be written to address the unique qualities of each of the sixteen areas listed above. These plans are to be the basis for formal recommendation as a Special Interest Area. Until each area has received final SIA designation, it shall be managed substantially in its natural condition.

Special features of each area shall be protected. Any proposed development impacting an area must be analyzed for the potential effects on the entire area, not just the immediate surroundings of the project.

These Special Interest Areas presently provide visitors to the Forest the following range of ROS opportunities:

Semi-primitive, Nonmotorized: 30 percent
Semi-primitive, Motorized: 5 percent
Roaded Natural: 65 percent

On October 15, 1986 Congress enacted HR5705 which established the Columbia River Gorge National Scenic Area. The Face of the Columbia Gorge Special Interest Area lies within the boundaries of this newly established National Scenic Area. Pending the development of the Scenic Area Management Plan by the Commission established by this legislation, the boundaries and/or management of the area within the Face of the Columbia Gorge Special Interest Area allocated in this Plan may change. Based on the Special Interest Area Management Direction and land allocation in this Plan, the following resource outputs could be produced from the Scenic Area:

	ACRES IN NSA CUT 1ST DECADE	MILLION BF CUT 1ST DECADE
	310	17

K. Visual Resources

Any landscape visible from designated travel routes or use areas is called a "Viewshed." The most heavily traveled routes, and the most popular use areas, are classified as Level 1 Viesheds. Secondary routes and use areas less heavily visited by recreationists are classified as Level 2 Viewsheds. The inventory of Viewsheds on the entire Forest includes:

- 46 Level 1 Viewsheds. This is 34 percent of the Forest.
- 38 Level 2 Viewsheds. This is 17 percent of the Forest.
- 17 percent of the Forest is in Wilderness and not classified as viewsheds.
- 32 percent of the Forest is seldom seen and has low scenic sensitivity.

The highest priority viewsheds on the Forest, including Columbia Gorge, Timberline Road, Highway 26 West, and Highway 35 are assigned to scenic Viewshed Management Areas under this Plan. These Management Areas have standards that shall maintain the areas' scenic benefits. However, not all inventoried viewsheds have been assigned management prescriptions that maintain high quality scenery. Some lower priority viewsheds are assigned to Management Areas with objectives other than preserving scenic benefits.

Table FOUR-22 is a four part table that lists all inventoried Viewsheds according to their category of planned future visual condition under this Plan. When reviewing this table, keep in mind that visual conditions change very gradually, evolving slowly over time, unless management activities or natural events such as wildfires hasten the process.

The following code is used in this table to show the present condition of each viewshed:

NA -Natural Appearing	MA -Moderately Altered
SA -Slightly Altered	HA -Heavily Altered

Table FOUR-22 INVENTORIED VIEWSHEDS
(By Category of current Appearance and by the year 2030 under the Forest Plan)

PART A -VIEWSHEDS TO REACH NATURAL APPEARING CATEGORY BY YEAR 2030

Level 1 Viewsheds	PRESENT CONDITION	Level 2 Viewsheds	PRESENT CONDITION
01 Columbia Gorge	NA	AG Cache Meadow	NA
02 Larch Mountain	SA		
04 Lost Lake	MA		
05 Bull Run Lake	HA		
07 Highway 26 West	SA		
11 Timberline	NA		
12 Mt. Hood Meadows	SA		
20 Trillium Lake	MA		
26 Parkdale Lava Beds	SA		
30 Squaw Lakes	NA		
36 Lower Clackamas River	MA		
38 Hot Springs Fork	HA		
45 Olallie Lake Area	NA		
47 So. Fork Roaring River	NA		
48 Roaring River	NA		
53 Bagby Hot Springs	SA		

PART B -VIEWSHEDS TO REACH SLIGHTLY ALTERED CONDITION BY YEAR 2030

Level 1 Viewsheds	Present Condition	Level 2 Viewsheds	Present Condition
06 Upper Hood River	SA	AA Thunder Mountain	HA
10 Highway 35	SA	AF Mt. Mitchell	MA
14 Dufur Mill Road	SA	AS Lower White River	MA
17 Badger Lake Road	NA	BB Road 27	SA
18 Tom, Dick & Harry	NA	BG Eightmile Point	NA
19 Still Creek	NA	BJ Palmer Peak	NA
21 Highway 26 East	SA		
22 Salmon River Road	SA		
32 Highway 216	NA		
33 Timothy Lake	MA		
34 Rock Creek Reservoir	MA		
35 Barlow Road	NA		
37 Upper Clackamas River	HA		
51 Oak Grove Fork	MA		

Table FOUR-22 INVENTORIED VIEWSHEDS (con't)
(By Category of current Appearance and by the year 2030 under the Forest Plan)

PART C -VIEWSHEDS TO REACH MODERATELY ALTERED CONDITION BY YEAR 2030

Level 1 Viewsheds	Present Condition	Level 2 Viewsheds	Present Condition
09 Tilly Jane	SA	AB Collawash River	HA
13 Barlow Creek	SA	AD Kink Creek	HA
24 Upper Salmon River	SA	AE Fish Creek	HA
40 Dickey Creek	HA	AH Shellrock Lake	HA
41 Elk Lake	HA	AI Cottonwood Meadows	HA
42 Rhododendron Ridge (bkgrd)	HA	AJ Shellrock Creek	HA
43 Bull-of-Woods (bkgrd)	HA	AO Crane Creek	HA
46 Olallie Creek	HA	AR Bonney Crossing	HA
		AU White River Road	MA
		AY Wolf Camp Butte	SA
		AZ Eagle Creek (Zigzag)	NA
		BA Mill Creek Buttes	NA
		BC North Fork Mill Creek	SA
		BH Black Lake	HA
		BI Diver's Creek	HA
		BL Indian Creek	HA

PART D -VIEWSHEDS TO REACH HEAVILY ALTERED CONDITION BY YEAR 2030

Level 1 Viewsheds	Present Condition	Level 2 Viewsheds	Present Condition
08 Lolo Pass	HA	AC Mt. Lowe (bkgr)	HA
25 Hood River (background)	HA	AK No. Fork Clackamas River	SA
27 Alder Creek (background)	NA	AL Boyer Creek	SA
31 Skyline Road, North	SA	AM Frying Pan	MA
39 Upper Pansy Creek	HA	AN Mud Creek	HA
44 Berry Creek (background)	HA	AP Road 48	SA
49 Whetstone Creek	HA	AQ Little Badger Creek	NA
50 Rhododendron Meadow	HA	AT Skyline Road, South	MA
		AV Clear Lake	HA
		AW Linney Creek	HA
		AX Draw Creek	SA
		BD Gordon Creek	MA
		BE Jordan Creek	NA
		BF Upper Dog River	NA
		BK West Fk. Hood River	HA

L. Cultural Resources

The primary goal of the Cultural Resource program is to preserve significant cultural resources for scientific study, public use, and enjoyment. By the end of the first decade under this Plan, a cultural resource preservation plan is planned to be written to provide a framework to guide the inventory, evaluation, protection, and enhancement of the Forest's cultural resources. Forest-wide standards, historic preservation laws, regulations, and established policies shall direct future management decisions regarding cultural resources.

In compliance with the Forest's Inventory Plan, cultural resource surveys shall precede all land exchanges and ground-disturbing projects. Approximately 75 percent of the Forest will be inventoried for cultural resources by the end of the first decade. Areas such as Wilderness, Special Interest Areas, Research Natural Areas, and unroaded areas generally will not be extensively inventoried until the beginning of the second decade. The entire Forest should be inventoried after five decades. The inventory effort and all cultural resource discoveries during these inventories must be documented. This information should be used to refine the cultural resource inventory strategy used on the Forest. Roughly 30 percent of the Forest may require additional investigations due to the dense vegetation cover in the Cascades. Heavy emphasis will be devoted to post-project monitoring of surveyed areas to test the validity of the inventory strategy and ensure resource protection.

Cultural resources located during the surveys that may be affected by project activities must be evaluated to determine if they are eligible for acceptance into the National Register of Historic Places. Evaluations generated by project planning will usually concentrate on single resources, but it is impossible to view a property in isolation when assessing its significance. Therefore, efforts must be made to examine the local or regional context of the property, and to determine how it may be related to other properties within the same historic context and/or specified geographic areas.

Through the first decade, evaluations of cultural resources not associated with specific projects will occur only incidentally. When these evaluations are conducted, they should emphasize evaluations of thematic groups or historical districts. Significant cultural resources shall be nominated to the National Register, but such nominations are likely to occur only incidentally through the first decade and until the forest has been substantially inventoried. Register nominations should emphasize thematic groups or historic districts.

Many evaluations originating in the first decade will be generated by recreation projects as facilities are brought up to full-service standards. From the end of the first decade onward, evaluations should be generated at an increasing rate. By the end of the first decade, a major part of the cultural resource management workload may be directed toward evaluating properties which could be affected by proposed timber harvesting activities. The anticipated increase in evaluations will be a function of the declining land base in which to relocate timber activities when these conflict with the preservation of cultural resources.

When project avoidance of a property is not practicable, a plan to mitigate the potential for damage must be written in consultation with the Oregon State Historic Preservation Officer and the Advisory Council on Historic Preservation. The actions outlined in each particular mitigation plan must be completed and documented before project activities begin. Cultural resources shall be monitored during and after project activities to assure that protective measures accomplished their purpose. All properties within 200 feet of project activities shall also be monitored to make sure they are not adversely affected.

Management plans must be written for each National Register property, Register-eligible property, or historic property under special use permit. These plans are to state how the property must be used, outline the operation, maintenance, and betterment of the property, and identify the associated funding required. Permits for occupancy and/or use of federally owned structures must be reviewed to insure they contain stipulations or clauses sufficient to protect the resources involved. Cultural resource compliance shall be completed before permits are issued which authorize ground-disturbing activities. As funding becomes available, cultural resources shall be protected and rehabilitated from nonproject related damage caused by people and/or nature. If damage occurs, cultural resources shall be rehabilitated.

Interpretive programs for a number of suitable cultural resources will be developed to increase public understanding and enjoyment. These include Timberline Lodge, Multnomah Falls Lodge, Barlow Road and its associated sites, Clackamas Lake Ranger Station, Cloud Cap Inn, and the historic Columbia River Highway. The way in which these and other properties are interpreted may depend on funding available.

M. Transportation System

Forest Development Roads are constructed, operated, and maintained for the administration and protection of the Forest's lands. They are not public roads in the same class as state highways, county roads, and city streets. Instead of meeting the automotive needs of the general public, the Forest's roads are designed to standards appropriate for their intended uses. Other factors in their design are safety, cost of transportation, and the roads' impact on land and other resources.

In compliance with the Forest Road Management Plan, documented Resource Management Objectives (RMOs for short) shall be written for all of the Forest's roads. RMOs must be developed through an interdisciplinary process to meet standards specified in management prescriptions for the areas in which each particular road is located. RMOs will include design criteria, traffic requirements, traffic service level, maintenance level, possible future road closure, and any other pertinent land management objectives.

TABLE FOUR-12 includes activities (inputs) to specify the future development of the forest's transportation system including miles to be constructed and reconstructed. Mileage data were generated based on a desired road density after taking existing densities into account. This analysis was conducted on a drainage by drainage basis and does not reflect the actual location of future projects nor the roading needs of those projects. Actual on-the-ground location of each project will determine the actual miles required.

This Plan also calls for the construction, during the first decade, of approximately five miles of new roads annually in previously unroaded areas. Unroaded areas expected to be entered for roading in the first decade include Larch, Twin Lakes, part of Roaring River, Bull-of-the-Woods, Salmon-Huckleberry, Mt. Hood Additions, and Badger Creek.

1. Forest Transportation Plan

The development, operation, and maintenance factors of all Forest Development Roads are included in the Forest Transportation Plan. This Transporation Plan shall be revised to bring it into compliance with this Forest Plan as soon as practicable. The Forest Transportation Plan includes a variety of documents including:

(a) Transportation Information System (T.I.S.): an inventory system to store data relative to different facilities comprising the Forest development transportation system.

(b) Development Plan: this includes project plans, area transportation plans, and timber transport haul route analysis plans.

(c) Forest Road Management Plan: this includes documented Road Management Objectives, Area Traffic Management Plans for road closures and road regulation signing and gates, Traffic Surveillance Plan, Forest Road Rules Policy Document, Flood Road Maintenance Plan (FERM), Traffic Accident Location and Identification Program, Maintenance Plan, and all interagency transportation agreements, such as Bull Run Watershed.

(d) 1:24000 Transportation Map: this shows all Forest Development Roads on an overlay to the 1:24000 Primary Base Series Map.

2. Ten-Year Transportation System Capital Investment Program

The Transportation System Capital Investment Program for the Forest Plan (first decade) shall include:

(a) Construction of new arterial/collector routes into unroaded areas.

(b) Replacement of bridges identified on the existing inventory as in need of replacement.

(c) Reconstruction of existing arterial/collector roads that do not meet the standards determined and documented in the Road Management Objectives.

3. Transportation System Coordination Requirements

The Regional Forester's Memorandum of Understanding with the State of Oregon must be consulted when State highways enter National Forest land. This memorandum contains standards and guidelines for coordinating the location, construction, maintenance, and signing of the Forest Highway Program. It also includes policies on access and control, third-party occupancy, landscape management, rest areas, and right-of-way grants for existing highways. This agreement shall be revised to bring it into compliance with this Forest Plan as soon as practicable.

The Forest will actively negotiate and encourage the transfer of a Forest Development Road to an appropriate public road agency, usually a county, when most of the use of such road consists of:

(a) Public service or other non-Forest generated traffic from commercial or residential development, or

(b) The road is used for mail, school transit, or other government purposes.

The Forest will continue to cooperate with county governments and share in the cost of construction, reconstruction, improvement, and maintenance of certain Forest and county roads. Existing agreements that provide standards and guidelines for consultation, maintenance, and rights-of-way shall be revised to bring them into compliance with this Forest Plan as soon as practicable.

When possible or feasible, the Forest shall avoid duplicating existing or planned road systems by negotiating agreements with interested parties to share in the costs of a single system to serve all tributary ownerships.

All future agreements and supplements and all existing agreements must be reviewed to assure compliance with the prescriptions in this Management Plan.

N. Geology

Geological hazards should continue to be a factor in the management of the Forest. Surface soil movement and land stability are the primary concerns. Landslides and surface soil erosion will adversely impact other resources like soil productivity, water quality, timber productivity, public safety, and capital expenditures.

The impacts of soil erosion are diminishing over time as indicated by the Sediment Delivery Index, displayed in Table FOUR-12. Road building and timber harvesting shall be restricted on active landslide areas where these types of activities could cause irreversible resource damage. Earthflow areas must be managed with a reduced level of chargeable timber harvest. Specific management standards are identified within the Earthflow Management Area Prescription to make sure that unstable slopes are not reactivated. Forest-wide standards for managing unstable areas shall also be implemented.

Exact relationships between management-authorized activities, water and the geologic composition, and structure of earthflows, as these impact deeper earthflow movements and associated shallower failures, are not fully understood. Monitoring shall be used to collect baseline data for these and other landforms to test existing models of earthflow and geologic landslide hazards. The tested model will then be used to determine the impacts of management activities and to help identify the best management practices on earthflows as well as other potentially unstable landforms.

O. Minerals

Development will be encouraged for both locatable and leasable minerals although some management areas and their associated prescriptions require withdrawal from mineral entry. These include Wilderness and "wild" sections of Wild & Scenic Rivers. Management areas which prescribe restrictive access include scenic segments of Wild & Scenic Rivers, Scenic Viewsheds, Developed Recreation Sites, Special Interest Areas, the Bull Run Watershed, Key-site Riparian Areas, and Northern Spotted Owl Habitat. The potential and actual effects of mineral-associated activities on sensitive resources must be evaluated. Highly restrictive acres and management areas which require withdrawal from mineral development must be closely monitored. As a result of evaluations and monitoring, mineral standards within particular management areas which restrict mineral exploration and development may be modified.

1. Locatable Minerals

Mineral activities are expected to be low key because high potential, locatable minerals remain unknown on the Forest. Mineral exploration and development activities, if any, proabably will be concentrated in the Oak Grove Fork Mining district. Operations will be likely to continue as in the past, few in number and small in size. Of the 1,000 acres in this moderate-potential mining district, 31 percent are managed with highly restrictive access since the area is within a Scenic Viewshed Management Area.

A small number of low activity claims have been filed for low mineral potential areas. Lands in these areas are either withdrawn at present or recommended for withdrawal. Where valid existing rights are confirmed for claims predating the withdrawal date, mineral-associated activities could occur and disturb the soil surface involved. The mineral-associated activities require measures which provide compatibility with the management prescription of the area.

2. Leasable Minerals

Geothermal resources are a leasable mineral with the highest potential for development. Continued exploration is anticipated. Exploration may include drilling or geophysical surveys. Development may include a modular power plant and power lines. Geothermal resources with high potential total 17,900 acres. Geothermal resources with moderate potential total 262,600 acres.

Approximately 39 percent of the high mineral potential acreage is in the Mt. Hood Wilderness, which has been withdrawn from mineral entry. No leases predate the wilderness withdrawal. Another 34 percent of the high potential acres have highly restrictive access as a result of other management priorities. Of the moderate potential acreage, 7 percent are recommended for withdrawal from access, and 4 percent have highly restricted access.

There is no known geologic structure for oil or gas on the Forest. Oil and gas activities will probably be linked to leasing actions and geophysical surveys. Drilling for these minerals is unlikely.

3. Common Variety Minerals

Rock and gravel used in the construction of the Forest's roads should be the major common variety mineral produced on the Forest. Rock in the east side drainages should be sufficient to meet long-term needs. Proposed transportation analyses show that rock shortages may occur in west side drainages including Oak Grove Fork, Lower Clackamas, and Collawash in decade 3.

Some of the rock and gravel shortages may be offset by using lower quality material. Rock from lower quality sources or rock resource material supplied from quarries outside the standard seven mile hauling distance from off-Forest sources should have minimal impact on long-term Forest rock supply. However, these materials would probably increase the cost of road maintenance and construction considerably.

New quarries shall not be permitted along wild and scenic segments of Wild, Scenic And Recreation River Management Areas and are not permitted in Northern Spotted Owl Habitat, or in Wilderness. Management area standards also place restrictions on rock quarry development in Scenic Viewsheds and in Key Site Riparian Management Areas. Quarry operations are prohibited in Northern Spotted Owl Habitat Management Areas during nesting seasons. Similar season restrictions also apply to quarries in Pine/Oak habitat and in winter range for deer and elk.

P. Fire Management and Air Quality

This Plan provides for an appropriate suppression response on all wildfires. If an unplanned natural fire occurs in Wilderness, it should be treated as a prescribed fire unless or until declared a wildfire. Fires that occur in Wilderness from human causes will require an appropriate suppression response. Prescribed fire should be used for the reduction of management activity fuels, such as logging and road building slash, and as a management tool for maintenance and improvement of other resources.

Fuels treatment is an important component to successful fire management. Fuel loading levels should be maintained at a desirable level to meet protection objectives and land management objectives. Fuel treatment should be accomplished in the most cost efficient manner. The majority of fuel treatment will occur following timber management activities. Treatment of natural fuelbed will also need to occur and will occur at a rate of 600 acres per year. The location of specific treatment projects should be the result of site specific environmental assessments.

The need to use prescribed fire for vegetation management, hazard reduction, and natural ecosystem perpetuation will continue. Therefore the use of prescribed fire to meet management objectives is a fundamental component of management prescriptions. Prescribed fire should be used in meeting land management objectives in areas where ecological studies show that fire has been significant in ecosystem development. Prescribed fire should also be utilized when analysis through an interdisciplinary team shows that it is cost effective and is the preferred method to meet land management objectives.

During the first decade, the emission of suspended particulates should be reduced from current levels (1976-1982) by 43 percent through improved utilization of forest residues and further improved burning technologies. The reduction from current levels will be even greater in subsequent decades. These techniques will reduce the number of acres requiring treatment.

All prescribed burning must be implemented in compliance with the State of Oregon Smoke Management Plan, State of Oregon Implementation Plan (SIP) for the requirements of the Clean Air Act, and the USDA-Forest Service Pacific Northwest Regional Guide.

CHAPTER FIVE

CHAPTER FIVE

IMPLEMENTATION & EVALUATION OF THE FOREST LAND AND RESOURCE MANAGEMENT PLAN

I. INTRODUCTION

Implementation of the Plan requires periodic evaluation on a sample basis of management programs to determine if they comply with the objectives of the Plan. This is called Monitoring and Evaluation. To accomplish this task it will be necessary to monitor a variety of outputs and environmental effects to determine if they are within tolerances established by a Monitoring Plan.

The Monitoring Plan is an integral part of the management direction presented in this document. If the tolerances in the Monitoring Plan are exceeded, one of the actions in the decision flow diagram will be triggered. The actions taken as a result may require an alteration of the program causing the problem; or the Plan could be revised or amended.

The following sections describe the relationship between project planning and the Plan, the goals and requirements for monitoring and evaluation, and the process by which the Plan, or programs, may be amended or revised.

II. IMPLEMENTATION DIRECTION

A. Project Scheduling

Projects, including capital investments, are scheduled in response to the planned outputs of goods and services displayed in Chapter Two of this Plan, and respond to annual budgets actually allocated. The schedules of proposed projects are contained in the Appendices of this document. Appendix B comprises a listing of possible projects to meet the first three years of the ten-year timber schedule proposed by this Plan. Appendix A, and documents maintained by Unit Managers, list various other resource schedules.

B. Consistency with Other Documents and Instruments

This Forest Land and Resource Management Plan in conjunction with Forest Service Manuals and the Pacific Northwest Regional Guide establishes the management direction for the Mt. Hood National Forest for the next ten years. Upon implementation, this Plan shall supersede many plans which are currently in place on the Forest. Some plans will continue unchanged. Outstanding permits, contracts, cooperative agreements, other instruments for occupancy, and existing plans shall be revised to bring them in compliance with this Plan as soon as practicable as provided by 36 CFR 219.10 (e) and 36 CFR 219.29 (a), or as specified in the standards presented in Chapter Four of this Plan.

Table FIVE-1 on the following two pages shows which existing Forest Land and Resource Plans are to be continued unchanged, continued with revision, or superseded upon the adoption of this Plan. Plans incorporated into this Plan will thereby become part of the management direction of this Plan.

TABLE FIVE-1 STATUS OF EXISTING PLANS
Under The Forest Land And Resource Management Plan (Forest Plan)

PLANS TO BE CONTINUED AS IS	PLANS TO BE CONTINUED WITH REVISIONS	PLANS TO BE SUPERSEDED
	PLANNING UNIT PLANS	
1/ Bull Run FEIS	Mt. Hood Community Mt. Hood Corridor	2/ Clackamas Huckleberry EIS Badger-Jordan The Dalles Municipal Watershed Roaring River/ Salmon River EIS Eagle Creek Watershed
	DISTRICT MULTIPLE USE PLANS	
		All Districts
	RANGE ALLOTMENT PLANS	
Long Prairie White River Wapinitia Horsetail Clackamas Badger & Grasshopper Coordinated Resource Plans	Roaring River	
	RESOURCE PLANS	
Forest Noxious Weed Ownership Adjustment Bagby Research Natural Area	Forest Transportation Rock Resource Geothermal Leasing Analysis Road Maintenance	
	TIMBER PLANS	
	Tree Improvement Program	Forest TM Plan
	FIRE MANAGEMENT PLANS	
Forest Aviation	Fire Mgmt. Implementation	

1/ The land designation in this FEIS will stand. However the management directions may be revised to reflect current needs. The FEIS valid under the Forest Plan will include the new water quality standards developed by the USDA Forest Service and the City of Portland Water Bureau.

2/ This EIS was never formally approved.

Table FIVE-1 STATUS OF EXISTING PLANS (con't)
UNDER THE FOREST LAND AND RESOURCE MANAGEMENT PLAN (Forest Plan)

PLANS TO BE CONTINUED AS IS	PLANS TO BE CONTINUED WITH REVISIONS	PLANS TO BE SUPERSEDED
	RECREATION PLANS	
Columbia Gorge Outreach Timberline Interpretive	Timothy Lake Area Off-Road Vehicles Visitor Information Service	Eagle Creek Limited Area
	SKI AREA MASTER PLANS	
Mt. Hood Meadows Ski Area FEIS for future development Timberline Lodge FEIS	Multorpor (Mirror Mountain) Ski Bowl	
	SPECIAL INTEREST & UNUSUAL INTEREST AREA PLANS	
	Bagby Hot Springs Geological Area Little Crater Lake Geologic Area Olallie Lake Scenic Area Parkdale Lava Beds Unusual Interest Area Sugar Pine Unusual Interest Area	Bull of the Woods Scenic Area
	HISTORIC AREA PLANS	
Clackamas Lake Ranger Station Historic Site Mgmt	Col. Gorge "Old" Wagon Road Barlow Tollgate Historic Area Barlow Road Management	Cloud Cap Inn Unusual Interest Area
	RECREATION TRAIL PLANS	
Pacific Crest National Scenic Trail	District Trail Development Management (one per Dist.)	

C. Budget Proposals

The Plan's scheduled projects are translated into multi-year program budget proposals that identify needed expenditures. The schedule is used for requesting and allocating the funds needed to carry out the planned management direction. Upon approval of a final budget for the forest, the annual program of work is finalized and carried out. Accomplishment of the annual program is the incremental implementation of the management direction of the Forest Plan. Outputs and activities in individual years could be significantly different from those shown in Chapter Four, depending on final budgets.

D. Environmental Analysis

Projects and activities permitted through this Plan are subject to analysis under the NEPA process as they are planned for implementation. If the environmental analysis for a project shows that: (a) the management area prescriptions, standards and guidelines can be compiled with, and (b) little or no environmental effects are expected beyond those identified and documented in the Forest Plan Final EIS, the analysis could result in a categorical exclusion. This means that an analysis will not necessarily be documented in the form of an environmental assessment or environmental impact statement.

III. MONITORING AND EVALUATION PROGRAM

A. Monitoring Plan

The Monitoring Plan, described in matrix form on the following pages, identifies the key activities and outputs to be tracked during implementation of this Plan. Monitoring assures that activities conform to the Management Area Direction. This direction consists of Forest-wide Standards, Management Area Prescriptions, the Management Area Map that accompanies this document, and the scheduled outputs and accompanying budgets that satisfy the objectives of this Plan (see Chapter Four).

Currently, many activities are being monitored to comply with administrative and legal responsibilities. However, this monitoring is not specific for the Management Direction in this Plan. Those activities that are specific to this Plan and are sensitive enough to provide a measure of how well the Management Direction is being applied are listed for monitoring in the Monitoring Plan that follows.

The Monitoring Plan on the following pages consists of the following components by column in the tables:

Column 1. **Monitoring Item Number:** The numerical identifier of the item to be monitored, by Resource.

Column 2. **Actions/Effects to be Monitored:** A statement of what will be examined.

Column 3. **How:** The process by which the examination will be done.

Column 4. **Monitoring Frequency:** The schedule of examination expressed in given time periods.

Column 5. **Expected Precision and Reliability:** The accuracy of the data collection and how closely the monitoring measures conform to the intent of the Plan.

Column 6. **Unit(s) of Measure:** Self explanatory.

Column 7. **Current Data Storage Location:** The site, file, or data storage system in which the monitoring results will be kept.

Column 8. **Evaluation Responsibility:** The person or persons responsible for evaluating the monitoring activity. Line responsibility lies with the Forest Supervisor and Forest Management Team. Ranger Districts will have much of the "doing" responsibility.

Column 9. **Estimated Cost of Monitoring:** This column is used to show how much the monitoring activity is expected to cost annually. Often costs are part of another task such as an annual report, review survey or other job.

Column 10. **Variability which would Initiate Further Evaluation or Action:** The threshold beyond which results of an activity should not vary. Once this threshold tolerance is exceeded, management would be expected to follow the actions displayed in the Decision Flow Diagram displayed in Table FIVE-3.

Table FIVE-2 MONITORING PLAN

MONITORING ELEMENT & ITEM NUMBER	ACTIONS/EFFECTS TO BE MONITORED	HOW	MONITORING FREQUENCY	EXPECTED PRECISION & RELIABILITY	UNIT(S) OF MEASURE	CURRENT DATA STORAGE LOCATION	EVALUATION RESPONSIBILITY	ESTIMATED MONITORING JOB COST	VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION
MINERALS & GEOLOGY									
1.011	Landslides a)Resource data	Identify and inventory the following geologic and engineering parameters: -Soil depth. -Soil type and engineering characteristics of that soil type, i.e. cohesion, density, etc. -Bedrock and structural geology. -Landforms i.e. landslides, etc. -Ground water and surface water -Slope.	Inventory parameters will be updated as site specific information becomes available on an annual basis.	Where site specific information is available precision will be high. Where inventories are area specific, engineering parameters are not lab tested. Where expected changes in geologic and hydrologic parameters have not been tested and monitored by the model in the sub-		Files, inventory maps.	Geologist, Geotech,Eng.		When landslide occurrence is plus or minus 20% different from projected probability of failure.

Table FIVE-2 MONITORING PLAN (con't)

MONITORING ELEMENT & ITEM NUMBER	ACTIONS/EFFECTS TO BE MONITORED	HOW	MONITORING FREQUENCY	EXPECTED PRECISION & RELIABILITY	UNIT(S) OF MEASURE	CURRENT DATA STORAGE LOCATION	EVALUATION RESPONSIBILITY	ESTIMATED MONITORING JOB COST	VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION
MINERALS & GEOLOGY (Con't) 1.011 (Con't)		Monitor projected landslide hazard. A statistical determination of the percent probability of failure will be calculated from the geologic and engineering conditions of the area. Geologic and engineering parameters that change due to natural or management activities will be monitored.		ject area for a specific management activity or where drilling information is not available, the model precision will be moderate.					

Table FIVE-2 (Con't)

MONITORING ELEMENT & ITEM NUMBER	ACTIONS/EFFECTS TO BE MONITORED	HOW	MONITORING FREQUENCY	EXPECTED PRECISION & RELIABILITY	UNIT(S) OF MEASURE	CURRENT DATA STORAGE LOCATION	EVALUATION RESPONSIBILITY	ESTIMATED MONITORING JOB COST	VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION
MINERALS & GEOLOGY (Con't)									
1.012	b)Landslide Mitigation								
	Adverse environmental impacts due to management activities on the geology resource (i.e. land stability) and the success of mitigation measures to reduce or eliminate these adverse environmental impacts.	Field reconnaissance in area of management activity. Monitor compliance to mitigation measures identified in the environmental document. Monitor effectiveness, feasibility and cost of the mitigating measures.	Continuous process	Moderate to High	Projects	Files	Geologist, Geotech Eng.		Noncompliance with environmental document and unfeasable or unsuccessful mitigation measures.

Table FIVE-2 MONITORING PLAN (con't)

MONITORING ELEMENT & ITEM NUMBER	ACTIONS/EFFECTS TO BE MONITORED	HOW	MONITORING FREQUENCY	EXPECTED PRECISION & RELIABILITY	UNIT(S) OF MEASURE	CURRENT DATA STORAGE LOCATION	EVALUATION RESPONSIBILITY	ESTIMATED MONITORING JOB COST	VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION
MINERALS & GEOLOGY (Con't)									
1.021	Minerals								
	a. Adverse environmental impacts and success of mitigation measures.	a. Field reconnaissance in area of management activity. Monitor compliance to mitigation measures identified in the environmental document.	Continuous process	Moderate to high	Projects	Files, Forest Inventory	Geologist, Geotech Eng. Quarry Manager		Noncompliance with environmental document and unfeasable or unsuccessful mitigation measures. Trend toward increased restrictions, reduction of availability of and degradation of access to mineral potential land; positive exploration results, changing natural priorities. Non-compliance with quarry operating plan.
1.022	Minerals								
	b. Forest Service allocations for all actions that may affect mineral activities, land availability or access into areas which have potential for mineral resource occurrences.	b. Review requests for withdrawl, project plans, environmental analysis, new exploration data and mineral evaluation.	Continuous process	Moderate to high	Projects	Files, Forest inventory	Geologist		Non compliance with enviornmental documentation. Exploration data that doesn't support current allocations.

Table FIVE-2 MONITORING PLAN (con't)

MONITORING ELEMENT & ITEM NUMBER	ACTIONS/EFFECTS TO BE MONITORED	HOW	MONITORING FREQUENCY	EXPECTED PRECISION & RELIABILITY	UNIT(S) OF MEASURE	CURRENT DATA STORAGE LOCATION	EVALUATION RESPONSIBILITY	ESTIMATED MONITORING JOB COST	VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION
MINERALS & GEOLOGY (Con't)									
1.023	C. Minerals-identify and inventory mineral potential data. Update leases, mining claims and rock resource inventories.	C. Collection and analysis of geologic data to determine potential. Incorporation of status changes for leases and claims as per notification of BLM, and update rock resource inventories.	Continuous process	Moderate to high	Projects	Files, Forest inventory	Geologist		Rock resource inventories don't meet demand. Lease demand picks up.

SOIL

Definition of Monitoring Items.

1. Soil Compaction

Purpose of monitoring will be to measure compliance with the regional policy of no more than 20 percent of a unit being in a damaged condition. Information from monitoring can also be used to help evaluate the effectiveness of mitigating measures. The importance of compaction to long term productivity is an important relationship needing further evaluation.

The extent of compaction will be determined through point sampling along a line transect. Each point will be evaluated for detrimental compaction features of loss of macropore space.

Monitoring costs can be tied to timber-sale harvest units by the Environmental Analysis Report Monitoring Plan.

2. Burning Impacts on Nutrient Cycling

Purpose of monitoring will be to evaluate the loss of nutrients from broadcast burning and machine piling and burning site preparation techniques. Information will be used to help in evaluation of long term productivity.

Loss of nutrients will be determined through methods to evaluate loss of forest litter by use of duff pins, line transects, volume measurements of forest litter and chemical analysis of forest litter samples. Additional information will be collected on post treatment fuel size class distribution.

Monitoring will determine harvest area in light, moderate and severe burning class and approximate percentage of nitrogen loss.

3. Cumulative Effects of Multiple Entries on Productivity Losses

Purpose of monitoring will be to determine volume growth losses from the multiple ground based activities occurring on the Forest, including regeneration tractor harvest, machine pile site preparation, and future ground based commercial thinning entries. Volume declines would be directly attributable to compaction the surface soil.

Growth effects would be determined by volume change measurements taken at 5 year intervals or within 3 years of thinning entries.

4. Soil and Water Improvement Projects

Purpose of monitoring will be to determine if targets are accomplished as scheduled. Monitoring will be accomplished through annual attainment reports.

Table FIVE-2 MONITORING PLAN (con't)

MONITORING ELEMENT & ITEM NUMBER	ACTIONS/EFFECTS TO BE MONITORED	HOW	MONITORING FREQUENCY	EXPECTED PRECISION & RELIABILITY	UNIT(S) OF MEASURE	CURRENT DATA STORAGE LOCATION	EVALUATION RESPONSIBILITY	ESTIMATED MONITORING JOB COST	VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION
SOIL (Con't)									
2.010	Soil compaction and puddling.	Project sampling.	Annually	High	Percent harvest area damaged.	2550	Soil Staff	6,600	
2.020	Burning effects on nutrient cycling.	Project sampling.	Annually	High	Kg/ha nitrogen loss.	2550	Soil Staff	2,200	25% site nitrogen capital lost.
2.030	Growth losses caused by accumulative compactive activities.	Project sampling.	Annually	High	Cubic feet.	2550	Soil Staff	$15,500/yr	10% decline in tree growth.
2.040	Soil & water improvement projects.	Attainment reports.	Annually	High	Acres	2520	Soil Staff	2,200	72% of acre target not achieved.

Table FIVE-2 MONITORING PLAN (con't)

MONITORING ELEMENT & ITEM NUMBER	ACTIONS/EFFECTS TO BE MONITORED	HOW	MONITORING FREQUENCY	EXPECTED PRECISION & RELIABILITY	UNIT(S) OF MEASURE	CURRENT DATA STORAGE LOCATION	EVALUATION RESPONSIBILITY	ESTIMATED MONITORING JOB COST	VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION
AQUATIC RESOURCE									
3.010	Population Trends for Fisheries Management Indicator Species Group								
3.011	A. Anadromous Fish	Basin counts of anadromous fish migration. Currently on-going on Clackamas and Sandy Rivers at hydro facilities.	Annually	High	Adults/ Smolts	File 2620 TRI	RWW Staff 1/	$500/yr.	± 30% change in 5 yr. Average Basin Count

Table FIVE-2 MONITORING PLAN (con't)

MONITORING ELEMENT & ITEM NUMBER	ACTIONS/EFFECTS TO BE MONITORED	HOW	MONITORING FREQUENCY	EXPECTED PRECISION & RELIABILITY	UNIT(S) OF MEASURE	CURRENT DATA STORAGE LOCATION	EVALUATION RESPONSIBILITY	ESTIMATED MONITORING JOB COST	VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION
MINERALS & GEOLOGY (Con't)									
3.012	B. Resident Trout	1. Network of sample reaches (streams) and sites (lakes/reservoirs) to approximate basin or area wide conditions. Long term areas will include quantitative monitoring of riparian conditions, habitat conditions, water quantity and quality, fish population. Actual sample network to be developed through consultation with ODFW and Biometrician.	Annually for first 3 yrs, every 3 years thereafter.	Medium	Resident Trout	File 2620 TRI	RWW Staff	$4000/yr 2/	± 20% change in 6 yr average for any drainage or lake.

Table FIVE-2 MONITORING PLAN (con't)

MONITORING ELEMENT & ITEM NUMBER	ACTIONS/EFFECTS TO BE MONITORED	HOW	MONITORING FREQUENCY	EXPECTED PRECISION & RELIABILITY	UNIT(S) OF MEASURE	CURRENT DATA STORAGE LOCATION	EVALUATION RESPONSIBILITY	ESTIMATED MONITORING JOB COST	VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION
AQUATIC RESOURCE (Con't)									
3.020	Habitat Capability trend for Management Indicator Species Group.	See 3.1B. Also includes TRI accounting accessible miles. Will require development and validation of habitat variables: carrying capacity relationship model-see information needs section.	Annually for first 3 yrs, every 3 years thereafter.	Medium	Smolt habitat capability index (SHCI)/ legal trout habitat capability index (THCI).	File 2620 TRI	RWW Staff	$11,000/yr. 2/	± 30% change in index for drainage/sub-drainage (streams) S.H.C.I.and T.H.C.I. and lakes (T.H.C.I. only).
3.021	A. Anadromous (Index Reaches)								
3.022	B. ResidentTrout 1. Streams (Index Reaches)								
3.023	2. Lakes (Index Sites)								

Table FIVE-2 MONITORING PLAN (con't)

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MINERALS & GEOLOGY (Con't)									
3.030	Aquatic Habitat Condition.								
3.031	A. Summer Stream Temp.	See 3.1B. To include cumulative effect monitoring reaches on 15-Mile Creek and and White River Tributaries.	Annually for first 3 yrs. every 3 yrs thereafter.	High	5 day	File 2520 water temp.	RWW Staff	$2,000/yr 2/	Annual Change in average of $\geq 2^{\circ}$ F.
3.032	B. Aquatic Conditions Trend.	See 3.1B To include reaches as described in A. above using macro-invertebrate sampling.	Same as A.	Medium	Biological condition Index (B.C.I.)	File 2520 TRI	RWW Staff	$4,000/yr 2/	Significant change in species diversity and/or production index as determined by R-4 Aquatic-Ecosystem analysis lab.

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AQUATIC RESOURCE (Con't)									
3.040	Watershed Condition.	Index measure of subdrainage susceptibility to damaging "rain on snow" flood events.	Every 5 yrs each sub-drainage.	Medium	Index	2520 TRI	RWW	$1,500/yr	N.A.-Index Supplements reach monitoring.
3.050	Riparian Management Area Activities.	Activity/Area specific monitoring to gauge accomplishment of management area standards. Number and frequency of reviews in each category will be dependent on relative risk rating associated with activities and management area category: a. Key Site b. Special emphasis c. General	Annual	Medium	Variable depending on standard.	2520 2620 TRI	RWW	$20,000/yr	Activities depart from established standards more than 10% of time or indications that management goal of any area may be compromised.

Table FIVE-2 MONITORING PLAN (con't)

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AQUATIC RESOURCE (Con't)									
3.060	Aquatic Habitat improvement projects attainment.	Attainment reporting by function and post project field review ≥ 20% of annual projects.	Annual	High	Acres Structures.	2520 2620 TRI	RWW	$2,000/yr.	Less Than 95% of annual Forestwide accomplishment or less than 90% accomplishment by individual project.

1/ Assumes completion of counting facilities on Hood River and 15-Mile Creek prior to implementation of Plans.

2/ Prorated cost for individual monitoring elements. Total estimated annual cost for Forest-wide network of index reaches and sites is $20,000 - $25,000/yr.

Table FIVE-2 MONITORING PLAN (con't)

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AIR									
4.010	If Forest Service and Oregon State Air Quality Guidelines are being met.	As per procedures in the Oregon State Smoke Management Plan and State Implementation Plan (SIP), and Forest Service Pacific Northwest Regional Guide (FEIS) May 1984 Table 4-8, page 4-24.	On Going Annually	Moderate	Number of projects and tons of suspended Particles (TSP).	Annual State Report and Forest Service Pres-Fire Post Burn Evaluation.	Forest Fire Staff Officer and District Rangers	$1,800/Yr.	When air quality standards deviate from those established by the State of Oregon Plan (SIP) and the Forest Service Pacific Northwest Regional Guide (FEIS) May 1984 Table 4-8, page 4-24.
4.020	Standard Visual Range in Wilderness Areas.	Photo Points.	Annually May-October.	High	Distance by percentile of days.	2120	Forest Fire Staff Officer with assistance of Regional Office meteorologist.	$5,500	When air quality standards deviate from those established by the State of Oregon Plan (SIP) and the Forest Service Pacific Northwest Regional Guide (FEIS) May 1984 Table 4-8, page 4-24.

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TIMBER									
5.010	Forest timber sale activity program and action plan.	Review 5-Year Action Plan & accomplishment reports.	Annually	High	Board Feet	TSA Reports	Timber Staff Officer	$1,000/yr	Projection of 10-year program varies from 10-year ASQ by ±10% Year-to year program varies ±25%
5.020	Assure restocking within 5 years	Stocking surveys scheduled for each project. Review of past regeneration projects not certified as regenerated	Annually	High	Acres below minimum stocking level	TRI Project Records, Survey Record	Timber Staff Officer	$2.40/acre $12,000/yr	Survival below minimum stocking level called for in project prescription
5.031 5.032	Assure size of created openings do not exceed prescription objectives & Forest & Regional standard Evaluate whether such size limits should be continued	Review project Environmental Analysis, post sale reviews, unit GMR & program reviews.	Each project, 4-year GMR, program reviews	Moderate	Acres	TRI, Project Files	Timber Staff Officer	$2,000/yr	Any departure from objectives or standards
5.040	Stands to be regenerated meet culmination requirement.	Analysis during preparation of silvicultural prescription	Through Program and Activity Reviews	Moderate	Age and average volume	TSE Project Files	Timber Staff Officer	$3,000/yr	Any departure from objectives or standards

Table FIVE-2 MONITORING PLAN (con't)

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TIMBER (Con't)									
5.050	Dispersal and shape of regeneration areas.	Check project EA, TRI, resource photography for proper dispersal & shape determined by prescription standards	4-year GMR, Program and Activity Reviews	Moderate	Acres	TRI, Resource Photography, Project Records	Timber Staff Officer	$3,000/yr	Any departure from objectives or standards.
5.060	Assure that accomplished intensive management practices are consistent with planned harvest levels (i.e.,timber stand improvement, reforestation).	Compare attainment reports with Forest Plan selected intensity levels	Annually	Moderate	Acres	Attainment Reports	Timber Staff Officer	$1,200/yr	When attainment falls below 10% by 5th year.
5.070	Assure that timber harvest and associated activities meet Regional & Forest Plan Prescription objectives, Standards, and Guidelines.	Review project NEPA documents work plans and inspection reports. Field reviews.	On-going GMR Program Reviews	Moderate	---	Correspondence TRI Inspection Reports	Timber Staff Officer	$6,000/yr	Any departure from management area objectives or standards

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TIMBER (Con't)									
5.080	Evaluate adequacy of silviculture model used to generate managed yield tables for Forest Plan	Compare predicted growth with actual growth in oldest plantations and thinning projects on Forest	Once during Plan period prior to scheduled update	Moderate	Descriptive growth statistics	TRI	Timber Staff Officer	$3,000 in 1993 only	Use for scheduled plan revision
5.090	Change in Resource allocations of land base.	Carry cumulative totals of changes (i.e., wilderness designation, etc.) to determine if Plan adjustments are necessary.	On-going Review annually.	Moderate	Acres	TRI	Timber Staff Officer	$1,000/yr	When cumulative change reaches 10%.
5.100	Population levels of insects & disease following management activities.	Annual insect & disease survey (by R-6 Forest Pest Mgmt specialists) Compare with past surveys to detect trends.	Annually	Moderate	Acres infected	Survey Report	Timber Staff Officer	$8,200/yr	As recommended by Regional Office specialists.

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TIMBER (Con't)									
Lands not Suitable for Timber Production									
5.110	Assure programmed activities are compatible with classification	Compare each proposed activity with TRI cell land classification Annually produce a TRI extract comparing accomplished activities with cell suitability classification.	Each proposed project, annual review.	Moderate	Acres	TRI, Project Files review	Timber Staff Officer	$6,000/yr	Any departure from compatibility.
5.120	Assure that cumulative changes in vegetation, age, and type, are in agreement with predicted levels.	Compare actual with predicted at five year intervals.	Every 5 years	Moderate	Acres by type	TRI	Timber Staff Officer	$3,000/5 yrs starting in 1993	Any departure exceeding ±10% from predicted levels.
5.130	Examine lands not suited for timber production at least every 10 years to determine if they have become suitable.	Check for changes in legal definition of suitability. Check for changes in technology.	Every 10 yrs	Low	Suitable acres	TRI	Timber Staff Officer		Change of ± 5% in total suitable acres

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WILDLIFE									
6.010 (Pine/Oak habitat) Turkey/Silver gray squirrel.	A. Forest Maintenance of at least 5-20" + dbh, live ponderosa pine per acre on pine/oak areas.	Sample activity areas (Timber Sale) and count large pine remaining per acre.	First 3 yrs. do annually, then once every 3 yrs.	High	Number of trees per acre.	Files	District Ranger	$1,000/yr.	20% reduction in expected number of ponderosa pine per acre in timber sale areas.
6.011									
6.012	B. Present Forest populations of silver gray squirrel and turkey being maintained.	Population index.	Annually	Medium	Number of turkey/squirrels per management area.	ODF&W	District Ranger ODF&W	None	± 5% variation in management area populations.
6.013	C. Forest maintenance of current level of oak component on the pine/oak area.	Sample activity areas and make ocular estimate of oak occurrence.	First 3 yrs. do annually, then once every 5 yrs.	Medium	Occurrence	District	District Ranger	Part of "A" above.	If less than 50% of activity areas do not retain the oak component.

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WILDLIFE (CON'T)									
6.021 Wildlife (Winter Range) Deer/Elk	A. Winter range standards being met; eg. cover/forage ratio, effective road density.	Review current TRI data with sample field verification for cover/forage ratio and road density.	Annually for first 3/yrs., then once every 3 yrs.	Medium	% of winter range area in forage and optimum thermal cover; miles of open road within winter range.	District	District Ranger	$7.000/Yr.	>20% of areas sampled do not meet road density or cover/forage objectives.
6.022	B. Forest populations of deer and elk meeting minimum objectives set by ODF&W.	Review records of ODF&W	Annually	Low	Trend	ODF&W The Dalles	ODF&W/Forest Supervisor	None	Decline; below area objectives.
6.031 Spotted Owl (Old growth)	A. Habitat suitability (defined by RO).	Vegetation sampling (defined by RO).	1st, 5th, 10th year.	High	Trees, snags etc. per acre.	Files	District, SO	$23,000/yr.	>40 acres of designated habitat area was found to be unsuitable.
6.032	B. Verification of occupancy/nesting.	Call nest area between March 1-July 15.	Every 3rd year.	High	Number of sites occupied/nesting.	Files	District, SO	$23,000	If site unoccupied for 3 consecutive years.

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WILDLIFE (CON'T)									
6.040 Pileated Wood pecker	A. Habitat distribution and suitability (defined by RO).	Vegetation sampling (defined by RO).	1st, 5th, 10th Years.	High	Acres of suitable mature/ old growth within 600 acre management area.	Files	District, SO	$15,300.00	>40 acres of designated habitat areas were found unsuitable.
6.050 Pine Marten	Habitat distribution and suitability (defined by RO).	Vegetation sampling (defined by RO).	1st, 5th, 10th Years.	High	Acres of suitable mature/ old growth within 320 acre management area.	Files	District, SO	$23,100	>40 acres of designated habitat areas were found to be unsuitable.

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PROTECTION									
7.010	Fire Prevention Program.	Measure size and number of human caused fires.	Each 5 Yrs.	Moderate	Change in number of fires and and acres	Individual fire reports, annual reports	Forest Fire Staff Officer and District Fire Management Officer	$3,000/Yr.	20 percent departure Forest Plan based on 5 years of data.
7.020	Actual number of Wildfires and Acres Burned	Record wildfire frequency by size, distribution, intensity and total acres burned in fire reports.	Annually	High	Number of fires and acres burned	As above	Forest Fire Staff Officer and District Fire Management Officer	$1,400/Yr.	20 percent departure from Forest Plan based on 5 years of data.
7.030	Fire Management Planning and Analysis.	Integrate fire management Action Plan. Level II Fire Analysis and effectiveness Index.	Annually and Individual fires	High	Dollars (FMEI)	As above	Forest Fire Staff Officer and District Fire Management Officer	$5,300/Yr.	20 percent departure from Forest Plan based on 5 years of data.
7.040	Desired Fuel and Residue Profiles.	Review EA's, project work plans and field post burn evaluations on 10% of cutting units.	Annually	High	By fuel loading.	5150	Forest Fire Staff Officer and District Fire Management Officers	$10,000/Yr.	10 percent departure from Forest Plan on > 20 percent of the acres.

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COMMUNITY STABILITY									
8.010	Change in Forest contribution to influence area wood products employment sources.	Tracking of raw material flow to mills.	Annually	Moderate	MMBF/yr	TSA reports	Planning Staff Officer	No Additional Costs	10 percent deviation from planned harvest.

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ECONOMICS									
9.010	Cost per unit of output.	Compare actual costs and attainments to unit cost estimates used in the Forest Plan, using selected sensitive items that influence decisions made in the Plan.	Sample Annually and report running 5 yr average.	Moderate	Dollars per output unit or activity unit.	PAMARS, Forest Attainment Report and Accomplishment Reports and Forest Plan	Forest Administrative Officer	$1,800/year	Threshold to be established for each item.

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TRANSPORTATION									
10.010	Miles of arterial and collector road construction and reconstruction.	Compare accomplishment with projected outputs.	Annually	High	Miles	Accomplishment Reports	Engineering Staff Officer	$204/Yr.	10 percent over five years.
10.020	All road construction and reconstruction to insure that roads are designed to standards appropriate for their intended uses, considering safety, cost of transportation and impact on land and resources.	Review and recommendation by Engr. Staff and approval by line officer of plans and contract.	Continuous	High	Mile	Forest Transportation Plan	Engineering Staff Officer	$3,500/Yr.	All nonconforming projects will be redesigned.
10.030	Miles local road construction and reconstruction.	Compare accomplishment with predicted outputs.	Annually	High	Miles	Accomplishment Reports	Engineering Staff Officer	$150/Yr.	25 percent over five years.
10.040	Cost of local road construction and reconstruction.	Compare actual costs with predicted costs.	Annually	High	$/Mile	Accomplishment Report	Engineering Staff Officer	$150/Yr.	10 percent over five years.

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RANGE									
11.010	Range condition and trend.	Refer to: FSH 2209.21	Every 3 years.	Moderate	Trend up, Static, or down	File 2210	Range Staff Officer	$1000/ Allotment	Downward trend.
11.020	Allotment management planning to update current plans.	FSH 2209.21	Every 5 years.	High	Plans	File 2210	Range Staff Officer	$2000/Plan	Major operational changes.
11.030	Riparian area management, determine riparian impacts.	FSH 2209.21	Annually	Moderate	Inspections	File 2210	Range Staff Officer	$1000/ Allotment	Undesirable impacts occurring.

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RECREATION									
12.010	Changes in recreation opportunity spectrum class distribution.	Update of ROS mapping.	5 years	High	Acres by ROS class	RIM and map file	Recreation & Lands Staff Officer	$3,500/yr.	Change of more than 10% in the area allocated to any ROS class.
12.020	Wild and Scenic River value protection.	Program, activity, and project review.	On-going as affected by project activities.	High	ROS classes and VQO	Files	Recreation & Lands Staff Officer	$1,500/yr.	Failure to meet direction requiring protection of river values through mitigation or evidence of actions affecting those values.
12.030	ORV use effects on soil, water, vegetation, fish and wildlife, visuals, other visitors or cultural and historic resources.	On-ground review of ORV use areas. Review of public comments.	Annually	Moderate	Transect conditions and comments	Files	District Ranger: Collect on-ground information and propose changes to ORV Management Plan. Recreation and Lands Staff: Review District comments.	$2,500/yr	If ORV use conflicts with management direction for a management area, such as unacceptable damage to soil, vegetation or visual quality, the area will be considered for closure or restriction of ORV use.

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WILDERNESS									
13.010	Actual RVDs meet the estimated carrying capacity.	Compare recreation use data collected for each wilderness to the estimated carrying capacity.	Annually	Moderate	Recreation Visitor Days (RVDs)	RIM Reports +2320 File	District Ranger Collect actual use information Recreation Staff Officer: Compile and compare data to estimated carrying capacity.	Districts: $5,000/yr. SO: $2500/yr	When estimated carrying capacity is exceeded by more than 5%.

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SPECIAL INTEREST AREAS									
14.010	Special features and the natural appearance of the landscape within these areas.	Program, activity and project reviews.	On-going as affected by project activities.	High	ROS classes and visual quality levels.	Project files, District and S.O. special interest area files.	Recreation and Lands Staff Officer.	$7200/Yr.	Failure to meet direction requiring protection of special features or evidence of actions affecting these features; and/or failure to achieve visual quality objectives.

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VISUAL RESOURCES									
15.010	Whether the condition of the visual resource is commensurate with standards required in the management prescription.	Program and Activity Reviews.	Annually, the rate of two districts per year.	Moderate	Visual quality achievement 1-10 scale.	File (2380)	Recreation Staff Officer	$2,000/yr.	Score of < 5.
		Video tape record the visual condition of Level I viewsheds	Three viewsheds annually. Each viewshed measured at 5 yr. intervals.	Moderate	Percent of viewshed in 4 visual quality levels.	File (2380)	Recreation Staff Officer	$1500/yr.	Visual condition less than desired condition.
15.020	Visual condition of the Forest.	Update EVC maps.	Five year intervals	High	Acres by EVC class	File (2380)	Recreation Staff Officer	$3,500 every 5th year	Existing condition varies from prescribed by > 10%.

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CULTURAL RESOURCES									
16.010	Accomplishment of inventoried acres, site reports and evaluations, project assessments, mitigation actions, management plans and the associated costs.	Review and compile data in inventory reports, site reports, evaluation reports mitigation reports and management plans.	Annually	Moderate	Acres, properties, reports, plans and dollars.	Annual accomplishment report, District and S.O. cultural resource files.	Recreation and Lands Staff Officer.	$625/Yr.	Failure to meet assigned targets and/or 10% decline in attainments relative to the unit costs involved.
16.020	Validity and effectiveness of inventory strategies in discovery of cultural resources.	Survey of 20% of ground disturbing projects after completion of the projects in accordance with inventory Plan.	On-going	Moderate	Acres, Properties.	District and S.O. cultural resource files.	Forest Archeologist	$15,000/yr	Discovery of a cultural resource after completion of the project.
16.030	Consideration of significant cultural resources du[illegible] roject pla[illegible].	Program, activity and project reviews; review of inventory reports and project assessments.	On-going	High	Properties	Project plan files, District and S.O. cultural resource files.	Forest Archeologist	$7500/Yr.	Project not in compliance with cultural resource laws and regulations.

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CULTURAL RESOURCES (CON'T)									
16.040	Protection of significant cultural resources during project implementation (where specified).	Review Environmental Analyses and project work plans; systematic field inspection during project activities of all cultural resources within 200 feet; inspection of selected projects to determine effectiveness of mitigation actions.	On-going	High	Properties	Project plan files, District and S.O. cultural resource files.	Recreation and Lands Staff Officer.	Average of $500/property or $5000/Yr.	Any disturbance to or alteration of the property.

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MONITORING ELEMENT & ITEM NUMBER	ACTIONS/EFFECTS TO BE MONITORED	HOW	MONITORING FREQUENCY	EXPECTED PRECISION & RELIABILITY	UNIT(S) OF MEASURE	CURRENT DATA STORAGE LOCATION	EVALUATION RESPONSIBILITY	ESTIMATED MONITORING JOB COST	VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION
CULTURAL RESOURCES (CON'T)									
16.050	Protection of historically significant structures from incompatible modification, vandalism and natural degradation.	Review of property management plans, associated special use permits, inspection visits to structures and documentation of observations (may include photogrammetric recordation in selected cases.	Variable: Depends on nature and intensity of threatening agents; minimum is annually.	High	Properties	RIM facility condition reports, District and S.O. cultural resource files.	Recreation and Lands Staff Officer.	Average of $75/structure or $4800/yr.	When unique or 5% of the structure's significant features are affected.
16.060	Protection of significant, nonstructural resources from non-project related impacts, vandalism and natural degradation.	Inspection visits to sites and documentation of observations (may include establishment of photo points).	Variable: depends on nature and intensity of threatening agents; at least annually for problem sites.	High	Properties	District and S.O. cultural resource files.	Recreation and Lands Staff Officer.	Average of $150/site or $1500/yr.	When unique or 5% of the site's significant features are affected.

Table FIVE-2 MONITORING PLAN (con't)

MONITORING ELEMENT & ITEM NUMBER	ACTIONS/EFFECTS TO BE MONITORED	HOW	MONITORING FREQUENCY	EXPECTED PRECISION & RELIABILITY	UNIT(S) OF MEASURE	CURRENT DATA STORAGE LOCATION	EVALUATION RESPONSIBILITY	ESTIMATED MONITORING JOB COST	VARIABILITY WHICH WOULD INITIATE FURTHER EVALUATION
AMERICAN INDIAN INTERACTION									
17.010	Responsiveness of Forest Management activities to the rights, interests and concerns of American Indians as reserved by Treaty and defined by the American Indian Religious Freedom Act.	Coordination of project plans and Environmental Analysis, where appropriate, with WSIR representatives.	On-going	Moderate	Documentation of Contacts	Project Files	Forest Supervisor	$1,000/year	Where conflicts exist between Forest Management objectives, and American Indian rights to and/or concerns for an area or resource.

IV. EVALUATION PROCESS

A. Decision Process for Evaluation

When the monitoring process indicates that the threshold tolerance has exceeded expectations established in the monitoring plan, a decision process as outlined on the following page must be followed.

Through this process a decision can be made in a systematic manner as to what action to take in respect to:

- Referring problems to the appropriate Line Officer for corrective action or adjustment of a program or outputs.
- Revising the schedule of outputs; as a non-significant amendment to the Forest Plan.
- Revising the Budget.
- Initiating a significant amendment of the Forest Plan.
- Initiating a Revision of the Forest Plan.

The following footnotes explain certain steps in the decision process.

1/ According to CFR 219.10 2 (F), "The Forest Supervisor shall determine whether a proposed amendment would result in a significant change in the plan. If the change resulting from the proposed amendment is determined to be significant, the Forest Supervisor shall follow the same procedure as that required for development and approval of a forest plan." Significance is defined in 40 CFR 1508.27 and paraphrased here; Significance must consider both the context and intensity of an action. An action may be insignificant to the entire state, but highly significant to a particular county. Thus the context of an action influences its significance. Intensity refers to the severity of an impact and may consider several criteria, including:

Public health effects.
Unique aspects of the affected area.
The degree of uncertainty about the magnitude of the effect.
Relationship to other effects (especially where the potential exists for cumulative effects).
Adverse effects on threatened and endangered species.

2/ According to 36 CFR 219.10 2 (F), "If the change resulting from the amendment is determined not to be significant for the purposes of the planning process, the Forest Supervisor may implement the amendment following appropriate public notification and satisfactory completion of NEPA procedures."

Table FIVE-3 DECISION FLOW DIAGRAM
(For Further Evaluation of the Forest Land and Resource Management Plan)

```
                                VARIABILITY EXCEEDS TOLERANCES
                                ESTABLISHED IN THE MONITORING PLAN.
                           (See right column of the Monitoring Plan Matrix)
                                              I
                      NO -----------------------I--------------------------YES
                      I                                                     I
                      I                                                EVALUATION
          CONTINUE IMPLEMENTING                                             I
          MANAGEMENT DIRECTION                NO--------------------MANAGEMENT PRACTICES ----------------YES
                                              I                        PROBLEM?
                                              I                                   YES------MANAGEMENT DIRECTION------NO
                                              I                                    I       CORRECTLY APPLIED?        I
                                              I                                    I                                 I
            NO-----PROBLEM WITHIN CONTROL---------------YES                 MANAGEMENT DIRECTION      REFER TO LINE OFFICER
             I     OF THE FOREST?                          I                 IS INEFFECTIVE IN         FOR CORRECTIVE ACTION.
             I                                             I                 MEETING OBJECTIVES.
             I                          PROBLEM REQUIRES CHANGE IN:                  I
             I                          BUDGET, SCHEDULE OR ALLOCATION.              I
             I                                             I                 ADJUST MANAGEMENT
   NO---TEMPORARY PROBLEM----YES                           I                 DIRECTION.
   I    OBJECTIVES NOW        I                            I                      I
   I    FEASIBLE?             I                            I                      I
   I                          I                            I                 YES----------OTHER RESOURCE OBJECTIVES---------NO
   I                          I                            I                  I                AFFECTED?                  I
INITIATE                   CONTINUE                        I                  I                                           I
SIGNIFICANT                TO IMPLEMENT                    I                  I                                           I
AMENDMENT                   FOREST PLAN.                   I                  I                                           I
OF PLAN.[1]                                               I          INITIATE SIGNIFICANT                  INITIATE NON SIGNIFICANT
                                                          I            AMENDMENT[1] OF PLAN.               AMENDMENT PROCESS TO[2]
                                                          I                                                  CHANGE MANAGEMENT DIRECTION
                                                          I                                                  WITH CONCURRENCE OF MANAGEMENT
                                                          I                                                  TEAM.
                                                          I
                                                          I
                                                          I
                                                          I
                                I----------------------I----------------I-----------------------------------------I
                                I                                        I                                         I
                   CAN AVAILABLE BUDGET CHANGE                CAN SCHEDULE CHANGE TO                  CAN ALLOCATION CHANGE TO
        YES--------TO ACCOMPLISH PLAN OUTPUT?------NO   NO-------ACCOMPLISH PLAN OUTPUT?----YES   NO------ACCOMPLISH PLAN OUTPUT?--YES
         I                                         I    I                                I          I                                I
         I                                         I    I                                I          I                                I
 REVISE BUDGET TO ACCOMPLISH    INITIATE SIGNIFICANT   INITIATE SIGNIFICANT      REVISE SCHEDULE AND   INITIATE SIGNIF-   REVISE ALLOCATION, TREAT
 OBJECTIVES, CONTINUE TO        AMENDMENT OF PLAN.     AMENDMENT OF PLAN.        TREAT AS A NON-       ICANT AMENDMENT    AS NON SIGNIFICANT
 IMPLEMENT PLAN.                                                                  SIGNIFICANT PLAN      OF PLAN.           AMENDMENT OF PLAN.[3]
                                                                                  AMENDMENT.
```

1/ According to CFR 219.10 2 (F), "The Forest Supervisor shall determine whether a proposed amendment would result in a significant change in the plan. If the change resulting from the proposed amendment is determined to be significant, the Forest Supervisor shall follow the same procedure as that required for development and approval of a forest plan". Significance is defined in 40 CFR 1508.27 and paraphrased here; Significance must consider both the context and intensity of an action. An action may be insignificant to the entire state, but highly significant to a particular county. Thus the context of an action influences its significance. Intensity refers to the severity of an impact and may consider several criteria, including:

- Public health effects.
- Unique aspects of the affected area.
- The degree of uncertainty about the magnitude of the effect.
- Relationship to other effects (especially where the potential exists for cumulative effects).
- Adverse effects on threatened and endangered species.

2/ According to 36 CFR 219.10 2 (F), "If the change resulting from the amendment is determined not to be significant for the purposes of the planning process, the Forest Supervisor may implement the amendment following appropriate public

B. Amendment and Revision of Forest Land and Resource Management Plan

At Intervals established in the monitoring plan, implementation will be evaluated to determine how well objectives have been met and how closely management standards have been applied. Based upon this evaluation, described in the preceeding decision flow chart, the Interdisciplinary Team shall recommend to the Forest Supervisor changes in management direction, land allocations, or revisions or amendments to the Forest Land and Resource Management Plan as deemed necessary.

If the change resulting from a proposed amendment is determined not to be significant, the Forest Supervisor may implement the amendment following appropriate public notification and satisfactory completion of NEPA procedures.

If the change is determined to be significant, the Forest Supervisor shall follow the same procedure as that for development and approval of The Forest Land and Resource Management Plan.

The Forest Plan shall ordinarily be revised on a 10 year cycle or at least every 15 years, and shall review the conditions on the land covered by the Plan at least every five years to determine whether conditions or demands of the public have changed significantly.

The Plan may also be amended if the Forest Supervisor determines that conditions have changed significantly, or when changes in the Resources Planning Act (RPA) would have a significant effect on Forest programs.

The results of monitoring and evaluation may be used by the Interdisciplinary Team to analyze the management situation during revision of the Plan. In the monitoring and evaluation process, the Interdisciplinary Team may recommend a revision at any time.

Revisions to the Forest Land and Resource Management Plan are not deemed to be in effect until approved in accordance with the requirements for the development and approval of the original Forest Plan.

APPENDIX A

FOREST PLAN-APPENDIX A

ACTIVITY SCHEDULES FOR RESOURCES OTHER THAN TIMBER

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FOREST PLAN APPENDIX A

RESOURCE ACTIVITY SCHEDULES

The following activity schedules are estimates of project types and/or budgets necessary to meet Forest Plan objectives, outputs and effects. Due to computer modeling approximations and assumptions, project types are not identical to outputs listed in Table Four-1 in Chapter Four.

The cost of implementation of these projects in addition to General Administration and monitoring, approximate the budget required to implement this Plan. If budgets are significantly different than those contained in this Plan, some projects will not be accomplished.

It is estimated that detailed schedules will require updating annually as a result of the budget process and new action plans.

Soil and Water Program

Riparian Resource Program

1. Maintain or improve (where conditions are less then desirable) water quality.

2. Maintain or improve the productive capability of the level.

3. Restore degraded watershed areas to achieve historic productive potentials (or as near the historic levels as is economically and technically feasible).

Table FBA-1 SOIL AND WATER PROGRAM FOCUS

Program Area	Annual Budget $M	Activities
Soil and Water Administration and Operation	490[1/]	1. Plans, inventories, survey, studies, program administration, and coordination with other state and federal agencies and other public. 2. Support services for other National Forest resource programs (Range, recreation, etc.) other than Timber.
Soil and Water	340	1. Capital investment Restoration work to restore degraded conditions. 2. KV work needed to restore degraded conditions.
Timber Support	200	1. Support services provided to timber management activities.

Watershed Improvement Needs

The following table lists the Mt. Hood National Forest's invent backlog of watershed restoration projects. This list is updated annually as projects are completed and/or additional project areas located. This list must be used in conjunction with Table FPA-3 for a complete listing of water restoration needs on the Forest (particularly for those streams showing a temperature, stability, or riparian revegetation problem).

Table FPA-2 WATERSHED IMPROVEMENT NEEDS INVENTORY

Project Name	Acres to be treated	Funds
Robinhood Channel TR	2.00	5.000
Bear Cr. Channel ERO	1.00	2.000
Campcreek Cordoning	1.00	1.000
Mainstem Gully	1.00	1.000
McMaldose Ripping	3.00	1.000
Collowash Ripping	10.00	6.000
Threemile Channel ERO	10.00	7.000
Still Cr. Rip-rap	3.00	50.000
Clear Br. Streamband ERO	3.00	8.000
Mud Cr. Ripping	20.00	5.000
Nanny Cr. ERO	5.00	6.000
Fish Cr. Sidecast Fail	1.00	45.000
Eagle Cr. Ripping	15.00	2.000
Clear Cr. Bank ERO	1.00	3.000
Bull Run Sidecast Fail	1.00	17.000
Round Cr. Reveg.	2.00	2.000
Lost Cr. Slump	1.00	8.000
Lunch Sidecast Fail	1.00	25.000
Linney Cr. Jank ERO	1.00	3.000
Barlow Cr. Channel ERO	3.00	6.000
Nott CG Bank ERO	12.00	30.000
Whetstone Rip-rap	1.00	4.000
Badger Road Drainage	1.00	2.000
Salmon R. Gabions	1.00	7.000
Bid Cr. Sidecast Fail	1.00	20.000
Oak Grove Slump	1.00	1.000
Farm Cr. Rip-rap	1.00	4.000
Boulder Cr. ERO	1.00	1.000
Tygh Cr. ERO	1.00	30.000
Lost Cr. Bank ERO	1.00	1.000
TOTAL	106.00	303.000

Fish and Wildlife Resource Program

General Program Goals

1. Maintain habitat capability for all species, particularly indicator species/groups, through progressive management and coordination with other resource programs and resource agencies.

2. Improve or restore habitat capability through rehabilitation of habitat degraded by natural events or management activity.

3. Improve habitat capability through capital investment projects designed to correct or modify natural factors limiting fish and/or wildlife production.

The Forest Plan stresses improved balance between all Forest resource programs. Program planning in Fish/Wildlife, in the first decade, focuses on raising overall quality and extent of riparian areas, fish and wildlife coordination and management activities.

Table FPA-3 FISH/WILDLIFE PROGRAM FOCUS

Program Area	Annual Budget $M	Activities
Fish/Wildlife/ Threatened & Endangered Species, (T&E)	253.0	1. Plans, inventories, studies-administrative and program activities-coordination with Federal, State and private agencies and public. 2. Support/coordination to other Forest resource programs (Recreation, Grazing, Minerals, etc.) except Timber.
Fish/Wildlife/T&E	736.0	1. Capital investment work to improve habitat (about 40% of total). 2. KV rehab/enhancement work. (About 60% of total).
Timber Support	221.0	1. Support activities to timber management program.

Fisheries Rehabilitation/Enhancement Opportunities

Major fish passage projects, in stream reaches of 10 miles or more in length, which appear feasible are listed below. In addition, a general listing of habitat rehab. and enhancement opportunities is displayed. Opportunities are listed by Forest River Basin and Major Tributary. For most tributaries and associated feeder streams more detailed information is available or is gathered prior to implementation of project work.

Table FPA-4 MAJOR FISH PASSAGE PROBLEMS

Basin	Stream	Approx. Miles	Notes
Clackamas	N.Fr.Clackamas	25+	Falls on private ownership. Habitat suitable for steelhead and coho salmon. Project in NWPPC Col. River Fish/WL Prog.
	Collowash	10+	Being planned as part of NWPPC Prog. Habitat suitable for coho and spring chinook, salmon and steelhead trout.
White R.	White R.	100+	Falls on private ownership. Feasibility study and prelim design completed 1985 as art of NWPPC Program. Implementation rejected by Oregon F/WL commission. Habitat suitable for spring chinook,salmon and steelhead.

Table FPA-5 MAJOR FISH PASSAGE PROJECTS

CLACKAMAS RIVER SYSTEM SEGMENT	SPECIES 1/	Rearing Habitat	Spawning Habitat	Holding Habitat	Summer Temp	Bank Stability	Habitat Feasibility Assessment	Riparian Reveget	Pool Develop-ment	Gravel Catchment	Protect-ive Fencing	Bank Stabili-zation	Off Channel Dev
Clackamas R. (upper)	Ch, Co, St	X	X	X			X	X	X	X			X
Oak Grove Fork	Ch, Co, St	X		X					X	X			
Mag Creek	Co, St	X		X									X
Hunter Creek	Co, St	X				X		X	X				
Lowe Creek	Co, St	X						X	X				
Falls Creek	Co, St	X							X				
No. Fk. Clackamas 2/	Ch, Co, St	X	X		X	X	X	X	X	X			X
Hot Springs Fork	Ch, Co, St	X		X	X	X	X	X	X				X
a. Pansy Cr.	St	X	X		X	X		X	X	X		X	
b. Hugh Cr.	St		X		X			X		X		X	
c. Mohorn Cr.	St	X			X	X		X	X			X	
Roaring River	Ch, ST		X	X					X	X			X
Collawash River	Ch, Co, St	X		X	X	X	X	X	X	X		X	X
S. Fk. Clackamas	Ch, Co, St	X					X						
Clackamas R. (lower)	Ch, Co, St		X						X	X			X
Cub Creek	St		X						X	X			
Pinhead Creek	Co, St	X							X				X
Fish Cr.	Ch, Co, St	X	X	X	X				X	X	X		

All known anadromous habitat enhancement opportunities have been grouped under appropriate tributary drainages (listed in the table above), comprising the Clackamas River Basin.

1/ Species Key: Ch = Chinook St = Steelhead Co = Coho Ctt = Cutthroat Trout

2/ Work on the No. Fork Clackamas is contingent on development of fish passage.

Table FPA-5 MAJOR FISH PASSAGE PROJECTS (con't)

SANDY RIVER SYSSEGMENT	SPECIES 1/	Rearing Habitat	Spawning Habitat	olding abitat	Summer Temp	Bank Stability	Habitat Feasibility Assessment	Riparian Reveget	Pool Develop-ment	Gravel Catchment	Protect-ive Fencing	Bank Stabili-zation	Off Channel Dev
Sandy River							X					X	X
Boulder Creek	Co, St		X							X			
Clear Creek	Co, St		X						X	X			
Lost Creek	Ch, Co, St	X	X	X		X		X	X			X	X
Lower Bull Run	Ch, Co, St		X	X			X			X			
Little Sandy River	Ch, Co, St												
Alder Creek	Co, St	X	X				X		X	X			
Clear Fork	Co, St	X		X					X				X
Zigzag River	Ch, Co, St	X	X	X		X	X		X	X		X	X
Little Zigzag							X						
Still Creek	Ch, Co, St	X	X	X			X		X			X	X
Camp Creek	Ch, Co, St.	X	X	X		X	X	X	X			X	X
Salmon River	Ch, Co, St	X	X	X			X		X	X			X
So. Fork Salmon R.	Ch, Co, St	X	X	X			X		X				X
Cheeny Creek	Co, St	X					X		X				

All known anadromous habitat enhancement opportunities have been grouped under appropriate tributary drainages (listed in the table above), comprising the Sandy River Basin.

Table FPA-5 MAJOR FISH PASSAGE PROJECTS (con't)

HOOD RIVER SYSTEM SEGMENT	SPECIES 1/	Rearing Habitat	Spawning Habitat	Holding Habitat	Summer Temp	Bank Stability	Habitat Feasibility Assessment	Riparian Reveget	Pool Develop-ment	Gravel Catchment	Protect-tive Fencing	Bank Stabili-zation	Off Channel Dev
Hood River Basin							X						
Clear Branch	Ch, St, Ctt		X							X			
Lake Branch	St	X	X			X		X	X	X		X	X
East Fork Hood	St, Ctt	X	X			X			X	X		X	X
West Fork Hood	Ch, St	X	X				X		X	X			X
Middle Fork Hood	Ch, St, Ctt	X	X	X			X		X	X			
Meal Creek	Co, St, Ctt	X		X		X			X		X	X	
Odell Creek	St, Ctt	X		X		X			X		X	X	

All known anadromous habitat enhancement opportunities have been grouped under appropriate tributary drainages (listed in the table above), comprising the Hood River Basin.

FIFTEEN MILE SYSTEM SEGMENT	SPECIES 1/	Rearing Habitat	Spawning Habitat	Holding Habitat	Summer Temp	Bank Stability	Habitat Feasibility Assessment	Riparian Reveget	Pool Develop-ment	Gravel Catchment	Protect-tive Fencing	Bank stabili-zation	Fish Screening
Fifteenmile Creek	St	X			X	X	X	X	X		X	X	X
Ramsey Creek	St	X			X	X	X	X	X		X	X	
Eightmile Creek	St	X			X	X	X	X	X		X	X	X
Fivemile Creek	St	X			X	X	X	X	X		X	X	
Dry Creek	St	X	X	X	X	X	X	X	X		X	X	X

All known anadromous habitat enhancement opportunities have been grouped under appropriate tributary drainages (listed in the table above) comprising the Fifteenmile Basin.

Table FPA-5 MAJOR FISH PASSAGE PROJECTS (con't)

COLUMBIA GORGE SYSTEM SEGMENT	SPECIES 1/	Rearing Habitat	Spawning Habitat	Holding Habitat	Summer Temp	Bank Stability	Habitat Feasibility Assessment	Riparian Reveget	Pool Devclop-ment	Gravel Catchment	Protect-tive Fencing	Bank Stabili-zation	Off Channel Dev
Moffett Creek	Ch, Co, St						X						
Horsetail Creek*	Ch, Co, St	X	X						X	X	X		X
Multnomah Creek	Ch, Co, St		X							X			X 3/
Lindsey Creek	Co, St						X						
Viento Creek	Co, St						X						
Herman Creek	Co, St	X					X		X				

All known anadromo habitat enhancement opportunities have been grouped under appropriate tributary drainages (listed in the table above), comprising the Columbia Gorge Tributaries.

3/ Potential interpretive project available at Multnomah Falls.

Recreation Program

Table FPA-6 RECREATION ACTIVITY SHEDULES
(Program Budget, Recreation Plans, and Recreation Project Priorities)

Programs	Capital Investment	O & M[1/]	Monitoring
Developed[2/]	$5,669,640/decade	$1,666,000/year	$ 24,000/year
Dispersed[3/]	$1,149,980/decade	$ 432,500/year	---
Wilderness	$ 515,000/decade	$ 237,500/year	$ 39,500/year
TOTALS:	$7,334,620/decade	$2,286,000/year	$ 63,300/year

1/ Operations and Maintenance (O & M)

2/ These cost estimates were generated from the 1983 Recreation Information (RIM) facility condition report and the 1983 Timberline Lodge Capital Investment Porgram document. The dollars are those necessary to bring all existing Forest Service owned facilities to Standard (full service) Level (i.e. dollars necessary to eliminate backlog maintenance needs). Of these total dollars, approximately one-half of the dollars are earmarked for Timberline Lodge and Multnomah Falls. The dollars identified do not include any dollars for development of new recreation sites.

The backlog work is planned for accomplishment in the first decade of the Forest Plan. Preconstruction planning will occupy the first two years of the decade; with most reconstruction work planned for subsequent years. However, there a a few projects with completed feasibility reports that could be constructed, or reconstructed, duiring the first year of the decade.

3/ These backlog investment needs include trail, trail structures, and trailheads; but not facilities associated with other dispersed sites.

Table FPA-7 RECREATION ACTIVITY PLANS

Plans	Supporting	Status
1. O & M	Developed	1 plan/district/year
2. Vegetative Management	Developed	5 plans/Forest/decade
3. Developed Site Priority Study	Developed	update as necessary
4. Dispersed Area	Dispersed	1 plan/district/decade
5. Trail Management	Dispersed/ Wilderness	update as necessary
6. Off Road Vehicle	All	update as necessary
7. Wilderness	Wilderness	update as necessary
8. Specific Management Area Plans (as needed)	Various	complete as appropriate

Recreation Project Priorities

Developed Recreation

The process to allocate these capital investment dollars throughout the seven ranger districts requires completion of the developed site priority study (Study). This Study will provide information to aid in determining specific facilities for rehabilitation during each year of the decade. Also, the Study will contain information that may suggest closing of low and/or uneconomical sites and expansion of higher use sites. In addition to the focus provided by the Study, the allocation of funds for reconstruction and new construction projects will be guided by the following objectives:

1. Reconstruction of sites with a health or safety concern or receiving resource damage.
2. Reconstruction of sites based on priority study.
3. Expansion of capacity at high use sites (as per priority study).
4. (No new developed sites are planned.)

To operate and maintain the developed sites, $1,666,000 is required per each year of the decade. This figure represents the manpower, equipment, and services necessary to operate the sites at a full service level and to complete routine maintenance.

The developed recreation implementation plans to be completed in the decade are as follows:

1. Operations and Maintenance (O & M Plan); 1 plan/district/year
2. Vegetative Management Plan; 5 plans/Forest/decade
3. Developed Site Priority Study; update as necessary

The monitoring program associated with developed recreation includes an annual evaluation of facility conditions, actual use, and survey of visitor's expectations.

Dispersed Recreation

The Forest develops an annual capital investment program based on district proposals. Each district has ranked reconstruction and construction opportunities in their Trail Management Plans. There is, in addition, a completed sno-park development plan to guide allocation of funds (Highway 26 and 35 Corridor Dispersed Sno-Park and Development Plan). With an overall objective of maintaining and enhancing a Forest-wide trail program, the Forest is guided by the following objectives:

1. Reconstruction of trails or trail structures with a health or safety concern or receiving resource damage.
2. Reconstruction of trails or trail structures with a high ranking as per District Trail Plan.
3. Construction of new trails with highest ranking (as per District Trail Plans). Emphasis is on providing opportunities for loop trails, providing ties with other agency trails, and providing low elevation components to the system.

Operations and routine maintenance of dispersed recreation areas and facilities will be at the full service level. The annual amount associated is $432,500.

The dispersed recreation implementation plans to be completed in the decade are as follows:

1. Dispersed Area Plans; 1 plan/district/decade
2. Trail Management Plan; update as necessary
3. Specific Management Area Plans; as appropriate 4/

4/ This would include plans for designated Wild and Scenic River segments, Special Interest Area, etc.

The monitoring program associated with dispersed recreation includes an annual evaluation of facility conditions, actual use, and survey of visitor's expectations.

Wilderness

In a manner analagous to the dispersed trail program, the Ranger Districts submit project proposals on a yearly basis using information from their trail and Wilderness management plans.

The priority for improving Wilderness trail systems will be guided by overall objectives similar to those defined for dispersed area management. There is, however, a greater emphasis placed on using trail reconstruction and construction to disperse use within Wilderness.

The Wilderness implementation plans to be completed in the decade are as follows:

1. Trail Management Plan; update as necessary
2. Wilderness Plan; update as necessary

The monitoring program for wilderness includes an annual evaluation of actual use, and limits of acceptable change. The emphasis in the monitoring program will be on heavily used Wilderness destinations or areas that appear to be exceeding the limits of acceptable change.

Visual Resources Program

Table FPA-8 VISUAL RESOURCES PROJECTS

PROJECTS	PRIORITY
Review all environmental statements/assessments for projects planned within Scenic Viewsheds, Special Interest Areas, Roaded Recreation Areas, Winter Recreation Areas, Outdoor Education Areas, Wild, Scenic, & Recreation River Areas, and Big Game/Visual Resource Areas.	1
Prepare vegetation management plans for all Scenic Viewsheds (Area B-2).	2
Assist in design and formulation of alternatives for projects planned in Scenic Viewsheds, Special Interest Areas, Roaded Recreation Areas, Developed Recreation Areas, Winter Recreation Areas, Outdoor Education Areas, and Big Game/Visual Resource Areas.	3
Monitor the visual condition of all Scenic Viewshed Areas.	4

Cultural Resources Program

Table FPA-9 CULTURAL RESOURCES
(Program Budget, Plans and Project Priorities)

Activity	Average Yearly Operation $	Estimates Yearly Monitoring $	Units/Year
Planning & Inventory:	$80,500	$15,625	1 management plan, 46,000 acres inventoried
Evaluation & Assessments:	$64,000	$7,500	18 property evaluations, 1 nomination to the NRHP 100 project assessments
Protection & Enhancement:	$100,000	$11,300	40 properties protected, 4 property mitigations, 10 property enhancements

Cultural Resources Program Priorities

Cultural Resources Program Planning and Inventory

A cultural resource preservation plan will be completed by 1995. This will integrate relevant information known about the Forest's cultural resources and help fill the information needs outlined in Chapter 2. It will provide a framework in which inventories, evaluations, nominations, protection, mitigation and enhancement can take place. In addition, one management plan per year will be prepared for eligible or National Register properties under special use permit and/or other historic properties of substantive value. Where administrative buildings are involved, these plans will be coordinated with District facility operation and maintenance plans. Plans for structures under special use permit should be given highest priority for completion.

Approximately 46,000 acres will need to be inventoried in support of timber, recreation, fisheries, range and land exchange projects. These inventories will generally cover project planning or implementation areas (rather than specific impact areas) in order to provide data to project planners as early as possible and give time to complete any needed mitigation. Inventories will normally be completed two years prior to the timber sell date or project implementation date (for other projects).

Inventories of areas not tied to specific projects will be completed as opportunities occur. They should be guided by the following priorities:

1. Areas not previously inventoried and in which ground disturbing projects occur only rarely, such as Wildernesses, Special Interest Areas and unroaded areas.
2. Areas which have a high probability of containing cultural resources according to inventory model expectations.
3. Areas which historic records indicate structures may be present.

Monitoring activities will resurvey 20% of ground disturbing projects within one year of their completion in order to validate and test the effectiveness of inventory strategies.

Cultural Resources Evaluation and Assessments

All projects which may potentially affect cultural resources will be assessed for their potential effect using criteria established in Federal regulations. Cultural resources that may be affected will be evaluated to determine their eligibility to the National Register of Historic Places. Normally, one National Register nomination will be prepared per year. Nominations should emphasize thematic or district nominations over single resource ones.

Evaluations of cultural resources not involved with specific projects will be completed as opportunities occur. They should be guided by the following priorities:

1. Sites are in current use or are undergoing substantial natural degradation or vandalism. Use may include non-project related impacts, such as an archeological site undergoing impact from recreation use within a campground.
2. Sites easily accessible to the general public.
3. Sites associated with a thematic group not well represented by those already listed on the National Register.

Monitoring activities will mostly include review of inventory and site reports, Environmental Assessments and project work plans to ensure compliance with cultural resource statutes. Program and activity reviews may also occur on a periodic basis.

Cultural Resources Protection and Enhancement

When project avoidance of a cultural resource is not practicable, then a mitigation plan will be written. Mitigation which minimizes the effect is preferred. The actions outlined in the mitigation plan will be completed and documented before project activities begin. The estimated cost for this activity will probably vary widely from year to year depending on the amount and type of mitigation to be undertaken, but may average $60,000 per year.

Cultural resources will be monitored during and after project activities to ensure mitigative measures are working as expected. In addition, cultural resources which occur within 200 feet of project activities will be monitored during those activities to ensure they are not inadvertently impacted. If project activities do impact a site, then these actions will immediately cease. The damage to the site will be assessed, the site's status for eligibility to the National Register will be determined, consultation with appropriate agencies will be completed and further mitigation or protection actions will be carried out before project activities may proceed. The party responsible for damaging a known resource may be assessed the costs for mitigating the damage.

Historically significant structures will be inspected annually to ensure these resources are protected from incompatible modification, vandalism and natural degradation. Inspections of administrative buildings should be coordinated with District facility yearly condition surveys. Special use permits will be reviewed before issuance to ensure compliance actions have been completed. Other non-structural significant resources will be inspected annually when problems exist concerning non-project related impacts, vandalism or natural degradation. Results of these inspections will be annually reviewed to determine which resources need protective actions. Those which are discovered or reported to have undergone illegal excavation or collection will be reported to the Forest's Criminal Investigator for possible prosecution. Protective actions will be undertaken and guided by the following priorities:

1. Sites which are in continuous, freguent, or immediate danger from threatening agents and have undergone or may undergo substantial damage if not remedied.
2. Sites which have undergone substantial damage.
3. Newly discovered sites which may reasonably be expected to be damaged in the future (within the next ten years).

Note that these sites do not include those damaged by project activities (which have been previously discussed).

Several suitable cultural resources are and will continue to be interpreted for public enjoyment. These will include interpretive programs for Timberline Lodge, Multnomah Falls Lodge, Barlow Road and its associated sites, Clackamas Lake Ranger Station, Cloud Cap-Tilly Jane Recreation Area and the Old Columbia River Scenic Highway. Interpretation of cultural resources should be coordinated with Interpretive Services. Interpretation will generally be limited to brochures, self-guided trails, signs, slide-tape programs and those programs which can be substantially accomplished through volunteer efforts. High cost interpretive projects will only be undertaken for resources of high public interest. The Forest's interpretation of its cultural resources will gradually increase over time.

Engineering Program

Table FPA-10 ENGINEERING PROJECTS

ENGINEERING	$MM/year*
1) Design, survey, construction of Local Roads	3.029
2) Traffic Generated (TG) road maintenance (Co-op limitation)	1.477
3) FRP road maintenance - Arterial/Collector	.550
4) Arterial/Collector contrruction/reconstruction, Bridge replacement, etc. (Capital Investments)	1.004
5) FA&O	.365
6) Engineering Operations	.885
TOTAL	$ 7.310

5/ First ten years of Forest Plan

Fire Management Program

Table FPA-11 FIRE AND FUELS MANAGEMENT PROJECTS

FIRE MANAGEMENT	$MM/Year
Capital Investment Projects	----
Natural Fuel Treatment	54.0
TOTAL	54.0

Range Program Activities

The management and enhancement of the range resource involves a variety of activities to acheive desired objectives. each grazing allotment will have a proposed range improvement program that outlines priorities and projects according to need.

Table FPA-12 RANGE PROJECTS

PROJECT TYPE	PRIORITY
1. Update allotment plans, including re-analysis of forage capabilities.	1
2. Initiating range improvements for management and control. Includes fences and water improvements.	2
3. Seeding projects for forage improvement.	3

Geology Program Activities

Table FPA-13 GEOTECHNICAL SERVICES PROJECTS

Activity	Unit	Decade 1[1/] units/year
1 Quarries	projects	11 projects/year
2 Landslides (complex)	projects	4 projects/year
3 Landslides (simple)	projects	6 projects/year
4 Structures	projects	5 projects/year
5 Other	projects	3 projects/year

1/ The number of projects may be more in one year than another. The figures above are the average projects per year expected in the first decade of the Forest Plan.

Table FPA-14 GEOLOGY PROJECTS

Activity	Unit	Decade 1[2/] units/year
1 Prospecting	quarries	7 quarries/year
2 Timber Support	sales	9 sales/year
3 Planning	plans	3 plans/year
4 Other	projects	5 projects/year

2/ The figures above are the average units per year expected in the first decade of the Forest Plan.

Geologic Program Definitions

Capital Expenditures: Any expenditure for long term additions or betterments. These expenditures do not include those needed for operations.

The term capital expenditure is not to be confused with the Region 6, Engineering, Capital Investment Program. In the Geotechnical Services function, capital expenditures would be those which are invested for the construction and reconstruction of roads, structures (walls, bridges) and quarry development.

Geotechnical Services

Projects: This is the unit of measure for the timber activities that occur within the geotechnical services function: quarries, landslides, structures (walls, bridges), etc. Activities that are associated with a given project are planning, administration, lab work, exploration, design, development, and monitoring.

Geologic Support

Sales: This is the unit of measure of geologic support to timber. This support includes activities associated with timber sales such as field mapping, attendance at timber sale planning interdisciplinary meetings, assessment of the affected geologic environment and the effects of timber sale implementation on this geologic environment, recommendations for mitigation of adverse impacts and monitoring.

Geologic Prospecting

Quarries: This is the unit of measure for prospecting. New rock sources are needed to build roads and structures associated with timber sales and to maintain existing facilities. The rock must be of a certain quantity and quality within a given location. All those geologic activities associated with the preliminary assessment to plan for the exploration of rock resources would be included in this unit of measure.

Geologic Planning

Plans: This is the unit of measure for planning. This would include plans such as a subbasin plan in the Bull Run Watershed, the Forest Plan Environmental Impact Statement or the Forest Plan. The plans referred to in this heading include only those that are large in scope in terms of assessment level (EIS as opposed to an environmental assessment) or area of consideration (Forest as opposed to timber sale area). Activities included within the unit of measure "plan" are geologic inventories, geologic analysis, and monitoring.

Other Geology Program Activities

Projects: This is the unit of measurement for activities that are not associated with timber sales. This would include geologic input for ground water development, fihsery structures, hydroelectric developments, etc.

Minerals Program Activities

Table FPA-15 MINERALS ACTIVITIES

Activity	Unit	Decade 1[1/] Units/year
1 Leasable Minerals		
A. Geothermal		
a. Leases	applications	20 applications/year
b. Operations	plans	5 plans/year
B. Oil and Gas		
a. Leases	applications or simos.	20 applications/year
b. Operations	plans	0 plans/year
2 Locatable Minerals		
A. Mineral Potential	reports	2 reports/year
B. Operations	plans	2 plans/year
3 Salable Minerals	transactions	183 transactions/year
4 Planning	plans	3 plans/year

1/ The figures above are the average units per year expected in the first decade of the Forest Plan.

Leasable Minerals

Applications: All activities associated with lease applications including administration, environmental analysis, and monitoring.

Plans: All activities in response to plans of operation of leasable minerals. Activities include administration, environmental analysis, and monitoring. Operation plans would include exploration and/or development of oil and gas or geothermal energy.

Locatable Minerals

Reports: This is a unit of measurement for those activities associated with the evaluation of mineral properties. This may include existing mineral claims or mineral withdrawals. Activities would include field reconnaissance, research of land and mineral status, mapping, and economic evaluations.

Plans: This is the unit of measurement for those activities which respond to operation plans associated with locatable minerals. Activities include administration, environmental analysis, and monitoring.

Common Variety Minerals

Transactions: This is the unit of measurement for common variety mineral activities. These include all those individual transactions associated with the management of rock quarries including permits, compliance checks, and appraisals. These transactions are other than those associated with the timber sale contract.

Minerals Planning

Plans: This is the unit of measurement for planning. This would include plans such as subbasin plans in the Bull Run Watershed, Forest Plan EIS, or Forest Plan. These plans are large in scope in terms of the assessment level (EIS as opposed to an EA) or size of analysis area (total forest as opposed to a timber sale area). Activities included in this unit of measure would be mineral inventories, mineral analysis, and monitoring.

Table FPA-16 ALTERNATIVE E BUDGET FOR GEOLOGY/MINERALS PROGRAMS
($ per Decade)

Function	Minimum Level	Appropriated Funds	Monitoring	Timber Support
Geology		456,000	69,000	228,000
Minerals	1,200,000		72,000	
Geotech		3,066,000	184,000	

Table FPA-17 GEOLOGY/MINERALS FUNDING (EXCLUDING MONITORING)

Function	Operational Funds	Capital Expenditure[1/]
Geology	456,000)) 684,000	
Geology for Timber Support	228,000)	
Geotech Services		
Quarry Development		1,493,400)) 2,325,600
Roads and Structures	741,000	730,000)
Minerals		
Minimum Level	1,200,000	

1/ The term capital expenditure is not to be confused with the Region 6, Engineering, Capital Investment Program.

APPENDIX B

FOREST PLAN-APPENDIX B

TIMBER PROGRAM ACTIVITIES AND TIMBER SALE SCHEDULE

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FOREST PLAN APPENDIX B

TIMBER PROGRAM ACTIVITIES AND TIMBER SALE SCHEDULE

I. INTRODUCTION

This appendix displays how much timber, as projected by the Preferred Alternative in the DEIS, is likely to be offered during the first ten years of plan implementation. The FORPLAN linear programming model was used to derive the ASQ,Green volumes to be harvested from different categories of management areas. Part II of this section summarizes this modelling process.

Part III lists the various types of volume comprising the Timber Sale Program Quantity. Part IV address accountability for offering these volumes. Part V comprises the actual FORPLAN schedule by drainage, working group, and modelling proxy. This appendix concludes with Part VI, a listing the individual sales planned for fiscal years 1989 thru 1992.

II. SUMMARY OF THE MODELLING PROCESS

A. Management Areas and Standards Were Identified

The Management Areas were grouped into three catagories according to their type and degree of development. These categories (labeled A, B, C) represent broad differences in the use, intensity and objectives (goals) for each area.

CATEGORY A - MANAGEMENT AREAS:

Management activities in Category A Management Areas are designed to meet specific resource objectives other than timber production, and are often designed to result in near-natural conditions over time. These areas generally have no chargeable timber harvest. Timber salvage operations may may be permitted under certain conditions or restrictions. However, the total amount of salvage volume from these areas is not expected to exceed 1 MMBF/year.

Table FPB-1 MANAGEMENT AREAS - CATEGORY A

Designation	Area Name	Acres
A1	Bull Run Planning Unit	90,600
A2	Wilderness	185,300
A3	Research Natural Areas	1,300
A4	Special Interest areas	54,950
A5	Unroaded Recreation-No Timber Harvest	5,950
A6	Roaded Recreation-No timber Harvest	750
A8	Northern Spotted Owl Habitat Areas (SOHAs)	37,350
A9	Key Site Riparian Habitat	11,700
A10	Developed Recreation Sites	650
A11	Winter Recreation Areas	6,450
A12	Outdoor Education Areas	450
	Category A-subtotal	395,450

The acres in all of the Management Area tables shown in this Appendix have been adjusted for overlap. For example, the 12,650 acres of SOHAs (Management Area A8) occurring in Wilderness (Management Area A2) are counted as Wilderness in table FPB-1.

Relative to Management Area A1 (Bull Run Planning Unit): Scheduled chargeable timber harvesting occurs in the buffer zone as indicated in the existing Bull Run Planning Unit Final Environmental Impact Statement. However the physical watershed drainage is not subject to chargeable timber harvest.

CATEGORY B MANAGEMENT AREAS:

Mangement objectives in Category C Management Areas are designed to acheive specific resource objectives, as well as produce timber, while acheiving an objective of promoting a healthly, growing forest, through timber management.

In order to acheive the stated resource management objectives for specific Management Areas in this category and to meet ASQ goals, **chargeable timber harvest shall be scheduled in Category B Management Areas.** Compared to Category C Management Areas, these Management Areas have additional restrictions regarding rate of harvest, sizes of openings, and minimum rotations; i.e., how old a timber stand is before it is harvested). It is estimated these additional restrictions have the effect of reducing potential timber harvests by as much as two-thirds of that expected from Category C Management Areas. Site specific conditions may require more restricted timber harvest or no timber harvest activities to occur in particular geographic areas during a given decade, while in other areas more timber harvesting may occur in order to achieve the overall timber goal. The individual category B Management Areas are as follows:

Table FPB-2 MANAGEMENT AREAS - CATEGORY B

Designation	Area Name	Acres
B1	**Wild, Scenic & Recreation Rivers**	18,200
B2	**Scenic Viewsheds**	102,500
B3	**Roaded Recreation-Reduced Timber Harvest**	750
B4	**Pine/Oak Habitat**	14,850
B5	**Pileated Woodpecker/Pine Marten Habitat**	61,000
B6	**Special Emphasis Watersheds**	34,900
B7	**General Riparian Areas**	66,500
B8	**Earth Flows**	16,350
B9	**Wildlife/Visual Areas**	4,450
	Category B Subtotal	319,500

Relative to Management Area B1 (Wild, Scenic, and Recreational Rivers): The segments of these rivers classified as "wild" have no chargeable timber harvest. Scenic and Recreational segments allow some chargeable timber harvest.

CATEGORY C MANAGEMENT AREAS:

There is only one category C Management Area, designated C1. Chargeable timber harvest scheduled in this area as a dominate objective. Management activities are designed primarly to provide wood products needed to meet national demand, and to support local communities dependent on timber for smployment, while acheving the objective of promoting a healthy, growing forest mosaic through timber harvest. These objectives are acheived while concurrently being sensitive to, and managing for, the other forest resource uses and values including forage production and public recreation use. Timber levels are based on capability and suitability of the land in accordance with applicable laws and regulations.

Table FPB-3 MANAGEMENT AREA - CATEGORY C

Designation	Area Name	Acres
C1	**Timber Emphasis Areas**	344,450

Included in the 344,450 acres are 34,450 acres which are currently considered unsuitable for timber production. Because these are interspersed with the 310,000 acres of suitable timber land, it is not practical to assign them to other management areas.

B. Modelling Proxies Were Assigned to Each Management Area

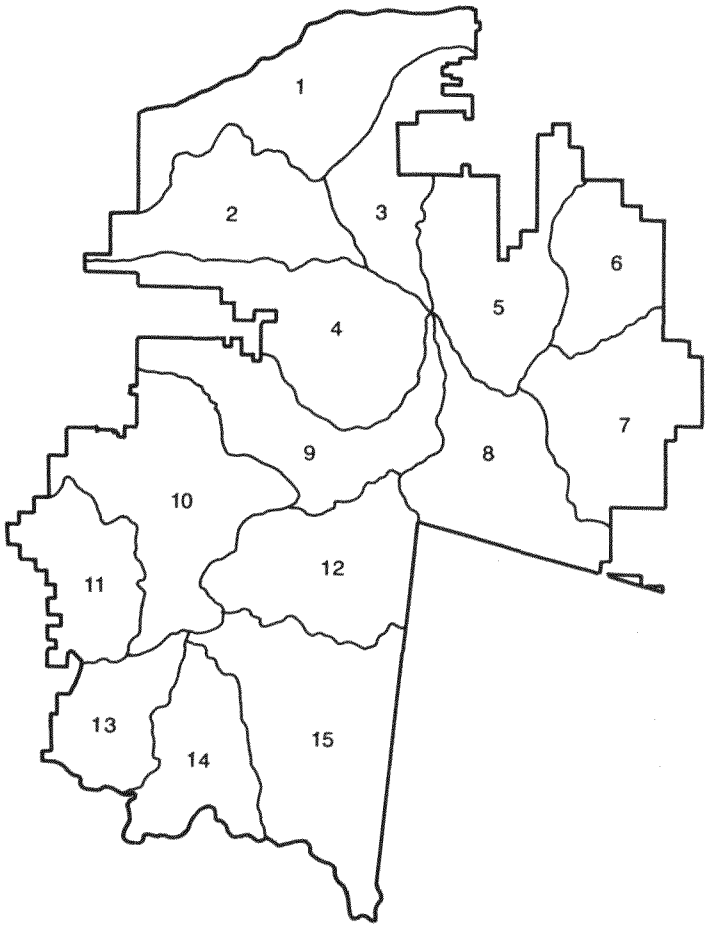
In order to meet the limitations of the FORPLAN model, each of the twenty one individual Management Areas were assigned to one of four harvest rates; 0%, 4%, 8%, 32% of area harvested per decade. Thus, the Category A Management Areas were assigned the 0 percent (no chargeable harvesting) proxy, the Category B Management Areas were assigned to either the 4 percent MAXIMUM harvest per decade proxy or the 8 percent MAXIMUM harvest per decade proxy, and the Category C (timber emphasis) Management Area was assigned the 32 percent MAXIMUM harvest per decade proxy. The proxies were "educated guesses" used for modelling purposes only; there are not standards. The standards for a particular Management Area control actual harvest rates. So, the proxies are not to control operations on the ground.

C. The Inventory of Suitable Timber Land, by Drainage, Was Determined

This resulted in the construction of a FORPLAN model reflecting the Preferred Alternative's Management Areas and corresponding harvest rate proxies timber inventories, by drainage. The schematic map on the following page represents the location of the 15 drainages, or watersheds, modelled in FORPLAN. This is followed by a map showing the general location of the Ranger Districts.

Map FPB-1

DRAINAGES

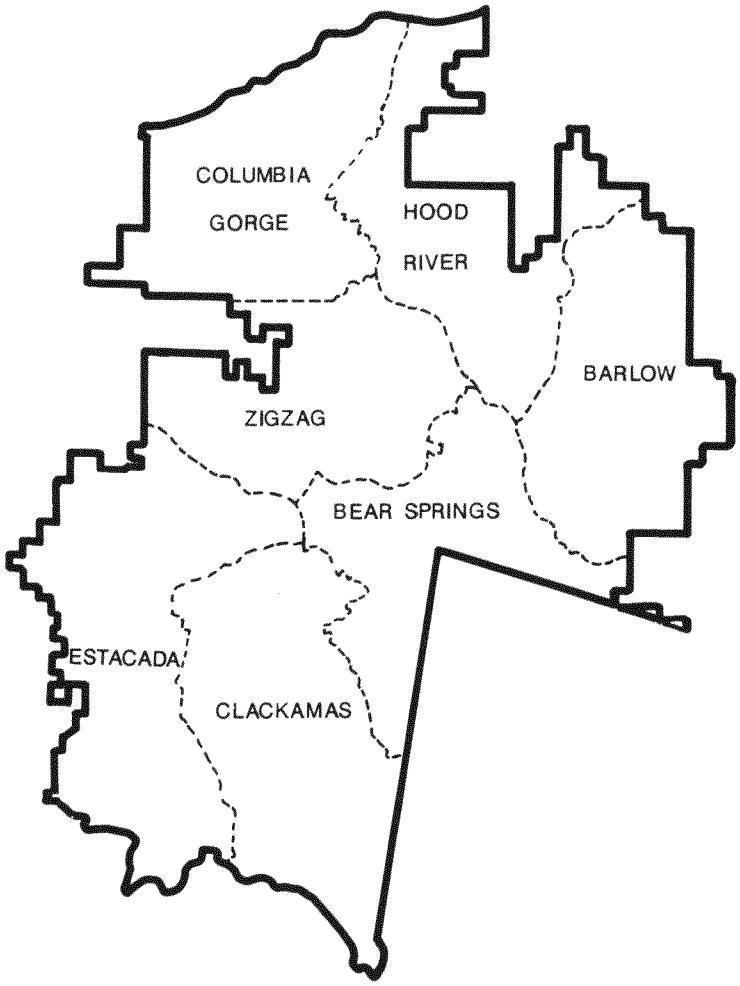


Drainage

1 Columbia River
2 Bull Run River
3 West Fork Hood River
4 Sandy River
5 East Fork Hood River
6 Miles Creeks
7 Badger/Jordan Creeks
8 White River
9 Salmon River
10 Lower Clackamas River
11 Fish Creek, Molalla River
12 Oak Grove Fork Clackamas River
13 Hot Springs Fork Collawash River
14 Collawash River
15 Upper Clackamas River, Warm Springs River, Breitenbush River, Olallie Lake

Map FPB-2

RANGER DISTRICTS



Comparision of the drainage and the Ranger District shows that most of the drainages are shared by two, or possibly three, District. This means that applicable Districts must coordinate their activities to insure that the percentage distribution of the Districts' suitable, (Category B plus C) acres among the drainages.

Table FPB-4 DISTRIBUTION OF SUITABLE ACRES [1/] BY DISTRICT AND DRAINAGE

Drainage # FORPLAN Name	DISTRICT Barlow	Bear Springs	Clackamas	Columbia Gorge	Estacada	Hood River	Zigzag
1 COLUMB				94.1%		5.5%	
2 BULRUN	Not Applicable: No Chargeable Harvesting						
3 WFHOOD				1.5%		98.5%	
4 SANDY*				40.8%		59.2%	
5 EFHOOD	11.7%					88.3%	
6 MILECK				94.1%		5.5%	
7 BADJOR	100.0%						
8 WHITE*		97.6%				5.5%	2.4%
9 SALMON		47.6%		94.1%			52.4%
10 LOCLAK			13.7%		80.2%		6.1%
11 FISHMM					100.0%		
12 OAKLAK		51.5%	48.5%				
13 HOTCOL					100.0%		
14 COLLAW			65.8%		34.2%		
15 UPCLAK		9.7%	90.3%				

[1/] Districts' suitable landbases vary considerably relative to the proportion of acres in Category B versus Category C, age class distributions, volumes per working group, etc. For this reason, this table cannot be used to precisely distribute drainage harvest schedules to Districts.

A FORPLAN Solution Was Obtained

Based on the objective of maximizing Present Net Value (PNV), FORPLAN produced a harvest schedule which reflected the inventory of suitable timber in each drainage and the management area uses and modelling proxies related to the Preferred Alternative.

The remainder of this Appendix addresses this schedule and how it may be implemented.

III. CHARGEABLE AND NONCHARGEABLE VOLUME FOR THE FIRST DECADE

The Timber Sale Program Quantity is divided into Allowable Sale Quantity, Other Sawtimber, and Submerchantable Volume, and each of these categories is further divided into various components. Table FPB-5 lists these various components and compares the timber to be offered under the Forest Plan with what has been sold historically in the past ten years.

Table FPB-5 VOLUME TO BE PRODUCED DURING THE FIRST DECADE

	MMBF[1]
I. **ALLOWABLE SALE QUANTITY (ASQ)** The allowable sale quantity is composed of those volumes resulting from the yield projections of FORPLAN. ASQ is obtained from lands designated as suitable for timber production under NFMA standards, and meets the utilization standards in the Regional Guide. When sold, the volume is called "chargeable", and is used to determine achievement of planned ASQ goals.	
A. **ASQ, Green**	2550
B. ASQ, Salvage	130
TOTAL ALLOWABLE SALE QUANTITY	2680
II. **OTHER SAWTIMBER** - Meets utilization standards in Regional Guide, but is not considered "Chargeable" against the planned ASQ goals.	
A. Sawtimber from lands designated unsuitable for timber production -this volume is estimated based on the incidental volume of timber that will be sold from lands that are not designated for timber production.	
1. Other Sawtimber, Green	210
2. Other Sawtimber, Salvage	30
3. Total From Unsuitable Lands	240
B. Dead Sawtimber from lands that are designated suitable for production, but not included in yield tables.	30
TOTAL OTHER SAWTIMBER	270
III. **SUBMERCHANTABLE VOLUME** - The estimated timber volume that does not meet the utilization standards in the Regional Guide, but which could be utilized products other than sawtimber. It is not considered "chargeable" against planned ASQ goals.	
A. Submerchantable, fuelwood	170
B. Submerchantable, other (including cull)	350
TOTAL SUBMERCHANTABLE	520
TOTAL NET MERCHANTABLE (Category I + II)	2950
TOTAL NONCHARGEABLE (Category II + III)	790
IV. **TIMBER SALE PROGRAM QUANTITY (I+II +III)** -Includes the ASQ and estimated additional volume (such as firewood) planned for sale during the first decade.	3470

[1] FORPLAN yields were computed in terms of cubic feet. These results were then converted to board feet by assuming that one cubic foot equalled 5.07 board feet, regardless of whether the cubic feet being converted came from a 15 inch or 25 inch tree. Since this assumption is subject to error, this may result the Forest's producing 528.6 MMCF, but not 2680 MMBF. Nevertheless, since mills report in terms of board instead of cubic feet, the schedules shown in the remainder of this Plan are only in terms of board feet.

IV. ACCOUNTABILITY

Barring revision or amendment of the Plan, the Forest will be held accountable on a ten year basis to offer the total chargeable volume of 2680 MMBF shown in the previous table. In addition, the Monitoring Plan requires periodic (usually annual) checks to insure that the accumulation of effects to date facilitate the ten-year forecast.

The Forest is not required to sell the nonchargeable portion of this total because of the uncertainty of availability. The nonchargeable figures are the Forest's best estimates of what will be available under normal conditions.

V. FORPLAN SCHEDULE BY DRAINAGE

Although accountability is only expected in terms of forest wide management areas, a logical place to begin is with the FORPLAN solution. This is in terms of ASQ, Green volume of 2,550 MMBF during the first decade, disaggregated by drainage and further subdivided by proxy. A rough correlation of proxy to Management Areas is as follows:

The "8% Access, 125 Year Rotation" proxy generally corresponds to Management Area B6, Special Emphasis Watersheds, and Management Area B2, Scenic Viewsheds, the partical retention visual quality objectives.

The "4% Access, 250 Year Rotation" proxy generally pertains to the remaining Category B Management Areas.

The "32% Access" proxy corresponds to Management Area C1, Timber Emphasis.

Table FPB-3 lists the FORPLAN solution pertaining to the Preferred Alternative. Shown is the green chargeable volume and acres, by working group, management area modelling proxy, and drainage, to be offered during the first decade.

Some variation is expected in the working group and 4%/8%/32% totals, but the amount offered by drainage should be within monitoring tolerances for the decade if adequate funding is obtained.

Drainages 1-15 were depicted in Figure FPB-1 of this Appendix.

The 4%, 8%, and 32% Management Area Proxies are discussed in general in Chapter II of the DEIS and in detail in Appendix B.

Note the totals for the decade:

> An ASQ, Green chargeable timber volume of 2550 MMBF resulting from timber harvesting of 57,764 acres.

Table FPB-6 FORPLAN SCHEDULE/VOLUMES-ACRES/DECADE

VOLUME IN MMBF (ASQ,GREEN, given 5.07 BF = 1 CF)

Drainage	4% Access (250 year rotation)				8% Access (125 Year Rotation)				32% Access (Rotation = 95% of CMAI)					GRAMD
	D. Fir	T. Fir	A.Species	Total	D. Fir	T. Fir	A.Species	Total	D. Fir	T. Fir	A.Species	Pine-Oak	Total	TOTAL
1	2	0	0	2	15	0	0	15	33	3	0	0	35	52
2														
3	12	0	0	12	1	6	0	7	57	29	0	0	86	105
4	30	1	0	31	23	0	0	23	87	9	0	0	96	150
5	26	0	0	26	32	9	0	41	43	71	0	0	113	180
6	0	5	4	9	0	0	4	4	0	0	62	24	86	99
7	0	13	0	13	0	0	2	2	0	34	134	127	295	310
8	0	12	7	19	0	40	0	40	0	24	193	0	218	277
9	0	13	0	13	0	12	0	12	61	19	0	0	80	105
10	29	0	0	29	28	9	0	37	63	3	0	0	66	132
11	16	0	0	16	1	0	0	1	147	18	0	0	165	182
12	30	0	0	30	20	15	0	35	194	40	0	0	233	298
13	13	0	0	13	6	0	0	6	102	8	0	0	110	129
14	18	0	0	18	1	0	0	1	88	39	0	0	128	147
15	31	0	0	31	27	2	0	29	250	50	24	0	324	384
Total	207	44	11	262	154	93	6	253	1,125	247	413	151	2,035	2,550

A C R E S

Drainage	4% Access (250 Year Rotation)				8% Access (125 Year Rotation)				32% Access (Rotation = 95% of CMAI)					GRAND
	D. Fir	T. Fir	A.Species	Total	D. Fir	T. Fir	A.Species	Total	D. Fir	T. Fir	A.Species	Pine-Oak	Total	TOTAL
1	30	0	0	30	1	0	0	1	657	51	0	0	708	739
2														
3	204	0	0	204	38	128	0	166	1,283	547	0	0	1,830	2,200
4	597	24	0	621	608	0	0	608	1,806	191	0	0	1,997	3,226
5	430	0	0	430	554	167	0	721	1,029	1,347	0	0	2,376	3,527
6	0	85	118	203	0	0	120	120	0	0	1,693	1,046	2,739	3,062
7	0	252	0	252	0	0	43	43	0	646	3,576	5,490	9,712	10,007
8	0	220	184	404	0	783	0	783	0	481	5,388	0	5,869	7,056
9	0	263	0	263	0	239	0	239	1,426	381	0	0	1,807	2,309
10	486	0	0	486	477	177	0	654	1,486	58	0	0	1,544	2,684
11	261	0	0	261	12	0	0	12	2,700	376	0	0	3,076	3,349
12	508	0	0	508	333	290	0	623	4,067	748	0	0	4,815	5,946
13	227	0	0	227	93	0	0	93	1,849	159	0	0	2,008	2,328
14	304	0	0	304	21	0	0	21	1,643	810	0	0	2,453	2,778
15	534	0	0	534	470	29	0	499	5,915	939	666	0	7,520	8,553
Total	3,581	844	302	4,727	2,607	1,813	163	4,583	23,861	6,734	11,323	6,536	48,454	57,764

Source: Pages 350-367 of FORPLAN run GRRPNV produced May 20, 1985.

D. Fir = Douglas Fir

T. Fir = True Fir

A.Species = Associated Species

Pine-Oak = Pine/Oak

VI. INDIVIDUAL SALES DURING FY89, FY90, FY91, AND FY92

Tables FPB-7a (FY89), FPB-7b (FY90), FPB-7c (FY91), and FPB-7b list the timber sales currently planned during the first four years of plan implementation. The locations of the "miscellaneous" have yet to be determined. However, a map showing the location of all of the other sales is available at the Supervisor's office. Maps showing individual District sales are also available for viewing at the applicable District offices.

Factors such as budgets, fire, timber markets, and insect epidemics are expected to necessitate changes in these lists. As these changes are made, these schedules will be updated and made available for public viewing at either the Supervisor's Office or at the applicable District office.

Table FPB-7a TIMBER SALES PLANNED FOR FY89
-ASQ Volume Only-

SALE NAME	MAP NUMBER	VOLUME MMBF	SILVICULTURAL PRACTICES						ROADS(mi)		LOGGING SYSTEMS		
			CC	SH	PR	FR	SV	CT	Const	Reconst	Ground Skid	One End Sutp	Full Sutp
Little Ball	9101	1.5	1.5	--	--	--	--	--	--	--	0.5	1.0	--
Joe	9102	2.5	2.0	--	--	--	--	0.5	--	--	0.6	1.9	--
Perry	9103	7.0	6.1	--	--	--	--	0.9	--	--	4.0	0.5	2.5
Hazlet	9104	5.6	0.7	4.9	--	--	--	--	--	--	5.6	--	--
Toss	9105	3.5	3.5	--	--	--	--	--	--	--	3.5	--	--
Broodtree Resell	9201	9.4	9.4	--	--	--	--	--	--	--	9.4	--	--
Mr. Ed Resell	9202	4.8	4.8	--	--	--	--	--	--	--	4.8	--	--
Pistol Resell	9203	9.0	8.1	0.4	0.5	--	--	--	--	--	--	0.9	8.1
Rockbutte Resell	9204	4.4	1.5	2.9	--	--	--	--	--	--	2.4	1.5	0.5
Toadstool	9205	6.0	3.6	--	--	2.4	--	--	2.0	1.0	--	6.0	--
Tuffy	9206	5.2	5.2	--	--	--	--	--	1.0	--	--	--	5.2
Si	9301	14.7	14.6	0.1	--	--	--	--	--	--	4.2	9.6	0.9
Multnomah	9302	9.0	--	9.0	--	--	--	--	--	--	5.7	--	3.3
Cubit	9303	2.4	0.7	1.7	--	--	--	--	--	--	1.9	--	0.5
Jaybird	9304	12.0	12.0	--	--	--	--	--	--	--	0.9	4.7	6.4
Hunder	9305	11.0	10.8	0.2	--	--	--	--	--	--	3.1	4.5	3.4
Jade	9306	7.4	7.4	--	--	--	--	--	--	--	4.1	3.3	--
Lostine	9307	8.5	1.0	7.5	--	--	--	--	--	--	8.5	--	--
Redlands	9308	9.4	8.4	1.0	--	--	--	--	--	--	1.3	8.1	--
Bear	9309	10.1	1.0	9.1	--	--	--	--	--	--	7.4	--	2.7
Swell	9310	6.4	1.2	5.2	--	--	--	--	--	--	1.4	--	5.0
Slug	9401	4.3	4.3	--	--	--	--	--	1.0	--	--	2.3	2.0
Ancient	9402	2.5	2.5	--	--	--	--	--	1.0	--	--	2.5	--
North Buffer	9403	4.5	4.5	--	--	--	--	--	--	1.0	--	2.5	2.0
Blondy	9501	3.6	--	3.6	--	--	--	--	3.0	--	3.6	--	--
Sinker	9502	2.4	--	--	--	--	--	2.4	--	3.7	--	2.4	--
Crowfoot	9503	7.7	7.7	--	--	--	--	--	0.5	--	--	6.2	1.5
Thrasher	9504	5.8	--	--	--	--	--	5.8	--	--	5.8	--	--
Thunderfly	9505	4.7	4.7	--	--	--	--	--	--	--	0.5	3.2	1.0
Pika	9506	9.4	9.4	--	--	--	--	--	--	--	--	9.4	--
Posy	9507	8.1	7.2	--	0.9	--	--	--	--	--	--	8.1	--
Badger	9508	14.8	14.8	--	--	--	--	--	--	--	11.8	3.0	--
Nutria	9601	2.0	0.8	1.0	--	--	--	0.2	--	3.3	--	2.0	--
Rook	9602	6.9	5.1	1.4	--	0.4	--	--	3.5	2.0	0.3	6.2	0.4
Pillory	9603	3.0	3.0	--	--	--	--	--	0.9	1.2	0.3	2.7	--
Pyre	9604	3.2	3.2	--	--	--	--	--	--	--	3.1	0.1	--
Natchez	9605	3.2	3.2	--	--	--	--	--	1.0	--	3.2	--	--
Sollert	9606	1.0	1.0	--	--	--	--	--	1.5	--	1.0	--	--
Wilder	9901	2.3	1.4	--	--	--	--	0.9	1.5	--	1.4	0.9	--
Backside	9902	2.0	2.0	--	--	--	--	--	0.5	--	1.0	1.0	--
Circle	9903	2.0	2.0	--	--	--	--	--	--	--	1.0	1.0	--
Enola	9904	3.5	2.5	--	--	--	--	1.0	1.1	4.0	0.1	3.4	--
Pepper	9905	4.8	4.8	--	--	--	--	--	0.8	--	4.8	--	--
Miscellaneous Sale & Salvage		16.5											
FY 89 Total		268.0											

Table FPB-7b TIMBER SALES PLANNED FOR FY90
-ASQ Volume Only-

SALE NAME	MAP NUMBER	VOLUME MMBF	SILVICULTURAL PRACTIES						ROADS(mi)		LOGGING SYSTEMS		
			CC	SH	PR	PR	SV	CT	Const	Reconst	Ground Skid	One End Sutp	Full Sutp
Rebelious	0101	3.6	3.6	--	--	--	--	--	--	--	3.6	--	--
Rail	0102	5.1	5.1	--	--	--	--	--	--	--	2.0	3.1	--
Sting	0103	5.7	5.3	--	--	--	--	0.4	--	--	5.7	--	--
Aldermill	0104	4.0	3.6	--	--	--	--	0.4	--	--	1.0	2.0	1.0
Jumper	0105	1.0	--	0.5	--	--	--	0.5	--	--	1.0	--	--
Pebble	0106	1.0	--	--	--	--	--	1.0	--	--	1.0	--	--
Dry Creek	0201	1.0	--	--	--	--	--	1.0	--	--	1.0	--	--
Coristle	0202	8.0	8.0	--	--	--	--	--	2.5	--	--	--	8.0
Jake	0203	6.0	--	--	--	6.0	--	--	--	--	6.0	--	--
Jigsaw	0204	7.0	4.9	2.1	--	--	--	--	1.5	--	7.0	--	--
Little knoll	0205	6.0	6.0	--	--	--	--	--	2.0	--	6.0	--	--
Lostone	0206	2.5	2.1	0.4	--	--	--	--	1.5	--	0.6	1.9	--
Shetland	0207	2.0	--	--	2.0	--	--	--	--	--	2.0	--	--
Sliver	0208	5.0	--	4.0	--	--	1.0	--	2.0	1.0	5.0	--	--
Caraway	0301	9.5	8.3	1.2	--	--	--	--	2.0	--	6.6	2.5	0.4
Regyp	0302	7.4	7.3	0.1	--	--	--	--	--	--	--	4.5	2.9
Blue	0303	9.3	2.4	6.9	--	--	--	--	0.8	0.9	7.3	--	2.0
Rover	0304	3.2	2.6	0.6	--	--	--	--	0.2	0.1	1.5	1.7	--
Alder	0305	6.8	6.8	--	--	--	--	--	0.4	0.3	0.9	4.6	1.3
Redy	0306	5.7	4.5	1.2	--	--	--	--	1.0	--	2.5	1.0	2.2
Bellows	0307	6.5	0.4	6.1	--	--	--	--	0.3	--	4.2	1.0	1.3
Snuffy	0308	5.7	0.3	5.2	--	--	0.2	--	1.6	0.5	2.4	--	3.3
Brooks	0309	7.2	4.6	2.6	--	--	--	--	1.5	--	7.2	--	--
Lava	0310	7.0	7.0	--	--	--	--	--	1.2	0.8	2.2	4.5	0.3
Dragoon	0311	9.8	9.8	--	--	--	--	--	1.6	1.2	4.9	3.5	1.4
Westrun	0312	9.7	8.2	1.5	--	--	--	--	3.0	3.8	0.7	--	9.0
Cowgirl	0401	4.0	3.0	--	--	--	--	1.0	--	0.8	1.0	2.0	1.0
Limpy	0402	1.7	1.7	--	--	--	--	--	0.5	--	--	1.7	--
Fly	0403	4.6	4.6	--	--	--	--	--	--	0.4	--	4.6	--
Janus	0501	9.3	9.3	--	--	--	--	--	4.0	--	--	7.4	1.9
Rita	0502	9.5	8.1	--	--	1.4	--	--	--	--	--	6.7	2.8
Humper	0503	10.0	7.5	2.5	--	--	--	--	0.3	--	--	8.0	2.0
Rott	0504	9.5	9.5	--	--	--	--	--	1.0	--	--	8.2	1.3
Schreiner	0505	0.4	0.4	--	--	--	--	--	0.2	--	--	3.2	0.8
Boomer	0506	1.6	1.6	--	--	--	--	--	1.5	--	--	0.8	0.8
Critter	0507	8.0	8.0	--	--	--	--	--	--	--	--	4.8	3.2
Impasse	0508	1.4	1.4	--	--	--	--	--	0.4	--	0.4	1.0	--
Newt	0601	1.6	1.6	--	--	--	--	--	0.8	--	1.3	0.3	--
Marble	0602	1.1	1.1	--	--	--	--	--	0.5	--	--	1.1	--
Tower	0603	3.2	3.2	--	--	--	--	--	--	1.0	3.2	--	--
Quiver & 2	0604	4.7	3.3	1.4	--	--	--	--	--	1.3	3.4	1.3	--
Rig	0605	2.8	2.8	--	--	--	--	--	2.4	1.0	2.0	0.8	--
Snap	0606	5.2	5.2	--	--	--	--	--	--	1.0	--	5.2	--
Snowshoe	0901	4.8	4.8	--	--	--	--	--	0.3	--	2.5	2.3	--
Ocelot	0902	2.0	1.0	--	--	--	--	1.0	1.0	--	1.5	0.5	--
Olive	0903	3.0	2.0	--	--	--	--	1.0	0.7	--	2.0	1.0	--
Buzzard	0904	4.0	4.0	--	--	--	--	--	0.5	--	3.0	1.0	--
Miscellaneous Sales & Salvage		26.3											
FY 90 Total		268.0											

Table FPB-7c TIMBER SALES PLANNED FOR FY91
-ASQ Volume Only-

SALE NAME	MAP NUMBER	VOLUME MMBF	SILVICULTURAL PRACTIES						ROADS(mi)		LOGGING SYSTEMS		
			CC	SH	PR	FR	SV	CT	Const	Reconst	Ground Skid	One End Sutp	Full Sutp
Second Base	1101	8.7	8.7	--	--	--	--	--	--	--	8.7	--	--
Bulotoo	1102	3.0	2.7	--	--	--	--	0.3	--	--	--	3.0	--
Station	1103	2.0	1.6	--	--	--	--	0.4	--	--	2.0	--	--
Inn	1104	1.0	0.4	--	--	--	--	0.6	--	--	1.0	--	--
Bell	1105	1.7	1.7	--	--	--	--	--	--	--	1.2	0.5	--
Butte	1201	8.0	8.0	--	--	--	--	--	1.0	--	--	--	8.0
Clackatim	1202	3.0	--	--	3.0	--	--	--	--	--	3.0	--	--
Dungaree	1203	6.9	6.9	--	--	--	--	--	1.0	1.0	6.9	--	--
Glove	1204	5.6	--	3.9	--	1.7	--	--	--	3.0	5.6	--	--
Lippy	1205	4.0	4.0	--	--	--	--	--	--	--	4.0	--	--
Matterhorn	1206	10.0	10.0	--	--	--	--	--	3.0	--	--	--	10.0
Vine	1301	11.5	3.5	8.0	--	--	--	--	2.0	2.0	--	3.5	8.0
Tyler	1302	15.9	5.2	10.7	--	--	--	--	--	--	4.0	4.0	7.9
Mash	1303	4.9	1.2	3.7	--	--	--	--	1.0	1.0	1.2	3.7	--
Peppermint	1304	9.8	9.8	--	--	--	--	--	1.5	--	--	4.0	5.8
Cork	1305	5.6	--	5.6	--	--	--	--	1.4	--	--	--	5.6
Finn	1306	5.0	3.0	2.0	--	--	--	--	1.2	--	--	1.3	3.7
March	1401	2.0	2.0	--	--	--	--	--	--	2.0	--	2.0	--
Homestead	1402	7.0	7.0	--	--	--	--	--	--	--	--	5.0	2.0
Knife	1501	4.9	4.9	--	--	--	--	--	--	--	--	3.5	1.4
Barecat	1502	9.5	9.5	--	--	--	--	--	0.5	0.5	1.9	5.7	1.9
Bridle	1503	8.9	8.9	--	--	--	--	--	--	--	--	7.2	1.7
Ridgeline	1504	3.4	3.4	--	--	--	--	--	0.2	--	--	2.7	0.7
Feline	1505	10.0	10.0	--	--	--	--	--	--	--	5.0	4.0	1.0
Trigger	1506	9.5	9.5	--	--	--	--	--	--	--	--	8.6	0.9
Chuker	1601	3.9	--	--	--	3.9	--	--	--	2.6	3.9	--	--
Dumm	1602	2.9	2.9	--	--	--	--	--	0.2	0.5	2.1	0.8	--
Harpoon	1603	1.9	1.9	--	--	--	--	--	1.2	--	1.9	--	--
Yucca	1604	2.8	2.8	--	--	--	--	--	1.3	--	2.3	0.5	--
Hardpan	1605	1.6	--	1.6	--	--	--	--	0.3	0.5	1.6	--	--
Span	1606	4.0	4.0	--	--	--	--	--	0.1	0.2	--	4.0	--
Puma	1901	7.6	7.6	--	--	--	--	--	4.1	0.5	3.4	4.2	--
Calypso	1902	3.0	3.0	--	--	--	--	--	0.3	--	--	3.0	--
Lolo 2	1903	3.0	3.0	--	--	--	--	--	--	0.4	--	3.0	--
Miscellaneous													
Sales & Salvage		67.5											
FY 91 Total		260.0											

Table FPB-7d TIMBER SALES PLANNED FOR FY92
-ASQ Volume Only-

SALE NAME	MAP NUMBER	VOLUME MMBF	SILVICULTURAL PRACTIES						ROADS(mi)		LOGGING SYSTEMS		
			CC	SH	PR	FR	SV	CT	Const	Reconst	Ground Skid	One End Sutp	Full Sutp
Penjor	2101	2.0	2.0	--	--	--	--	--	--	--	--	2.0	--
Lost Creek	2102	5.2	5.2	--	--	--	--	--	--	--	5.2	--	--
Lowland	2103	2.4	1.4	1.0	--	--	--	--	--	--	2.4	--	--
Eastjord	2104	2.7	2.5	--	--	--	--	0.2	--	--	2.7	--	--
Hidden	2105	3.0	--	3.0	--	--	--	--	--	--	3.0	--	--
Handy	2201	1.5	--	--	1.5	--	--	--	1.0	--	1.5	--	--
Ulcer	2202	6.0	6.0	--	--	--	--	--	1.5	--	--	6.0	--
Whirlygig	2203	8.0	8.0	--	--	--	--	--	--	--	--	--	8.0
IA L70 Z21	2204	23.0	13.8	4.6	--	4.6	--	--	--	2.0	23.0	--	--
Camel	2301	5.7	3.3	2.4	--	--	--	--	0.3	--	1.5	4.2	--
Smithy	2302	11.3	4.5	6.8	--	--	--	--	1.7	1.0	--	4.5	6.8
Legume	2303	8.4	--	8.4	--	--	--	--	--	--	3.4	--	5.0
Musket	2304	10.0	7.0	3.0	--	--	--	--	1.1	1.7	--	4.0	6.0
Vega	2305	5.0	1.0	4.0	--	--	--	--	0.7	--	--	1.5	3.5
Urses	2306	5.0	2.0	3.0	--	--	--	--	0.5	1.2	2.0	3.0	--
County	2307	6.0	--	6.0	--	--	--	--	1.5	2.0	6.0	--	--
Quest	2308	9.0	3.6	5.4	--	--	--	--	1.2	3.0	--	3.6	5.4
Hoag	2309	9.6	2.4	7.2	--	--	--	--	1.5	1.0	--	2.4	7.2
Loop	2401	3.9	2.3	--	--	--	--	1.6	--	3.0	--	3.9	--
Horsetail	2402	2.0	2.0	--	--	--	--	--	0.3	0.4	1.1	1.1	1.0
Half	2403	3.0	3.0	--	--	--	--	--	0.3	--	--	2.0	1.0
Tobasco	2501	9.7	9.7	--	--	--	--	--	0.1	--	--	6.8	2.9
Line	2502	10.0	10.0	--	--	--	--	--	2.0	--	--	9.0	1.0
Ambrosia	2503	4.0	--	--	--	4.0	--	--	--	0.5	--	3.2	0.8
Trident	2504	3.1	--	3.1	--	--	--	--	0.5	1.0	--	2.3	0.8
Candy	2505	8.0	8.0	--	--	--	--	--	1.0	--	--	7.2	0.8
Jonah	2506	2.0	--	--	--	2.0	--	--	--	--	--	1.6	0.4
Bittern	2507	1.5	--	1.5	--	--	--	--	0.5	--	--	0.4	1.1
Camas	2601	3.0	3.0	--	--	--	--	--	--	3.0	3.0	--	--
Gorget	2602	4.3	4.3	--	--	--	--	--	2.3	0.5	--	4.3	--
Spear	2603	1.6	--	--	--	1.6	--	--	--	2.4	1.6	--	--
Haunt	2604	3.8	3.8	--	--	--	--	--	--	--	--	--	3.8
Anchor	2605	4.1	4.1	--	--	--	--	--	1.0	0.8	3.0	1.1	--
Wolf	2901	3.0	2.0	0.6	--	--	--	0.4	1.0	0.5	1.5	1.5	--
Alpine	2902	1.0	1.0	--	--	--	--	--	--	--	--	1.0	--
Third	2903	3.0	--	--	--	--	--	0.3	--	--	3.0	--	--
Robin	2904	5.0	5.0	--	--	--	--	--	--	--	--	1.0	4.0
Miscellaneous Sales & Salvage		60.2											
FY 92 Total		260.0											

APPENDIX C

FOREST PLAN APPENDIX C

WILDERNESS PLANS

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FOREST PLAN APPENDIX C

WILDERNESS ACTION PLANS

INTRODUCTION

The management direction for **Wilderness** is included in the management area prescriptions for the Wilderness Management Area (see Wilderness Management Area Prescriptions in Chapter Four of the Forest Plan). The action plans in this appendix provide additional information specific to each Wilderness to be used in implementing the management area direction. Specific information in the action plans is subordinate to the overall management direction in the Wilderness Management Area Prescriptions.

BADGER CREEK WILDERNESS
ACTION PLAN

FACILITIES AND STRUCTURES

Management Situation

Two toilets located within the Wilderness on the north shore of Badger Lake are in poor condition and do not conform with the intent of Wilderness.

Management Actions

1. Remove the toilets as soon as practicable.

WILDERNESS CARRYING CAPACITY

Management Situation

The newly-established Badger Creek Wilderness is the least-heavily used Wilderness on the Mt. Hood National Forest. Most recreation use areas appear to be within the Limits of Acceptable Change standards.

The estimated carrying capacity for the Badger Creek Wilderness area is 19,155 Recreation Visitor Days (RVD's) per year. This estimate is based on estimated capacity coefficients of 0.75 RVD/Acre/Year for the Primitive Trailed WROS zone and 1.0 RVD/Acre/Year for the Semi-Primitive Trailed WROS zone.

The boundary of the Wilderness as designated includes a portion of Badger Lake which has historically been used at higher levels than would be be acceptable for Wilderness. Badger Lake is currently accessed by road.

Information Needs

Collect information on the amount and type of wilderness recreation use that originates from Badger Lake. Consider alternative methods of dispersing use in the vicinity of Badger Lake to protect the wilderness resource.

Management Actions

None at this time.

TRAILS

Management Situation

There is a need to increase the number of loop trails within the Wilderness, especially for day-use visitors.

Management Actions

1. Construct a day-use loop trail connecting the Douglas Cabin Trail (#470) and the Gordon Butte Trail (#470A). The loop trail will be located along the Wilderness boundary for approximately 1/2 mile.

2. Complete construction of the Badger Rim (Davidson) Trail; providing a 7-mile (2-day) loop originating from Badger Crossing Campground and connecting with the Douglas Cabin Trail (#470).

BULL OF THE WOODS WILDERNESS
ACTION PLAN

FACILITIES AND STRUCTURES

Management Situation

There are facilities within the Bull of the Woods Wilderness that are nonconforming with the Wilderness concept.

Management Actions

1. Remove existing improvements, structures, and facilities not essential to the protection of the Wilderness resource, or are historically significant.

2. All other non-conforming structures will be evaluated for historic and and cultural significance (as outlined in the Wilderness Prescription) and, if applicable, removed. This includes facilities that are not permitted, no longer usable, serviceable, or unsafe and facilities that attract overuse of an area. These facilites, so evaluated, will not be maintained, nor will others be allwoed to maintain them.

LIMITS OF ACCEPTABLE CHANGE

Management Situation

The estimated carrying capacity for the Bull of the Woods Wilderness area is 20,530 Recreation Visitor Days (RVD's) per year. This estimate is based on estimated capacity coefficients of 0.75 RVD/Acre/Year for the Primitive Trailed WROS zone and 1.0 RVD/Acre/Year for the Semi-Primitive Trailed WROS zone.

Specific areas in the Wilderness are receiving very heavy use which may be in excess of wilderness carrying capacity as evidenced by increasing resource damage such as soil compaction, trampling of vegetation, loss of ground cover, cutting of green vegetation, increasing unacceptable accumulations of human, dog, and packstock feces, lower water quality, and cutting of snags. These resource effects are especially severe in the fragile ecosystems adjacent to the many small lakes within the area and at higher elevations. It is also evident that opportunities for solitude, challenge, and primitive recreation are declining in specific areas.

These impacted areas are:

Twin Lakes
Silver King Lake
Pansy Lake
Big Slide Lake
Lake Lenore
Bull of the Woods lookout
Welcome Lakes

Management Actions (capacity/overuse)

The following corrective actions are designed to reduce the impact of overuse and restore the wilderness character of specific areas within the Wilderness. Some of these actions may be currently in effect, others are planned for the future. All actions will be implemented during the first decade after the approval of the Forest Plan.

It is expected that as pre-trip safety, "no trace'" and wilderness ethic education efforts increase, the need for specific on-site resource protection messages to deal with currently identified problems will decrease. When, and if, monitoring practices indicate the desired objectives have been acheived or are no longer desirable; many of these objectives will be re-assessed.

Wilderness-Wide Actions

1. Determine and manage for a level of visitor use that will preserve and restore the Wilderness resource and opportunities for Wilderness recreation.

2. Unless otherwise permitted, prohibit camping within 100 horizontal feet of the high water mark of lakes.

3. Unless otherwise permitted, prohibit building, maintaining, attending, or using a fire, campfire, or stove within 100 horizontal feet of the high water mark of lakes.

4. Unless otherwise prohibited, permit overnight stays by visitors under special-use permit (outfitter-guide operations).

5. Prohibit or discourage tent sites and fires in open, or meadow areas (i.e. campsites should be under cover of trees).

6. Prohibit Grazing of recreational stock at all lakes in the Wilderness Wilderness. Prohibit stock from being tethered within 100 horizontal feet of lakes, or any designated campsite.

7. Require dogs and other domestic pets to be on leases at all times, or prohibit in Wilderness if situation with conflicts from dogs and dog feces becomes worse.

Site-Specific Actions

Twin Lakes

1. Restrict overnight stays by outfitter-guides, and others under permit, to sites designated in the permit.

2. Replace existing "Wallowa" toilet with similar type (or composting type) and maintain in place.

(Management Actions, capacity/overuse con't)

Silver King Lake

1. Install "Wallowa" or composting type toilet and maintain in place.

Pansy Lake

1. Maintain existing "Wallowa" toilet in place.

Big Slide Lake

1. Prohibit overnight stays by outfitter-guides, and others under permit.

2. Install "Wallowa" or composting type toilet and maintain in place.

Lake Lenore

1. Restrict camping to designated sites.

2. Restrict overnight stays by outfitter-guides, and others under permit, to sites designated in permit.

3. Maintain existing toilet, and relpace with "Wallowa" or composting type when present one deteriorates.

Bull of the Woods Lookout

1. Restrict area to day-use only.

   Maintain existing toilet, and replace with "Wallowa" or composting type when present one deteriorates.

Welcome Lakes

1. Restrict all camping to designated sites.

2. Prohibit overnight stays by outfitter-guides, and others under permit.

Battle Creek Shelter

1. Restrict camping to designated sites.

2. Prohibit overnight stays by outfitter-guides, and others under permit.

3. Install "Wallowa" or composting type toilet and maintain.

TRAILS

Management Situation (trails)

Resource damage is occurring from utilization of some improperly designed and located trails and trailheads.

Management Actions (Trails)

1. Provide and maintain a trail system, and appropriate signing, to a standard that will meet management needs for protecting resources and distributing visitor use, eliminate duplication of routes, and minimize maintenance costs.

2. Relocate and/or reconstruct the following trails or portions thereof to meet the above objective:

   Mother Lode Trail #558
   Dickey Creek Trail #553
   Geronimo Trail #557
   Whetstone Trail #546

3. Relocate and/or reconstruct the following trailheads to provide adequate parking, signing and access:

   Bull of the Woods (#551)
   Dickey Creek (#553)
   Elk Lake Creek (#559)

FISHERIES/RIPARIAN

Management Situation

Eleven lakes and 15 to 20 miles of streams provide habitat for resident trout. Major lakes include Twin, Welcome, Slide, and Pansy. All of the lakes are likely to have been stocked with trout within the last 50 years. Today, six of the lakes are stocked annually. The primary species is Eastern Brook Trout. Five of the lakes rely on natural reproduction of brook trout.

Major streams include Elk Lake Creek, Battle Creek, Dickey Creek, and the Hot Springs of the Collowash River. Anadromous access to portions of these streams, within the Wilderness, are blocked by natural obstructions. However, these streams support "wild" populations of rainbow and cutthroat trout. Additionally, they provide high quality water to downstream areas which provide anadromous habitat (lower Elk Lake Creek, Collowash River, lower Dickey Creek, and the Hot Springs Fork of the Collowash River.

A variety of riparian areas are found adjacent to the streams and lakes. Exceptionally diverse, high-quality riparian habitat areas, associated with Welcome Lakes, Twin Lakes, and a portion of the Dickey Creek floodplain, are identified for special management emphasis as Key Site Riparian Areas. A number of small wetlands, seeps, and springs are likely present. No inventories are available, however, to locate or describe most of these areas.

Relatively high levels of recreation use occurring within the riparian areas of the lakes has reportedly caused local reductions in habitat quality (loss of vegetation, soil compaction, etc.). No recent assessments of riparian condition at the lakes are available to further describe this situation.

Information Needs (fisheries/riparian)

1. Complete riparian area and aquatic habitat assessments for all lakes and perennial streams.

2. Identify and characterize all wetland and seep/spring areas greater than 1/2 acre.

3. Develop better estimates of legal trout habitat capability in streams and lakes. Compare with current use, harvest, and stocking to determine if additional Forest Service or Oregon Department of Fish and Wildlife management actions are needed.

4. Identify and prioritize sites/areas where reductions in riparian/aquatic habitat condition merit rehabilitation or special management consideration.

Management Actions (fisheries/riparian)

1. Current riparian and aquatic habitat assessments will be conducted to guide informed management.

2. Continue on-going fisheries management activities at lakes. Continue to monitor these activities to ensure maximum compatibility with overall management objectives.

3. Consider designation of upper Dickey Creek and Elk Lake/Battle Creek as wild trout management areas. Develop appropriate management objectives consistent with wilderness management goals.

4. Develop appropriate Information and Education measures to enhance understanding and enjoyment of riparian areas and aquatic habitats.

COLUMBIA WILDERNESS
ACTION PLAN

FACILITIES AND STRUCTURES

Management Situation (facilities)

There are facilities within the Columbia Wilderness that are nonconforming with the Wilderness concept. The types of facilities are listed below:

* trail shelters.

* A diversion dam at Rainy Lake.

* Steel fire rings at camping areas.

Information Needs (facilities)

1. Determine the effects of a surface level drop on Rainy Lake, the fishery resource, and the surrounding environment.

Management Actions (facilities)

1. Remove existing improvements, structures, and facilities not essential to the protection of the Wilderness resource, or of historical significance.

2. All other non-conforming structures will be evaluated for historic and Cultural significance (as outlined in the Wilderness prescription) and, if applicable, removed. This includes facilities that are not permitted, no longer useable, serviceable, or unsafe, and facilities that attract over use of an area. these facilities, so evaluated, will not be maintained, nor will others be allowed to maintain them.

3. Dependent upon the evaluation:

   * Allow the diversion dam on Rainy Lake to deteriorate; causing the lake to return to its natural level, and restore the area to a natural condition.

   -or-

   * Rebuild the diversion dam on Rainy lake.

WILDERNESS CARRYING CAPACITY

Management Situation (Capacity)

Specific areas in the Wilderness are receiving use in excess of capacity as evidenced by:

1. Increasing resource damage such as soil compaction, trampling of vegetation, loss of ground cover, cutting green vegetation, declining water quality, and snag removal.

2. Opportunities for solitude, challenge, and primitive recreation are declining during holidays and weekends.

3. Increasing accumulations of human and dog feces.

Impacted areas include:

1. Eagle Creek Trail (#440) from the Wilderness boundary to the junction with the Eagle-Tanner Trail (#433).

2. Wahtum Lake - to a distance of 200 feet from the lake shore.

Management Actions (capacity)

The following corrective actions are designed to reduce the impact of overuse and restore the wilderness character of specific areas within the Wilderness. Some of these actions may be currently in effect or planned. All should be implemented during the first decade after the approval of the Forest Plan. It is expected that as pre-trip safety, "no trace'" and wilderness ethic education efforts increase, the need for specific on-site resource protection messages to deal with currently identified problems will decrease. When, and if, monitoring practices indicate restoration to the desired objectives, many of these objectives will be re-assessed and phased out.

Implement the following corrective actions by 1988:

1. Eagle Creek Trail (#440) from the Wilderness boundary to the junction of Eagle-Tanner Trail (#433).

Prohibit building, maintaining, attending, or using a fire, campfire, or stove fire, except for a pressurized liquid or gas stove from June 1-September 15.

Prohibit overnight camping by visitors under Special Use Permit.

Prohibit dogs, from the trail and surrounding area. Seeing-eye dogs and other pets utilized by handicapped and dogs used in rescue are exempted.

Revegetate impacted areas.

(Management Actions-capacity con't)

2. Wahtum Lake

Prohibit campfires within 200 feet of the lake.

Restrict camping to designated sites, and maintain only designated firerings.

Rehabilitate the Developed Recreation site at the trial head, and the trailhead; including revegetation of the impacted area, and appropriate signing.

Reconstruct the trail from the trailhead down to Wahtum Lake and obliterate and revegetate all unauthorized and non-conforming trails.

Close and rehabilitate portions of road #2030-660; as per the Forest Plan (Refer to Management Area Prescriptions and Chapter II of DEIS). Sign and post the closed portions of the road; as per regulations and Management Area Prescriptions (see also transportation actions pg. 4)

3. Pacific Crest Trail

Management Situation (PCT)

The junction of the Eagle Creek Trail #440 and the Pacific Crest Trail #2000 at Wahtum Lake is receiving visitor use in excess of capacity.

Management Actions (PCT)

Reroute the Pacific Crest Trail away from Wahtum Lake to disperse visitors and protect Wilderness resources. Rehabilitate, and revegetate unwanted and non-conforming segments.

FIRE AND FUELS MANAGEMENT

Management Situation (fire & fuels)

The unnatural exclusion of fire from the Benson Plateau has allowed the encroachment of woodlands into the meadow and the accumulation of forest fuels.

Information Needs (fire & fuels)

Evaluate the need for prescribed fire at Benson Plateau to achieve wildlife, fuels management, and wilderness objectives.

Management Actions (fire & fuels)

1. Take appropriate actions to prevent the loss of meadow habitat and to minimize the potential of a catastrophic fire.

TRANSPORTATION

Management Situation (transportation)

Illegal use of motorized transportation inside the Wilderness has increased at Wahtum Lake, Pacific Crest Trail, Indian Springs camp, and the Herman Creek Trail.

Management Actions (transportation)

1. Install gates at the junction of Forest Road 1310 and Wahtum Lake, and at the junction of Forest Road #2330-660 and Indian Springs and restrict these areas to administrative use only. This will allow continued access to non-wilderness portions of the Forest for other management activities and reduce the need for law enforcement actions inside the Wilderness.

2. Post the Wilderness boundaries appropriately; indicating the closure to motorized vehicles, and enforce the closures.

WILDLIFE

Management Situation (wildlife habitat)

Diverse habitat conditions support a variety of wildlife species. Early seral conditions remnant of historic wildfires are generally decreasing but still persist in some locations. Benson Plateau is one example of such a location. Young, dense conifer stands providing quality habitat for a relatively low diversity of wildlife species persist in many areas. Tracts of mature and "old growth" conifer forests which survived historic fire activity contribute substantially to the structural and functional wildlife habitat diversity.

Wildlife associated with early seral communities such as deer, elk, black bear, songbirds, birds of prey, and woodpeckers are valuable components of both consumptive and nonconsumptive wildlife recreational uses. The prevalence of these species has declined in recent decades due to exclusion of natural wildfire. The decline in abundance of these animals has not only reduced the quality of the wildlife resource in the Wilderness but also the wildlife viewing aspect of the Wilderness user's experience.

Information Needs (wildlife habitat)

1. Inventory and assess key wildlife habitat components.

    * Identify and describe old growth habitat.
    * Identify and describe dry meadow and early seral communities.

2. Inventory wildlife use of key habitat components for species such as the northern spotted owl and Roosevelt elk.

3. Monitor consumptive and nonconsumptive recreational uses to insure compatibility with wildlife and wildlife habitat needs in Wilderness.

Management Actions (wildlife habitat)

1. Assess the appropriateness of re-introducing fire into wilderness vegetation management.

2. Develop appropriate wildlife management objectives consistent with wilderness management goals.

3. Develop environmental education tools to enhance visitor understanding and appreciation for wilderness wildlife and wildlife habitat.

Management Situation (riparian)

The Columbia Wilderness contains important wetland and riparian habitats along with associated wildlife. Use of the Wilderness by some of these species may play an important role in the long term maintenance and viability of some species such as harlequin duck, Barrow's goldeneye, bufflehead, hooded merganser, and western spotted frog.

Information Needs (riparian)

1. Inventory wetland and riparian habitats and monitor use by selected wildlife species, e.g. waterfowl and western spotted frog.

Management Actions (riparian)

1. Develop wildlife management objectives and measures which assure continued habitat adequacy for these species.

Management Situation (T & E species)

Wildlife habitat conditions provided by the Columbia Wilderness play important roles in management of several Threatened and Endangered, and sensitive species. Bald eagles wintering in the Columbia Gorge may be using portions of the wilderness for winter roost sites. The Wilderness is expected to contribute in the recovery of the threatened bald eagle by providing future foraging and possibly nesting habitat.

Peregrine falcons have been observed foraging in some of the higher elevation areas of the wilderness such as Tanner Butte. An active, multi-year program to re-establish the endangered peregrine falcon as a nesting species in the Columbia Gorge-Bull Run vicinity was begun three years ago. The Columbia Wilderness plays an integral role as a foraging area (and possibly natural nesting area) for the peregrine population during and following re-establishment efforts.

Larch Mountain salamanders, once thought to be endemic to a very localized area of the Columbia River Gorge, are believed to inhabit portions of the Columbia Wilderness. Recent discoveries have extended the known range of the species short distances to the north and south of the Gorge.

Confirmation of the presence of the Larch Mountain salamander in the Columbia Wilderness may be pivotal in whether the species is listed as "Threatened" by the U.S. Fish and Wildlife Service.

(Wildlife con't)

Spotted owls are known to inhabit portions of the Wilderness. The East Fork of Herman Creek will be managed as a spotted owl habitat area (SOHA). Portions of Tanner Creek and Eagle Creek will also be included in SOHA's. Some members of the biological community consider the Columbia River Gorge to be a barrier to genetic interchange which jeopardizes the longevity of the spotted owl by creating separate populations on the north and south sides of the Columbia River. Location of the highest quality habitat in the Columbia Wilderness should improve the vigor of the resident populations which in turn should encourage the likelyhood of dispersion across the Columbia River and reduce the possibility of a true genetic barrier.

Information Needs (T & E species)

1. Conduct field reconnaisance of old growth, mature, and other selected forest areas for spotted owl occurrence. Locate and characterize primary activity areas such as roost and nesting sites. Monitor reproductive success and juvenile dispersal.

2. Identify and characterize reproductive habitat for peregrine falcon.

3. Conduct field reconnaisance of selected habitat for Larch Mountain salamander. Delineate and characterize habitat in sites occupied by the salamander. Determine the extent of the species range within the Wilderness.

4. Sample the amphibian population to determine occurrence of western spotted frog. Characterize habitat conditions at sites where this species is located.

5. Monitor Wilderness areas for use by wolverine.

Management Actions (T & E species)

1. Integrate bald eagle forage production objectives into fisheries and recreation management activities at key potential foraging sites such as Wahtum and Rainy Lakes.

2. Integrate peregrine falcon foraging objectives with fire management activities.

3. Integrate protection of key habitat components for Threatened and Endangered and sensitive species with management of recreational use patterns.

Management Situation (Goats)

Mountain goats were transplanted into the Columbia Gorge and the area that now constitutes the Columbia Wilderness in the early 1970's. A remnant of the original population still exists. The Oregon Department of Fish and Wildlife is interested in augmenting the population with additional goat releases.

Habitat use patterns of the existing goats indicates that most use occurs outside of the designated Wilderness. However, increased numbers of goats would be expected to increase use of habitat inside the Wilderness.

Information Needs (Goats)

1. Identify and characterize sensitive plant populations and plant communities which may be adversely impacted by goat populations.

2. Determine goat habitat use patterns to assure integration with Wilderness management activities.

3. Determine whether mountain goats are native to Oregon and specifically the southside of the Columbia Gorge prior to additional transplantings.

Management Actions (Goats)

1. Assess the compatibility of managing mountain goats as a "watchable wildlife" resource, with maintenance of Wilderness values.

2. Monitor the effect of existing mountain goat populations on native plant communities.

3. Coordinate with the the Oregon Department of Fish and Wildlife to ensure that goat population numbers are compatible with Wilderness management objectives.

4. Develop appropriate environmental education measures to enhance "watchable wildlife" values of mountain goats.

5. Integrate mountain goat foraging objectives with fire and recreation management objectives.

MT. HOOD WILDERNESS
ACTION PLAN

FACILITIES AND STRUCTURES

Management Situation

There are facilities within the Mt. Hood Wilderness which are nonconforming with the intent of Wilderness. The types of facilities are listed below:

* Trail shelters
* Plaques giving tribute to specific individuals
* Metal culverts and trail structures constructed of milled lumber
* Remains of at least one airplane wreck
* Remnants from past shelters and Civilian Conservation Corps camps
* Helispots

Management Actions

1. When replacement is required, non-conforming trail structures will be replaced with those using natural materials.
2. Non-conforming and unapproved helispots will have markers removed, all debris removed, the area restored and allowed to grow back.
3. All other nonconforming structures will be evaluated for historic and cultural significance (as outlined in the Wilderness prescription) and, if applicable, removed. This includes facilities that are not permitted, no longer servicable, or unsafe, and facilities that attract overuse of an area. these facilities, so evaluated, will not be maintained, nor will others be allowed to maintain them.

WILDERNESS CARRYING CAPACITY

Management Situation

Before wilderness designation, much of the Mt. Hood Wilderness was popularized in guidebooks and received heavy use at what have become the major destination sites. A very areas that have been receiving heavy use have shown a decrease in resource impacts due to intensive wilderness management practices. Most other areas however are showing unacceptable resource damage, indicated by soil compaction, loss of ground cover, lack of naturally occurring firewood and trampled vegetation, and unacceptable accumulations of human and dog feces.

Carrying Capacity (con't)

During the last decade, the Forest Service's ability to fund wilderness management activities having impact at the ground level has decreased. Implementation of active management techniques to achieve the objectives of the wilderness portion of the Forest Plan takes a significant level of funding. It is recognized that until the funding level matches the intended level of wilderness management, these management practices will have to be phased out. Opportunities for solitude, challenge, and primitive recreation do not meet wilderness standards in some cases.

The estimated carrying capacity for the Mt. Hood Wilderness is 35,475 Recreation Visitor Days (RVDs) per year. This estimate is based on the capacity coefficients of 0.75 RVD/acre/year for the Primitive Trailed WROS zone and 1.0 RVD/acre/year for the Semi-Primitive Trailed WROS zone.

Comparison of visitor numbers and use practices with the estimated wilderness carrying capacity and the proposed limits of acceptable change indicates that the current level of use exceeds capacity during portions of the recreation season in the following areas:

Burnt Lake	Cast Lake	Cairn Basin
Eden Park	Elk Cove	Mt. Hood Summit
Paradise Park	Elk Meadows	Southside Climbing route
Ramona Falls	Cooper Spur	

Management Actions

The following corrective actions are designed to reduce the impact of overuse and restore the wilderness character of specific areas within the Mt. Hood Wilderness. Some of these actions may be currently in effect or planned. All should be implemented during the first decade after the approval of the Forest Plan. It is expected that as pre-trip safety, "no trace'" and wilderness ethic education efforts increase, the need for specific on-site resource protection messages to deal with currently identified problems will decrease. When, and if, monitoring practices indicate restoration to the desired objectives, many of these objectives will be re-assessed and phased out.

Wilderness-Wide Actions

1. Implement the following regulations:

a. Prohibit Building, maintaining, attending, or using a campfire within any meadow (a meadow is defined as an area covered with grass or other non-woody vegetation)

b. Prohibit camping:
Within any meadow.
Within 100 feet of the shoreline of any lake or stream.

c. Require dogs and other domestic pets to be on leases at all times, or prohibit in Wilderness if situation with conflicts from dogs and impacts from dog feces becomes worse. Seeing eye dogs and other pets utilized by handicapped and dogs used in rescue work are excepted.

2. Schedule Wilderness Ranger Patrols for high use areas during the heavy use season; for the purpose of contacting and educating visitors about fire prevention, resource protection, Wilderness monitoring, and maintenance activities.

3. Implement, and monitor results, revegetation plans at sites with identified areas of unacceptable resource damage.

4. Expand data obtained from monitoring code-a-site and photo points; to assist in evaluating the proposed standards defining the Limits of Acceptable Change (LAC).

5. Maintain only designated fire rings; to minimize resource damage in problem areas.

6. Utilize the "Litter Incentive Program" (encouraging visitors to pick up litter for incentive awards) in areas with known litter problems. Emphasize contacting visitors before they enter the Wilderness.

7. Emphasize providing information to Wilderness users on the proper use of Wilderness, user safety, fire prevention, and resource protection at all entry points. Special emphasis will be made to provide information at Riley Horse Camp, the climbing register at Timberline Lodge, and the Zigzag Ranger Station.

Site-Specific Actions

1. Burnt Lake

Maintain only designated fire rings and campsites along the shoreline area.

Maintain a specific resource protection message at a central peak board as long as it proves effective and Make available brouchures that address site-specific impact problems. Also make information available at the two key entry points.

2. RAMONA FALLS

Prohibit camping or building, maintaining, attending or using a campfire within 500 feet of Ramona Falls.

Maintain the peakboard in the falls area; with a site-specific resource protection message.

Retain, and maintain, the fence at the base of the falls. The resource protection message will be retained.

Retain, and maintain, the horse hitchrack.

The upper trailhead and access road will not be expanded or improved.

Develop a site-specific brochure dealing with specific resource problems and make available at the entry point information station.

Prohibit dogs from the trail and surrounding area by 1988. Seeing eye dogs and other pets utilized by handicapped and dogs used in rescue work are exempted.

3. PARADISE PARK

Remove the existing horse hitchrack at the junction of the Pacific Crest National Scenic Trail and the Paradise Park Trail.

Maintain only resource protection messages known to have an impact in reducing specific identified problems; remove all others.

4. ELK COVE AND ELK MEADOWS

Prohibit camping or building, maintaining, attending, or using a campfire within the tree covered islands of Elk Cove and Elk Meadows.

Make avaiable a site specific brochure addressing the major resource impacts at the key entry point information stations.

5. McNEIL POINT

Prohibit building, maintaining, attending, or using a campfire within 500 feet of Mc Neil Point.

Information Needs

There is a need to determine the actual carrying capacity for the Mt. Hood Wilderness for planning and management purposes.
TRAILS

Management Situation

Some of the trails within the Mt. Hood Wilderness are currently receiving a level of use which is causing some form of resource damage and will require relocation or reconstruction. Other trails have identified safety problems for visitors, have been constructed or maintained at a level higher that desired for a wilderness setting, or lead directly to areas receiving heavy and/or excessive use.

Management Actions

1. Prohibit possessing or using saddle, pack, or draft animals on the following trails:

Timberline Trail #600
Yocum Ridge Trail #771
Elk Cove Trail #631
Vista Ridge Trail #626
Newton Creek Trail #646
Cathedral Ridge Trail #625
Paradise Park Loop Trail #757
Pinnacle Ridge Trail #630
Gnarl Ridge Trail #652
Castle Canyon Trail #765

2. Maintain the trail bridges on the Timberline Trail at Coe and Elliot Creeks for user safety; at least until the level of funding allows for a pre-entry education effort that stresses the wilderness challenge.

3. Develop a trail management plan for the Mt. Hood Wilderness which addresses solutions for the current situation and specifically the following trails:

Burnt Lake Trail #772
Top Spur Trail #
Pacific Crest National Scenic Trail
Cathedral Ridge Trail #625

Specific objectives to be addressed in the trail management plan include, but area not limited to:

* Improvement from Timberline Lodge to Ramona Falls to reduce resource damage and safety problems for equestrians.

* Evaluation of the alternative of permanently re-designating the Bald Mountain Trail #785 as the equestrian route from Ramona Falls to Bald Mountain.

* Evaluation of maintenance standards for the section of the PCNST from Ramona Fall to Bald Mountain

* Evaluation of the alternative of excepting llamas from the closure for pack stock.

COMMERCIAL USE

Management Situation

Commercial use of Wilderness requires the issuance of a special use permit. At present, a number of commercial operations are permitted within the Wilderness. These include outfitter guides leading climbing and backpacking parties, filming, and wilderness schools.

There is also a significant amount of commercial or "pseudo-commercial" use of the Wilderness occurring where a special use permit has not been issued. These illegal activities include outfitter guides leading climbing parties in excess of current party size limitations, as well as other "events."

Management Actions

1. Permit only those commercial operations which:

   * Least affect the wilderness environment.

   * Are most dependent upon the wilderness environment and cannot be reasonably accomodated elsewhere.

Information Needs

There is a need to assess the current level of activity and establish both the carrying capacity of commercial activities within the wilderness and the priority to manage it.

NON-COMMERCIAL USE

Management Situation

Currently the only non-commercial use allowed within the Wilderness is the operation of seismic monitors at various locations on Mt. Hood by the U.S. Geological Survey for monitoring potential volcanic activity.

Management Actions

1. Place the following restrictions on the installation and maintenance of these scismic monitors:

2. Restrict access for normal annual maintenance to access by foot. The Allow the use of helicopters only on a case by case basis.

3. Screen all facilities from public view as much as is practicable.

SALMON HUCKEBERRY WILDERNESS
ACTION PLAN

FACILITIES AND STRUCTURES

Management Situation

There are facilities within the Salmon Huckleberry Wilderness that are nonconforming with the Wilderness concept. The types of facilities are listed below:

* One trail shelter

* The remains of various structures including cabins, mines, fencing, telephone lines, and lookout foundations.

* One airplane wreck.

* Facilities of a ride-in horsecamp, including bulletin boards, hitch racks, and fabricated camping stoves.

Management Actions

1. Remove existing improvements, structures, and facilities not essential to the protection of the Wilderness resource, or of historical significance.

2. All other non-conforming structures will be evaluated for historic and cultural significance (as outlined in the Wilderness Prescription) and, if applicable, removed. this includes facilities that are not permitted, no longer useable, servicable, or unsafe, and facilities that attract over-use of an area. these facilities, so evaluated, will not be maintained, nor will others be allowed to maintain them.

WILDERNESS CARRYING CAPACITY

Management Situation (capacity)

The estimated carrying capacity of the Salmon Huckleberry Wilderness is 33,697 Recreation Visitor Days (RVDs) per year. This estimate is based on estimated capacity coefficients of 0.75 RVD/acre/year for the Primitive Trailed WROS zone and 1.0 RVD/acre/year for the Semi-primitive Trailed WROS.

With the exception of Plaza Lake and the section of Salmon River Trail below the bluffs but within the Wilderness boundary, very little use occurs within the Salmon Hucklebrry Wilderness. This lack of use apppears to be due to the very rugged terrain and lack of water sources along the existing trail system, which is located primarily along the river bottom or along the ridgetops with major elevation differences inbetween.

Some unacceptable resource damage as indicated by soil compaction, loss of ground cover, and trampled vegetation is occurring in sites along the lower portion of the Salmon River Trail and at Plaza Lake.

Management Actions

The following corrective actions are designed to reduce the impact of overuse and restore the wilderness character of specific areas within the Wilderness. Some of these actions may be currently in effect or planned. All should be implemented during the first decade after the approval of the Forest Plan. It is expected that as pre-trip safety, "no trace'" and wilderness ethic education efforts increase; the need for specific on-site resource protection messages to deal with currently identified problems will decrease. When, and if, monitoring practices indicate the desired objectives have been acheived or are no longer desirable; many of these objectives will be re-assessed.

Wilderness Wide Actions

1. Schedule Wilderness Ranger patrols for high use areas during the heavy use season; for the purpose of contacting and educating visitors about resource protection, wilderness monitoring, and maintenance activities.

2. Implement, and monitor results, revegetation plans at sites with resource damage.

3. Maintain only designated fire rings; to minimize resource damage in problem areas.

Information Needs (capacity)

There is a need to determine the actual carrying capacity for the Salmon Huckleberry Wilderness for planning and management purposes. A consistent inventory process needs to be implemented throughout the wilderness to establish descriptive baseline information.

TRAILS

Management Situation (trails)

Many miles of trails and several preliminary survey lines for roads have been abandoned. Other trails have received excessive resource damage due to poor location or past use of motorized vehicles. The Salmon River Trail currently receives level III maintenance and is designated as a National Recreation Trail under the National Recreation Trails System.

Management Actions (trails)

1. Prohibit possessing or using saddle, pack, or draft animals on the following trails:

* Kinzel Lake Trail #665
* Salmon River Trail #742
* Plaza Trail #783 (Portion From Forest Boundary to Trail #781)
* Cool Creek Trail #794
* Fir Tree Trail #674
* Boulder Ridge Trail #783A
* Salmon Mountain Trail #787
* Green Canyon Way Trail #793A
* Bonanza Trail #786
* Hunchback Trail #793

2. Develop a Trail Management (Development) Plan for the Salmon Huckleberry Wilderness. The plan will addresse the current situation and identifysolutions which will allow for providing and maintaining a trail system that meets legal direction, management needs for protecting resources and distributing visitor use, and minimizes maintenance costs. This will include evaluating the potential of reconstructing previously abandoned routes (Refer to Forest Wide Standards for Dispersed Recreation).

3. Remove the Salmon River Trail from designation as a National Recreation Trail and maintain the trail at level I within the Wilderness.

4. Require dogs and other domestic pets on the lower Salmon River Trail to be on leases at all times.

COMMERCIAL USE

Management Situation

Currently, there is very little, if any, commercial use in the Salmon-Huckleberry Wilderness.

Management Actions

1. Permit only those commercial operations which:

   * Least affect the wilderness environment.

   * Are most dependent upon the wilderness environment and cannot be reasonably accomidated elsewhere.

2. If commercial use increase to a point where there are user conflicts, additional restrictions may be required in the future.

NON-COMMERCIAL USE

Management Situation

Currently, there are no non-commercial uses.

Management Actions

1.All future non-commercial uses will be evaluated to insure they meet wilderness management direction prior to approval.

APPENDIX D

FOREST PLAN APPENDIX D

ROAD VEHICLE PLAN

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FOREST PLAN APPENDIX D

OFF ROAD VEHICLE POLICY

History

The Mt. Hood National Forest completed an off road vehicle (ORV) management/use plan in 1976. The preparation included extensive public involvement. The finalized product is a use plan that displays general policy and opportunities for summer and winter ORV use.

The current Forest planning regulations (36 CFR Part 219.21g) require each Forest to "classify areas and trails of National Forest System Lands as to whether or not off road vehicle use may be permitted." Through an interdisciplinary process, each of the management areas was evaluated for its potential to support ORV use. The result is a revision of the existing summer (including restrictions for mountain bicycles) and winter ORV use maps. (The maps will be finalized after the period of public review and will define trail, road, and area closures.)

Current Process

This appendix provides: general Forest policy regarding ORV management and use; specific opportunities or restrictions regarding ORV use within each management area; and a list of trails, roads, and areas closed to motorized summer, motorized winter, or nonmotorized mountain bicycle ORV use in all management areas. These ORV guidelines are responsive to the preferred alternative and will not necessarily apply to all alternatives. The list of closures is the best information presently available and represents restrictions associated with ORV use. Please note that road closures not related to recreation management are displayed in the appropriate management area standards. Finalized maps, refined by public review, will be produced prior to the publication of the final EIS. In addition, this document includes a discussion of vehicle management on the Pacific Crest National Scenic Trail (PCT).

General Policy Governing use of Vehicles on the Mt. Hood National Forest.

1. Off road vehicles are a legitimate use of public lands. Their use, however, shall be managed to protect natural resources, provide for public safety, and minimize conflicts among various users of the Forest.

2. Closures and restrictions shall be limited to those necessary to meet land management planning objectives within each management area.

3. Travel on roads is permitted by vehicles licensed for highway travel except where posted for temporary or seasonal administrative closure. All State of Oregon traffic rules and regulations apply on the Forest.

4. Travel off of roads and trails by ORV's is permitted in some management areas; except where posted closed or restricted.

5. In areas not restricted or closed to oversnow vehicle use, oversnow vehicles are permitted to travel Forest lands provided snow depth is sufficient to prevent damage to vegetation.

6. Additional temporary off road closures to oversnow vehicles are necessary during unusually severe wildlife wintering periods. Such closures shall be imposed and signed on-site at discretion of the District Ranger.

7. Off road vehicle policy shall be continually monitored and revisions and updates made as necessary.

8. Closure or restriction of ORV use does not generally exclude administrative use, except where Management Areas standards pose restrictions.

9. Roads, areas and trails closed, or restricted, to Off-Road Vehicle use shall be posted, and closures enforced uder proper CFR regulations.

Specific ORV Direction for each Management Area:

CATEGORY A MANAGEMENT AREAS

Management Area A1: Bull Run Watershed

This management area is closed to public entry.

Management Area A2: Wilderness

Federal regulations close the Forest's Wilderness to all forms of ORV use (including nonmotorized mountain bicycles).

Management Area A3: Research Natural Areas

This management area is established to provide for research and education in natural environments. It is closed to all forms of ORV use (including nonmotorized mountain bicycles).

Management Area A4: Special Interest Areas

The special interest areas are designed to provide a variety of recreational opportunities. Each is guided by specific management objectives. The table below displays the potential to use motorized Off-Road Vehicles and mountain bicycles in each of the Special Interest Areas by season of the year.

Table FPD-1 MOTORIZED OFF ROAD VEHICLE AND MOUNTAIN BIKE USE (in special Interest Areas)

SPECIAL INTEREST AREA	Motorized Summer	Motorized Winter	Nonmotorized[1/] Mountain Bicycle
Barlow Tollgate	closed	closed	closed
Columbia Gorge Old Wagon Road	closed	closed	closed
Little Crater Lake	closed	open	closed
Olallie Lake[2/]	closed	closed	closed
Oneonta Gorge	closed	closed	closed
Bagby	closed	closed	closed
Barlow Road	open-east of Cascades[3/] - ---------->		
	closed-west of Cascades---------->		
Face of the Gorge[4/]	closed	closed	closed
Larch Mountain	closed	open	closed
Lost Lake	closed	open	closed
Mitchell Flat	closed	open	closed
Parkdale Lava Beds	closed	closed	closed
Roaring River	closed	closed	closed[5/]
Squaw Meadows	closed	closed	closed
Sugar Pine	closed	closed	closed

1/ Forest roads within these SIA's are available for use by licensed vehicles or mountain bicycles unless posted closed or restricted.

2/ Road 4220 (Skyline) open to oversnow-non wheeled motorized winter use.

3/ Vehicles restricted to maintained roadway-corridor along roadway closed.

4/ Powerline right of way open for ORV use.

5/ Shining Lake Trail #510 open for mountain bicycle use.

Specific ORV Direction for each Management Area (con't)

Management Area A5: Unroaded Recreation, No Timber Harvest

These areas of the Forest are closed to motorized summer and motorized winter ORV use. In addition, the area on the Columbia Gorge Ranger District and the two areas on the Hood River Ranger District are closed to nonmotorized mountain bicycles. (Specified road 1310670 closed to all motorized vehicles.)

Management Area A6: Roaded Recreation, No Timber Harvest

These areas of the Forest are closed to motorized summer, motorized winter, and nonmotorized mountain bicycles ORV use.

Management Area A8: Northern Spotted Owl Habitat

These areas are closed to ORV use; unless ORV use can be demonstrated compatible with managing for spotted owls.

Management Area A9: Key Site Riparian Habitat

Off-Road Vehicle use; other than oversnow vehicles, shall not be allowed Key Site Riparian Areas. Oversnow Vehicle use shall be consistent with riparian management objectives. Closure, or obliteration, of access roads, trails, or equipment trails built or needed for rehabilitation and/or enhancement projects shall be required (following project completion.

Management Area A10: Developed Recreation Sites

All motorized vehicles limited to right of ingress/egress on system roads.

Management Area A11: Winter Sports Recreation Areas

Closed to all forms of ORV use (including nonmotorized mountain bicycles) with the exception of administrative use by permittee or Forest Service.

Management Area A12: Outdoor Education

Closed to all forms of ORV use (including nonmotorized mountain bicycles).

Specific ORV Direction for each Management Area (con't)

CATEGORY B MANAGEMENT AREAS

Management Area B1: Wild, Scenic and Recreational Rivers

There are three classifications of Wild/Scenic rivers: wild, scenic, and recreational. **Wild segments** are closed to all forms of ORV use including nonmotorized mountain bicycles and motorized watercraft. **Scenic segments** restrict motorized ORV use to system roads and close the area to motorized watercraft. Mountain bicycles are allowed on most trails in scenic river segments. The **recreational river segments** restrict motorized use to roads and are open to mountain bicycles and motorized watercraft.

Management Area B2: Scenic Viewsheds

This area is open to motorized winter use. Motorized summer and nonmotorized mountain bicycle ORV use shall be prohibited or restricted to certain routes when such use creates evident negative visual impacts in form, line, color, or texture of landscape.

Management Area B3: Roaded Recreation, Reduced Timber Harvest

These areas are closed to motorized summer and motorized winter ORV use. Nonmotorized mountain bicycle ORV use is excluded on the areas on the Hood River Ranger District and restricted to roads or designated trails on the ZigZag Ranger District. (Specified road 1310670 closed to all motorized vehicles.)

Management Area B4: Pine/Oak Habitat

These areas are closed to motorized summer and winter ORV use.

Management Area B5: Pileated Woodpecker/Pine Marten Habitat

Woodpecker and marten areas and trails in these areas shall be closed to Off-Road Vehicle use; unless use is demonstrated compatible with managing for wood-peckers and martens.

Management Area B6: Special Emphasis Watershed

These areas are open if ORV use is consistent with protecting and enhancing the watershed values. Based on the evaluation criteria provided in the standards; the entire Still Creek, The Dalles, and portions of the Fifteen Mile watersheds shall be closed to motorized summer and motorized winter ORV use.

Management Area B7: General Riparian Areas

Off-road vehicle use in general Riparian Areas shall be managed to prevent damage to riparian resources, wildlife and other resource values.

Specific ORV Direction for each Management Area (con't)

Management Area B8: Earth Flows

These areas are generally open to ORV use.

Management Area B9: Wildlife/Visual Emphasis

This area is closed to motorized summer and motorized winter ORV use. (Specified roads closed to all motorized vehicles year round.)

CATEGORY C MANAGEMENT AREAS:

Management Area C1: Timber Emphasis
Category: C1

These areas are generally open to all forms of ORV use.

Winter Range

This is a Forest-wide standard that provides for management of deer and elk winter range. When "winter range" has been delineated "on-the-ground" motorized vehicles shall be prohibited from November 1 to June 1.

Table FPD-2 SPECIFIC DIRECTION FOR TRAILS, ROADS AND AREAS
(not adequately defined by Management Area direction)

Motorized Summer = S, Motorized Winter = W, Nonmotorized Mtn. Bicycle = Non

Trail, Road, Area Name	TRAIL NUMBER	Status:[1/] S/ W/ Non	Reason for Closure
BARLOW:			
Knebal Springs	474	C/ O/ O	Use conflicts
Bottle Prairie	455	C/ O/ O	Use conflicts
Jean Lake	680	C/ C/ C	Into Wilderness
Douglas Cabin	470	C/ C/ C	Into Wilderness
Jordan Butte	461	C/ C/ C	Into Wilderness
Jordan Cutoff	462	C/ C/ C	Into Wilderness (south of Road 2720)
Boulder Lake	463	C/ O/ O	Use conflicts
Little Boulder	463A	C/ O/ O	Resource concerns
Crane Prairie	464	C/ O/ O	Resource concerns
Crane Creek	478	C/ O/ O	Resource concerns
The Dalles Watershed		C/ C/ C	Municipal watershed
BEAR SPRINGS:			
Barlow Butte	670	C/ C/ O	Use conflicts
Pioneer Woman's Grave	670A	C/ C/ O	Use conflicts
Palmateer View	482	C/ C/ C	Use conflicts
Devil's Half Acre	482A	C/ C/ C	Use conflicts
Barlow Creek	485	C/ C/ C	Use conflicts
Lower Twin Lake	484	C/ C/ C	Use conflicts
Blue Box	483	C/ C/ C	Use conflicts
Timothy Lake	528	C/ O/ C	Use conflicts
Road	3560	O/ C/ O	X-country ski trail
Road	3531	O/ C/ O	X-Country ski trail
Twin Lakes Area		C/ C/ C	Use conflicts,resource concerns
Dinger Lake		C/ O/ O	Resource concerns
Warm Springs Meadow		C/ O/ O	Resource concerns
Trapper Springs Meadow		C/ O/ O	Resource concerns
CLACKAMAS:			
Riverside (NST)	723	C/ C/ C	Use conflicts
Alder Flat	574	C/ C/ C	Use conflicts
Cottonwood Mead.	705	C/ O/ O	Resource concerns
Anvil Lake	724	C/ O/ O	Resource concerns
Buck Lake	728	C/ O/ O	Resource concerns
Cripple Creek	703	C/ C/ O	Use conflicts,resource concerns (portion outside of Roaring River Special Interest Area
Rhododendron Meadow		C/ O/ C	Resource concerns

Table FPD-2 SPECIFIC DIRECTION FOR TRAILS, ROADS AND AREAS (con't)

COLUMBIA GORGE:			
Devil's Rest	420C	C/ C/ C	Access
Larch Mountain	441	C/ C/ C	Access
Multnomah Creek	444	C/ C/ C	Access
Multnomah Creek	446	C/ C/ C	Access
Franklin Ridge	427	C/ C/ C	Access
Oneonta	424	C/ C/ C	Access
Horsetail Creek	425	C/ C/ C	Access
Nesmith Point	428	C/ C/ C	Access
Moffett Creek	430	C/ C/ C	Access
Bell Creek Way	459	C/ C/ C	Access
ESTACADA:			
Fanton	505	C/ O/ O	Resource concerns,use conflicts (east of 4614)
Old Baldy	502	C/ C/ O	Proximity to wilderness
Lookout Springs	507	C/ O/ O	Resource concerns
Huxley Lake	521	C/ O/ O	Resource concerns
Clackamas River	715	C/ C/ O	Use conflicts,resource concerns
Hillockburn	516	C/ O/ O	Resource concerns
Memaloose	515	C/ O/ O	Use conflicts,resource concerns
Fish Creek Mtn.	541	C/ O/ O	Use conflicts,resource concerns
Skookum Lake	543	C/ O/ O	Use conflicts,resource concerns
Thunder Mountain	543	C/ O/ O	Use conflicts,resource concerns
Bagby	544	C/ C/ C	Use conflicts, Into wilderness
Whetstone Mtn.	546	C/ C/ C	Into Wilderness
Bull of the Woods	550	C/ C/ C	Into Wilderness
Pansy	551	C/ C/ C	Into Wilderness
Dickey Creek	553	C/ C/ C	Into Wilderness
Elk Lake Creek	559	C/ C/ C	Into Wilderness
HOOD RIVER:			
Lakeshore	656	C/ O/ C	Use conflicts,resource concerns
Lost Lake Butte	616	C/ O/ O	Resource concerns
Zigzag	678	C/ O/ O	Resource concerns
Polallie Ridge	643	C/ C/ O	Resource concerns
Timberline	600	C/ C/ C	Into Wilderness
Gumjuwac	480	C/ O/ O	Resource concerns
East Fork	650	C/ O/ O	Resource concerns
Elk Meadows	645	C/ C/ C	Into Wilderness
Vista Ridge	626	C/ C/ C	Into Wilderness
Pinnacle Ridge	630	C/ C/ C	Into Wilderness
Elk Cove	631	C/ C/ C	Into Wilderness
McGee Creek	627	C/ C/ C	Into Wilderness
Cathedral Ridge	625	C/ C/ C	Into Wilderness

Table FPD-2 SPECIFIC DIRECTION FOR TRAILS, ROADS AND AREAS (con't)

HOOD RIVER-ROADS:			
Road	1310670	C/ C/ C	Protect ROS
Road	3520	O/ C/ O	Closed to wheeled and motorized use from 12/1 to 4/15
Road	3520620	O/ C/ O	" "
Road	3500670	O/ C/ O	" "
Road	3540	O/ C/ O	" "
Road	3500680	O/ C/ O	" "
Road	3545	O/ C/ O	Closed to wheeled and motorized use from 12/1 to 4/15 from jun Rd 3545/3534620 west to Rd3355
ZIGZAG:			
Eagle Creek	501	C/ C/ C	Into Wilderness
Douglas	781	C/ C/ C	Into Wilderness
Boulder Ridge	783A	C/ C/ C	Into Wilderness (BLM)
Bonanza	786	C/ C/ C	PVT land, Into Wilderness
Salmon River	742	C/ C/ O	Into Wilderness (closed to nonmotorized use from Rd 2618 to Rd 2656309)
Hunchback Mtn.	793	C/ C/ C	Into Wilderness
Flag Mountain	766	C/ C/ O	Watershed values
Still Creek	780	C/ C/ O	Watershed values
Dry Lake	672	C/ C/ C	Into Wilderness
Jackpot Meadows	492	C/ C/ C	Into Wild River segment
Fir Tree	674	C/ C/ C	Into Wilderness
Kinzel Lake	665	C/ C/ C	Into Wilderness
Castle Canyon	675	C/ C/ C	Into Wilderness
Mirror Lake	664	C/ C/ C	Use conflicts
Pioneer Bridle	795	C/ C/ C	Barlow Road SIA
Hidden Lake	779	C/ C/ C	Into wilderness
Paradise Park	778	C/ C/ C	Into wilderness
Alpine Ski	660	C/ C/ O	Use conflicts
Glade	661	C/ C/ O	Use conflicts
Mountaineer	798	C/ C/ C	Use conflicts
Burnt Lake	772	C/ C/ C	Into Wilderness
Zigzag Mtn.	775	C/ C/ C	Into Wilderness
McIntyre Ridge	782	C/ C/ C	Into Wilderness
Plaza	783	C/ C/ C	Into Wilderness
West Zigzag Mtn.	789	C/ C/ C	Into Wilderness
Salmon Butte	791	C/ C/ C	Into Wilderness
Timberline	600	C/ C/ C	Into Wilderness
Horseshoe Ridge	774	C/ C/ C	Into Wilderness
Cast Creek	773	C/ C/ C	Into Wilderness
Ramona Falls Loop	797	C/ C/ C	Into Wilderness
Bald Mtn. Trail	784	C/ C/ C	Boundary of Wilderness
Top Spur	785	C/ C/ C	Tie into PCT/adj to Wilderness

Table FPD-2 SPECIFIC DIRECTION FOR TRAILS, ROADS AND AREAS (con't)

ZIGZAG-ROADS:	2612	0/ C/ 0	Closed to wheeled vehicles, from 11/1 to 4/15 (closed to junction of Road 2656)
Road	2613	0/ C/ 0	Closed to wheeled vehicles from 11/1 to 4/15
Road	2656	0/ C/ 0	" "
Road	1825	0/ C/ 0	Closed to motorized vehicles from 11/1 to 4/15
Road	2600126	0/ C/ 0	" "
Road	2600128	0/ C/ 0	" "
Road	2600226	0/ C/ 0	" "
Road	2600522	0/ C/ 0	" "
Road	2645	0/ C/ 0	" "
Road	2650	0/ C/ 0	Closed to motorized vehicles- 11/1 to 4/15 from Hwy 26 to junction of Road 2612/2650126)
Road	2650131	0/ C/ 0	Closed to motorized vehicles from 11/1 to 4/15
Road	3500134	0/ C/ 0	" "
Road	3500199	0/ C/ 0	" "

1/ C = Closed O = Open

The Pacific Crest National Scenic Trail

The Mt. Hood will continue to manage the Pacific Crest Trail for foot and pack animal travel. In addition, the trail will be closed to nonmotorized mountain bicycle ORV use for the following reasons:

1. The Pacific Crest Advisory Board supports continued use of the trail for foot and pack animal travel.

2. Safety to the bicyclist (particularly in steep terrain such as the face of the Columbia Gorge).

3. Safety to other user groups (on the Mt. Hood the trail passes through high use areas).

4. The majority of the trail is in Special Interest Areas, Wilderness, or other areas designated closed to mountain bicycle use.

5. Administrative convenience.

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